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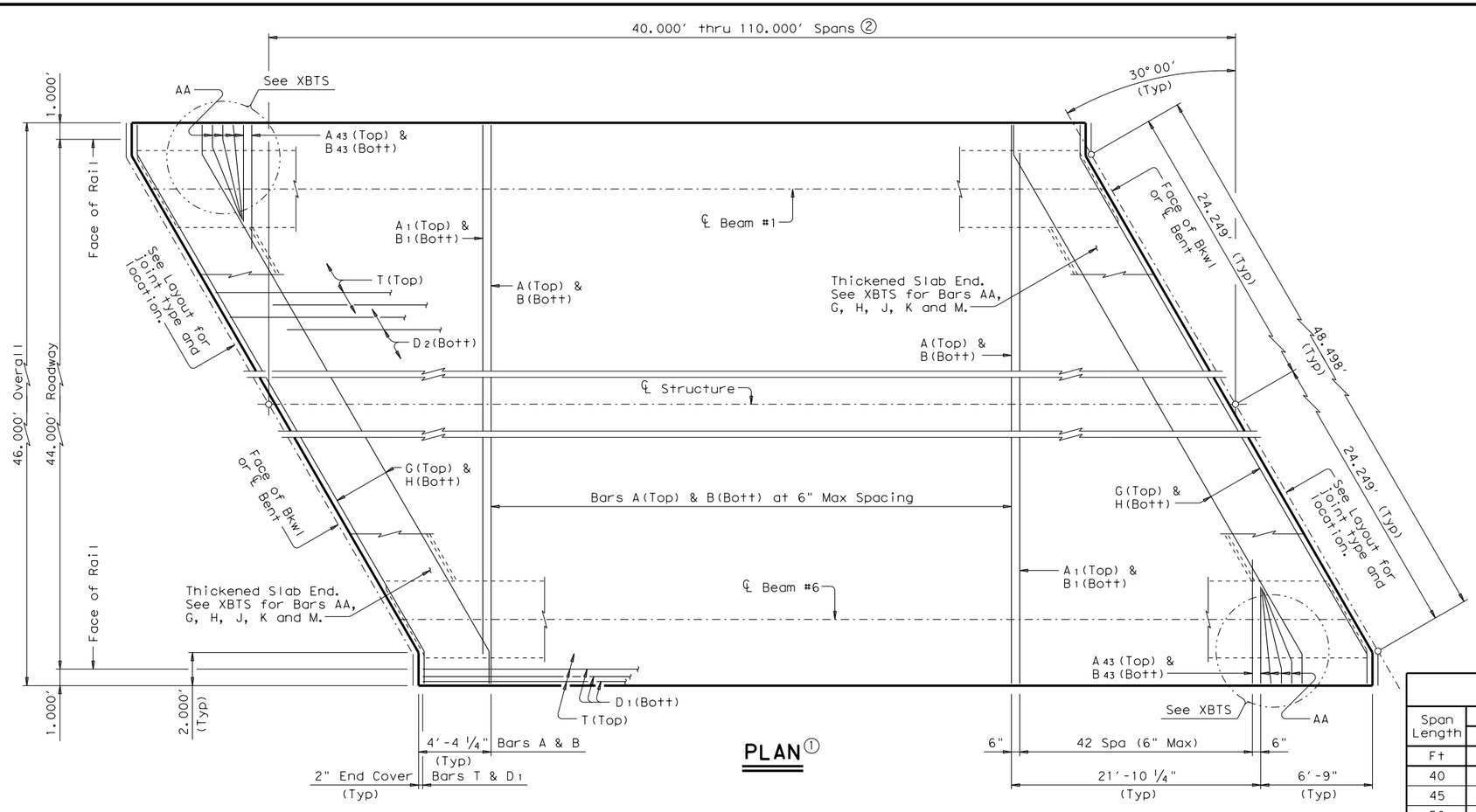
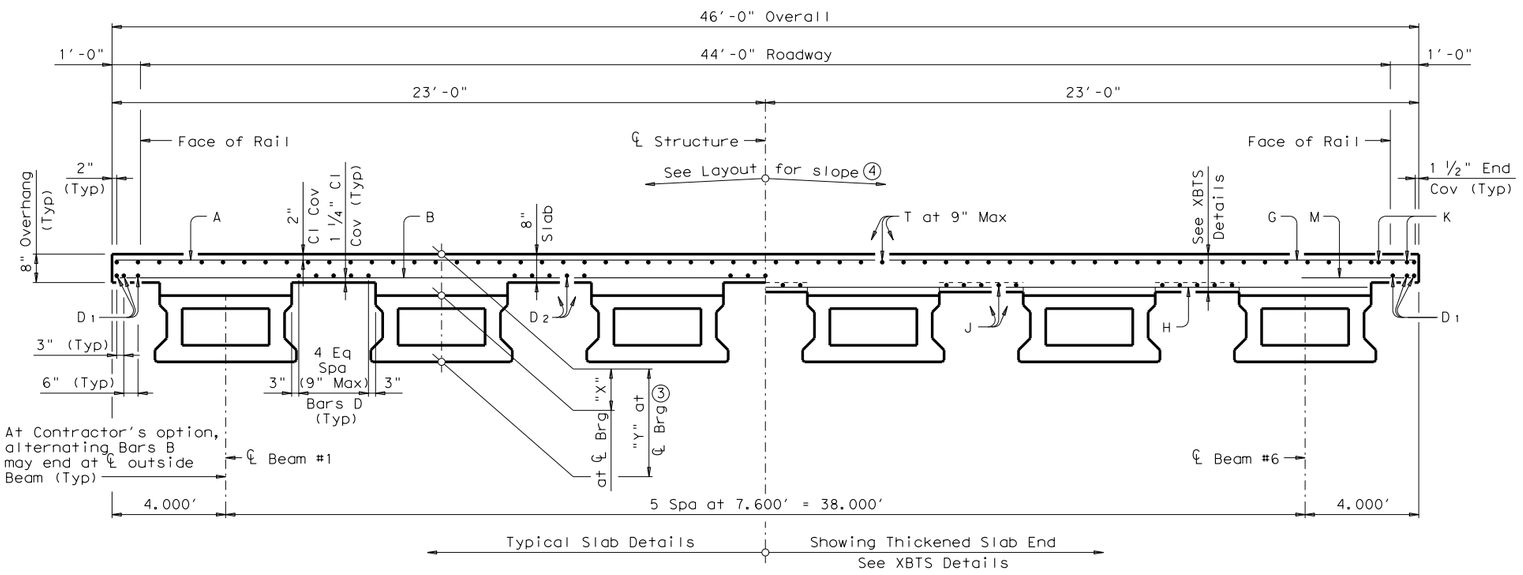


