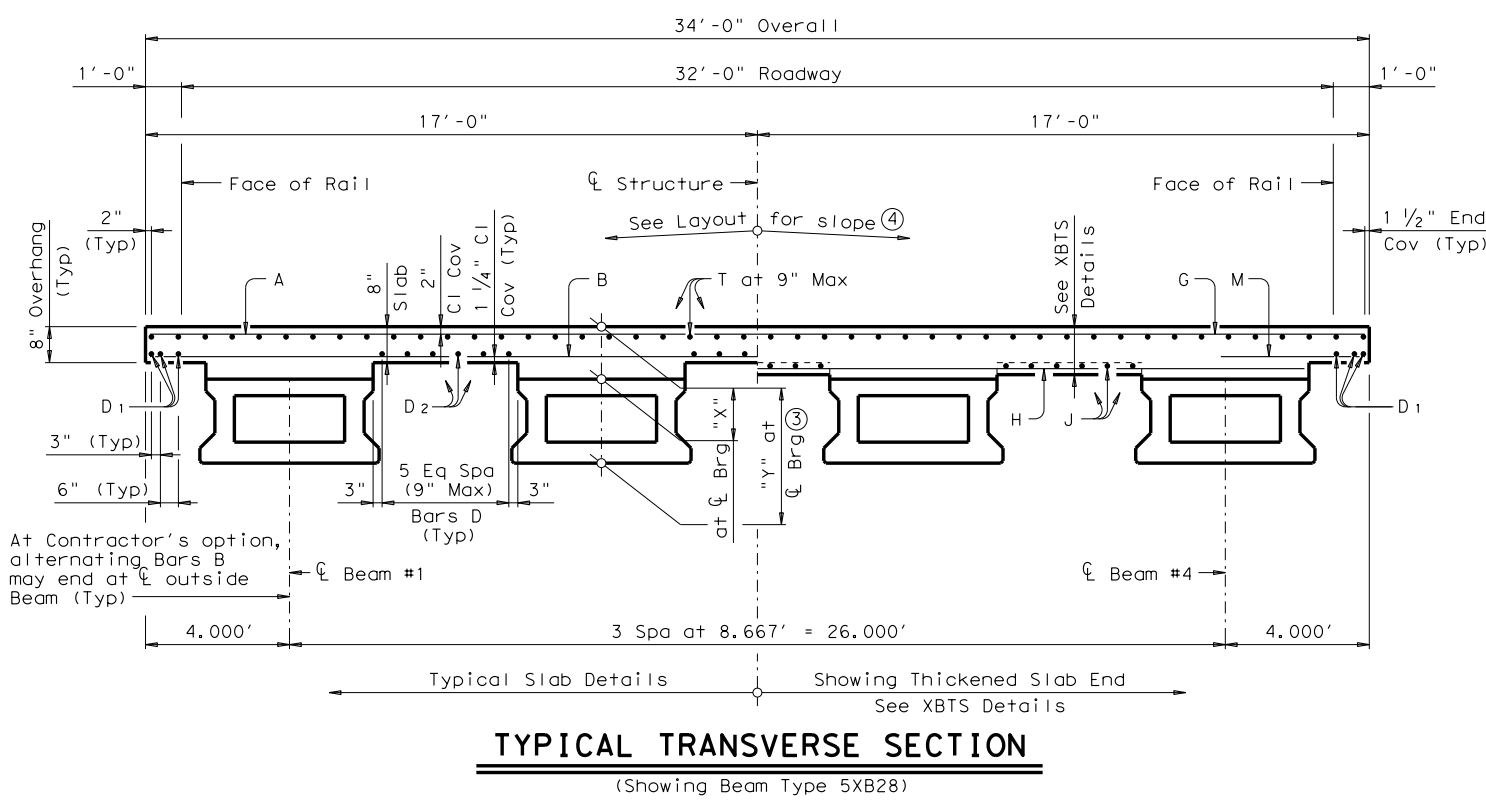
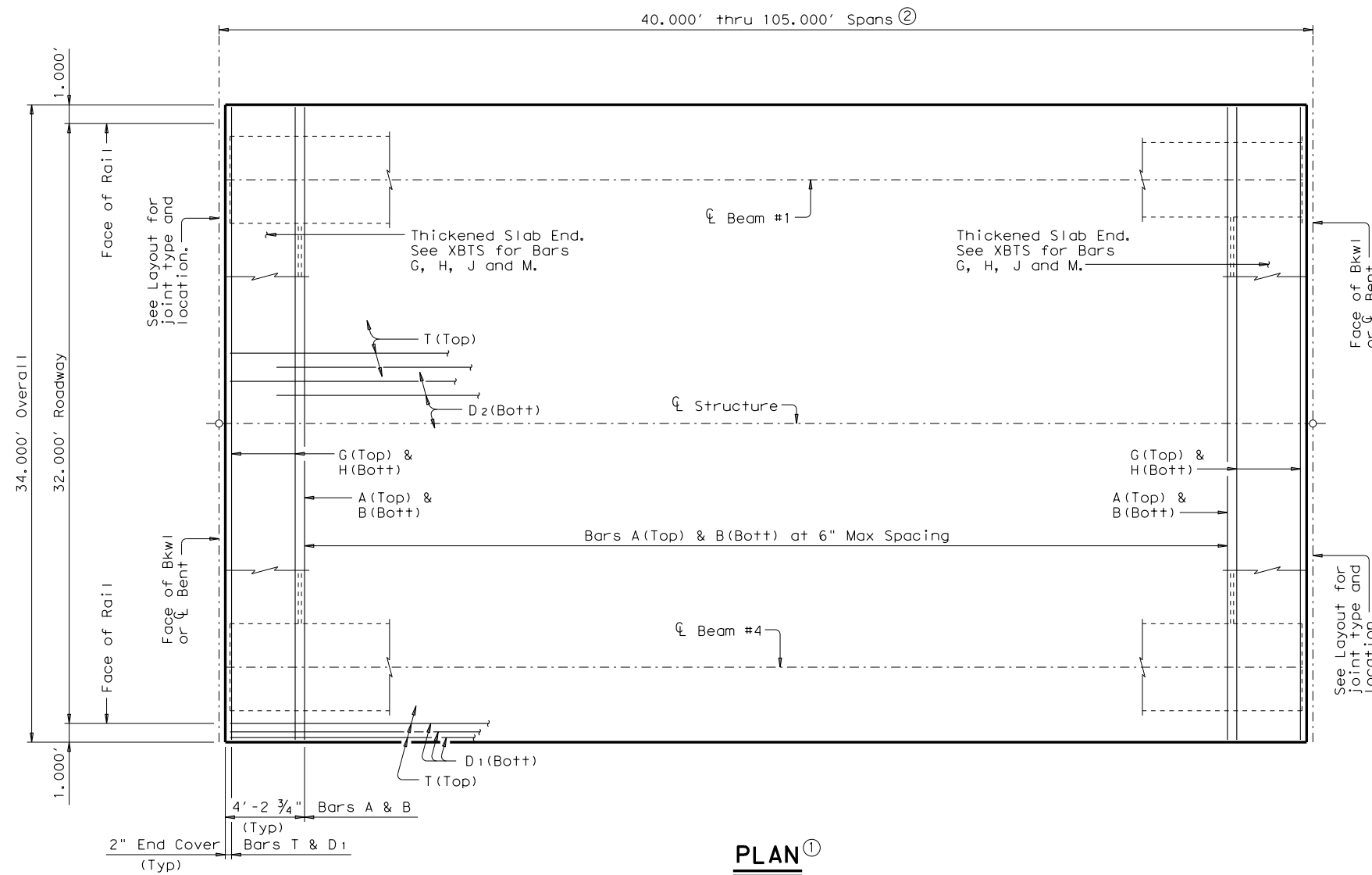


DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: FILE:



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

- ① If multi-span units (with slab continuous over interior bents) are indicated on the Bridge Layout, see Standard XBCS for adjustment to slab reinforcement and quantities.
- ② Span Lengths for Prestressed Concrete X-Beam Type:
 Type 5XB20 for Spans Lengths 40.000' thru 65.000'.
 Type 5XB28 for Spans Lengths 40.000' thru 80.000'.
 Type 5XB34 for Spans Lengths 40.000' thru 95.000'.
 Type 5XB40 for Spans Lengths 40.000' thru 105.000'.
- ③ "Y" value shown is based on theoretical beam camber, dead load deflection from an 8" cast-in-place concrete slab and a constant roadway grade. 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
	In	Ft/In	In	Ft/In	In	Ft/In	In	Ft/In
40	10"	2'-6"	10"	3'-2"	10"	3'-8"	10"	4'-2"
45	10"	2'-6"	10"	3'-2"	10"	3'-8"	10"	4'-2"
50	10"	2'-6"	10"	3'-2"	10"	3'-8"	10"	4'-2"
55	10"	2'-6"	10"	3'-2"	10"	3'-8"	10"	4'-2"
60	10 1/2"	2'-6 1/2"	10"	3'-2"	10"	3'-8"	10"	4'-2"
65	11"	2'-7"	10"	3'-2"	10"	3'-8"	10"	4'-2"
70	---	---	10"	3'-2"	10"	3'-8"	10"	4'-2"
75	---	---	10 1/2"	3'-2 1/2"	10"	3'-8"	10"	4'-2"
80	---	---	11"	3'-3"	10"	3'-8"	10"	4'-2"
85	---	---	---	---	10 1/2"	3'-8 1/2"	10"	4'-2"
90	---	---	---	---	10 1/2"	3'-8 1/2"	10"	4'-2"
95	---	---	---	---	11"	3'-9"	10"	4'-2"
100	---	---	---	---	---	10 1/2"	4'-2 1/2"	
105	---	---	---	---	---	11"	4'-3"	

