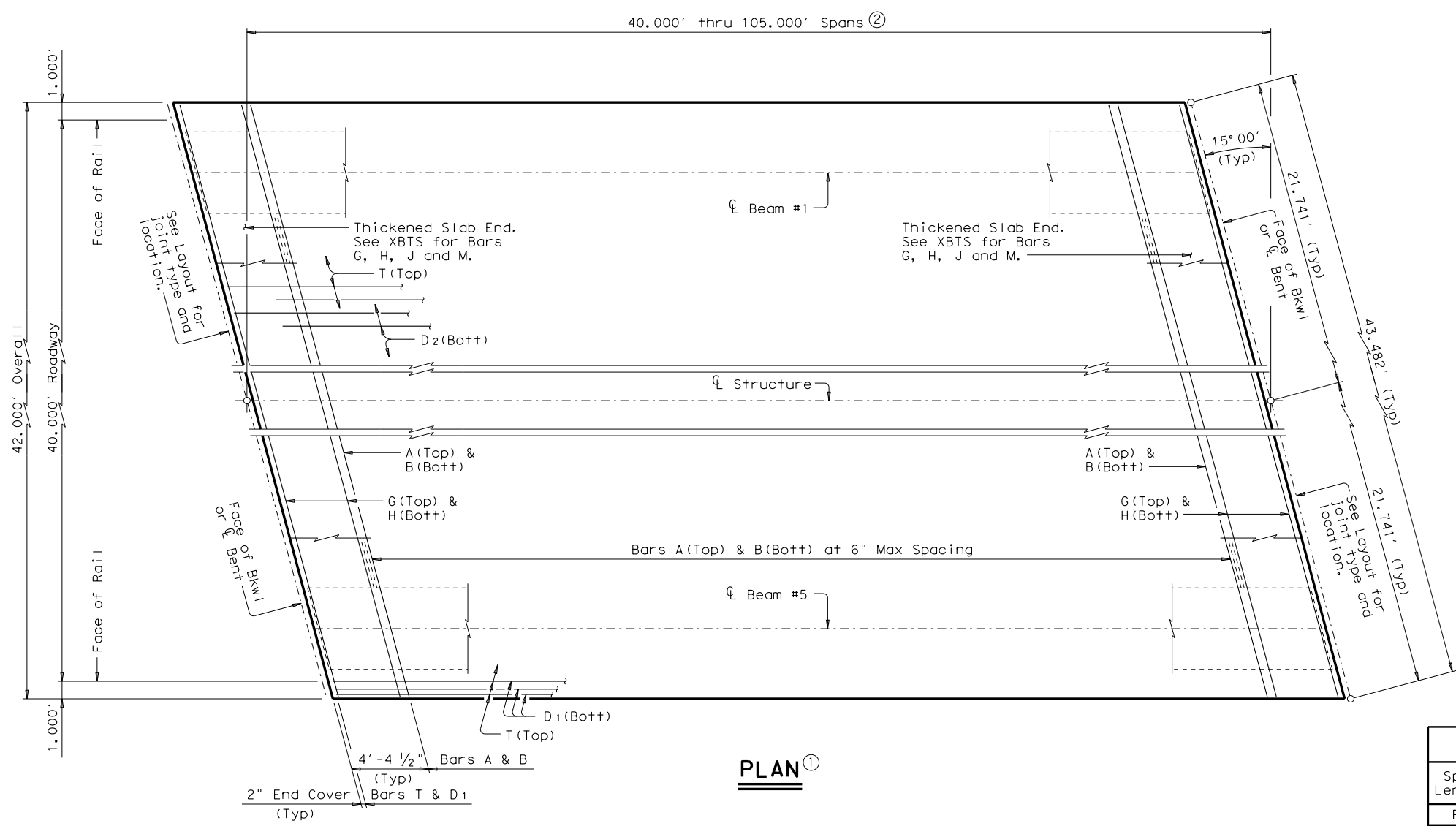


DISCLAIMER: This standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

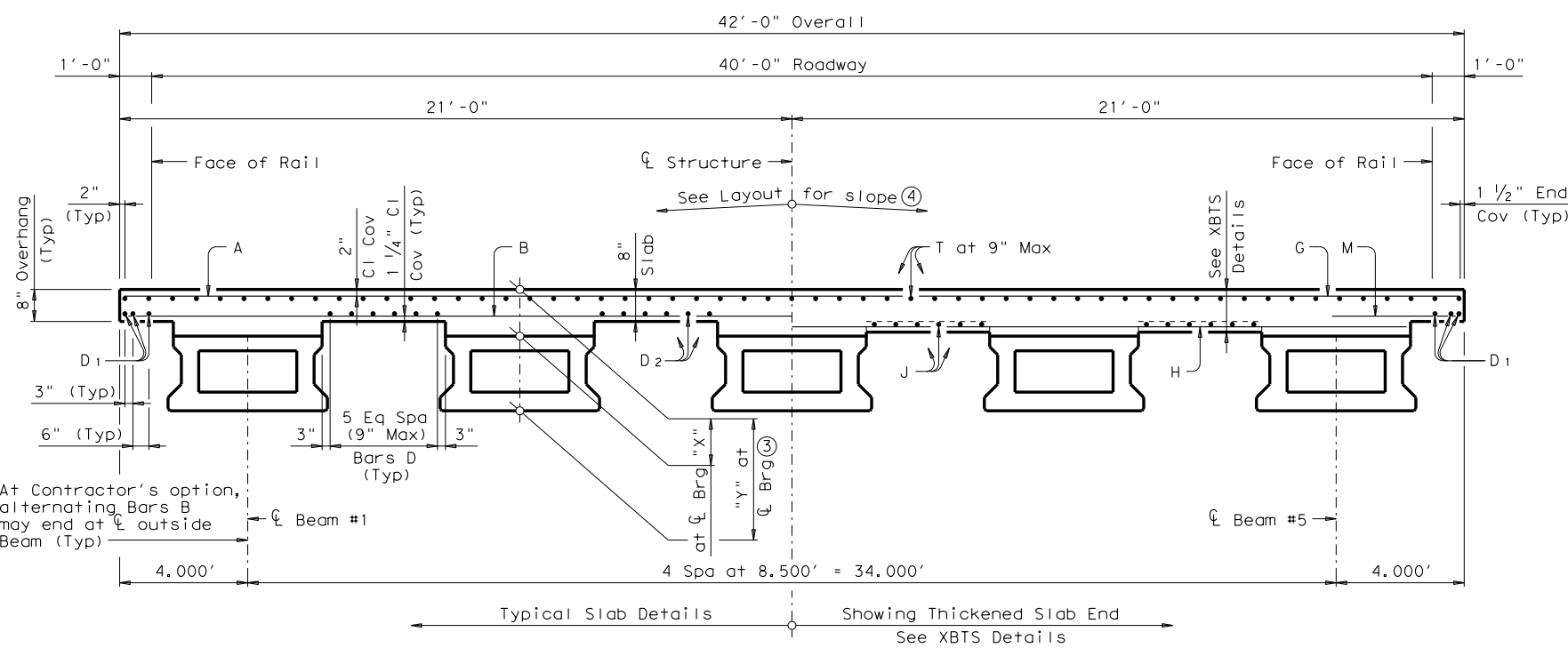
DATE: FILE:

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.
- ④ This standard does not provide for changes in roadway cross-slopes within the structure.

PLAN ①



TYPICAL TRANSVERSE SECTION (Showing Beam Type 5XB28)

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"	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"	3'-8"	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	---	---	---	---	---	---	10 1/2"	4'-2 1/2"

HL93 LOADING SHEET 1 OF 2



**PRESTRESSED CONCRETE X-BEAM SPANS (TYPE 5XB20 THRU 5XB40) 40' ROADWAY 15° SKEW**

**SXB-40-15**

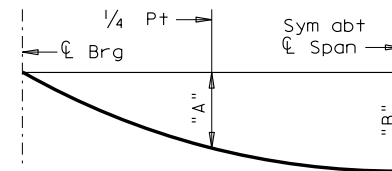
FILE: xbstde68.dgn	DN: JMH	CK: AM	DW: JTR	CK: JMH
©TxDOT June 2011	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

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	0.013	0.018	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	0.046	50	0.014	0.019	50	0.008	0.011	50	0.005	0.007
55	0.049	0.069	55	0.020	0.028	55	0.011	0.016	55	0.008	0.011
60	0.070	0.098	60	0.029	0.040	60	0.017	0.024	60	0.011	0.015
65	0.098	0.137	65	0.039	0.055	65	0.024	0.033	65	0.016	0.022
			70	0.053	0.075	70	0.032	0.045	70	0.021	0.029