HL93 LOADING SHEET 1 OF 2

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

SXB-32

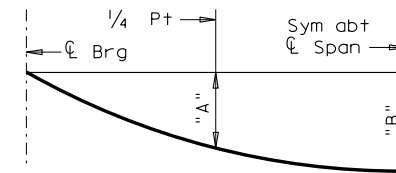
FILE: xbstde47.dgn	DN: JMH	CK: AM	DW: JTR	CK: JMH
©TxDOT June 2011	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

Texas Department of Transportation
Bridge Division Standard

DISCLAIMER:
 The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
 FILE:

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	0.007	40	0.003	0.004	40	0.002	0.003
45	0.021	0.030	45	0.009	0.012	45	0.005	0.007	45	0.004	0.005
50	0.033	0.047	50	0.014	0.019	50	0.008	0.011	50	0.005	0.007
55	0.050	0.070	55	0.020	0.028	55	0.012	0.017	55	0.008	0.011
60	0.071	0.100	60	0.029	0.041	60	0.017	0.024	60	0.011	0.016
65	0.100	0.140	65	0.040	0.056	65	0.024	0.034	65	0.016	0.022
			70	0.055	0.077	70	0.033	0.046	70	0.021	0.030
			75	0.073	0.102	75	0.043	0.060	75	0.029	0.040
			80	0.095	0.133	80	0.056	0.079	80	0.037	0.052
						85	0.072	0.101	85	0.047	0.066
						90	0.091	0.128	90	0.060	0.084
						95	0.113	0.159	95	0.074	0.104
									100	0.091	0.128
									105	0.112	0.157



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	CLASS "S" CONCRETE	TOTAL REINF STEEL
Ft	SF	LF	CY	Lb
40	1,360	158.00	38.5	8,840
45	1,530	178.00	43.2	9,945
50	1,700	198.00	47.9	11,050
55	1,870	218.00	52.7	12,155
60	2,040	238.00	57.2	13,260
65	2,210	258.00	61.9	14,365
70	2,380	278.00	66.7	15,470
75	2,550	298.00	70.7	16,575
80	2,720	318.00	75.2	17,680
85	2,890	338.00	79.1	18,785
90	3,060	358.00	82.9	19,890
95	3,230	378.00	86.0	20,995
100	3,400	398.00	92.1	22,100
105	3,570	418.00	98.7	23,205

- ⑤ Fabricator will adjust lengths for beam slopes as required.
- ⑥ Reinforcing steel weight is calculated using an approximate factor of 6.5 Lbs/SF.

GENERAL NOTES:

Designed according to AASHTO LRFD Specifications. Multi-span units, with slab continuous over interior bents, may be formed with the details shown on this sheet and Standard XBCS. See XBTS Standard for Thickened Slab End Details and quantity adjustments. See PCP or PMDF Standards for details and quantity adjustments if either of these options are used. See XBMS Standard for miscellaneous details. All reinforcing must be Grade 60. Concrete strength $f'_c = 4,000$ psi. Bar laps, where required, will be as follows:
 Uncoated ~ #4 = 1'-5"
 ~ #5 = 1'-9"
 Epoxy Coated ~ #4 = 2'-1"
 ~ #5 = 2'-7"
 See railing details for rail anchorage in slab. This standard does not support the use of Transition Bents.

HL93 LOADING

SHEET 2 OF 2

Texas Department of Transportation		Bridge Division Standard	
<h2 style="margin: 0;">PRESTRESSED CONCRETE X-BEAM SPANS</h2> <h3 style="margin: 0;">(TYPE 5XB20 THRU 5XB40)</h3> <h3 style="margin: 0;">32' ROADWAY</h3> <h2 style="margin: 0;">SXB-32</h2>			
FILE: xbstde47.dgn	DN: JMH	CK: AM	DW: JTR
©TxDOT June 2011	CONT	SECT	HIGHWAY
REVISIONS		DIST	SHEET NO.