			75	0.071	0.100	75	0.042	0.059	75	0.028	0.039
			80	0.093	0.130	80	0.055	0.077	80	0.036	0.051
						85	0.071	0.099	85	0.046	0.065
						90	0.089	0.125	90	0.058	0.082
						95	0.111	0.156	95	0.073	0.102
									100	0.090	0.126
									105	0.110	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	CLASS "S" CONCRETE	TOTAL REINF STEEL
				Lb
Ft	SF	LF	CY	Lb
40	1,680	197.41	47.7	10,920
45	1,890	222.41	53.4	12,285
50	2,100	247.41	59.3	13,650
55	2,310	272.41	65.2	15,015
60	2,520	297.41	71.0	16,380
65	2,730	322.41	76.6	17,745
70	2,940	347.41	82.4	19,110
75	3,150	372.41	87.9	20,475
80	3,360	397.41	92.9	21,840
85	3,570	422.41	97.8	23,205
90	3,780	447.41	102.5	24,570
95	3,990	472.41	107.1	25,935
100	4,200	497.41	114.6	27,300
105	4,410	522.41	119.3	28,665

- 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. 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 Standard XBCS. This standard is drawn showing right forward skew. See Bridge Layout for actual skew direction. 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

		<b>Bridge Division Standard</b>	
<b>PRESTRESSED CONCRETE X-BEAM SPANS</b> <b>(TYPE 5XB20 THRU 5XB40)</b> <b>40' ROADWAY 15° SKEW</b> <b>SXB-40-15</b>			
FILE: xbstde68.dgn	DN: JMH	CK: AM	DW: JTR
©TxDOT June 2011	CONT	SECT	HIGHWAY
REVISIONS		DIST	SHEET NO.