PLAN ①



TYPICAL TRANSVERSE SECTION

(Showing Beam Type 5XB28)

BAR TABLE

BAR	SIZE
A	#5
AA	#5
B	#5
D	#5
G	#5
H	#5
J	#5
K	#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 85.000'.
Type 5XB34 for Spans Lengths 40.000' thru 100.000'.
Type 5XB40 for Spans Lengths 40.000' thru 110.000'.

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.

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"	3'-2"	10"	3'-8"	10"	4'-2"
80	---	---	10 1/2"	3'-2 1/2"	10"	3'-8"	10"	4'-2"
85	---	---	11"	3'-3"	10"	3'-8"	10"	4'-2"
90	---	---	---	---	10 1/2"	3'-8 1/2"	10"	4'-2"
95	---	---	---	---	10 1/2"	3'-8 1/2"	10"	4'-2"
100	---	---	---	---	11"	3'-9"	10"	4'-2"
105	---	---	---	---	---	---	10 1/2"	4'-2 1/2"
110	---	---	---	---	---	---	10 1/2"	4'-2 1/2"

HL93 LOADING

SHEET 1 OF 2

Texas Department of Transportation

Bridge Division Standard

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

44' ROADWAY 30° SKEW

SXB-44-30

FILE: xbstde79.dgn	DN: JMH	CK: AM	DW: JTR	CK: JMH
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REVISIONS				
	DIST	COUNTY		SHEET NO.

DATE:
FILE:

TABLE OF DEAD LOAD DEFLECTIONS

TYPE 5XB20 BEAMS

SPAN LENGTH	"A"	"B"
Ft	Ft	Ft
40	0.011	0.016
45	0.019	0.027
50	0.029	0.041
55	0.043	0.061
60	0.063	0.088
65	0.088	0.123

TYPE 5XB28 BEAMS

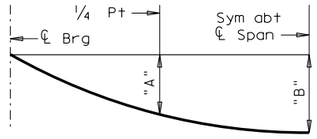
SPAN LENGTH	"A"	"B"
Ft	Ft	Ft
40	0.005	0.007
45	0.008	0.011
50	0.012	0.017
55	0.018	0.025
60	0.026	0.036
65	0.035	0.049
70	0.048	0.067
75	0.063	0.089
80	0.083	0.116
85	0.106	0.149

TYPE 5XB34 BEAMS

SPAN LENGTH	"A"	"B"
Ft	Ft	Ft
40	0.003	0.004
45	0.004	0.006
50	0.007	0.010
55	0.011	0.015
60	0.015	0.021
65	0.021	0.029
70	0.029	0.040
75	0.038	0.053
80	0.049	0.069
85	0.063	0.089
90	0.080	0.112
95	0.100	0.140
100	0.123	0.172

TYPE 5XB40 BEAMS

SPAN LENGTH	"A"	"B"
Ft	Ft	Ft
40	0.002	0.003
45	0.003	0.004
50	0.004	0.006
55	0.007	0.010
60	0.010	0.014
65	0.014	0.019
70	0.019	0.026
75	0.025	0.035
80	0.032	0.045
85	0.041	0.058
90	0.052	0.073
95	0.065	0.091
100	0.081	0.113
105	0.098	0.137
110	0.118	0.166



DEAD LOAD DEFLECTION DIAGRAM

Calculated deflections shown are due to the concrete slab on interior beams only (Ec = 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	⑤ PRESTR CONCRETE X-BEAMS	CLASS "S" CONCRETE	⑥ TOTAL REINF STEEL
Ft	SF	LF	CY	Lb
40	1,840	236.54	52.8	11,960
45	2,070	266.54	59.1	13,455
50	2,300	296.54	65.5	14,950
55	2,530	326.54	72.1	16,445
60	2,760	356.54	78.5	17,940
65	2,990	386.54	84.9	19,435
70	3,220	416.54	91.5	20,930
75	3,450	446.54	97.6	22,425
80	3,680	476.54	103.6	23,920
85	3,910	506.54	109.1	25,415
90	4,140	536.54	114.3	26,910
95	4,370	566.54	119.4	28,405
100	4,600	596.54	124.5	29,900
105	4,830	626.54	133.1	31,395
110	5,060	656.54	138.1	32,890

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

Texas Department of Transportation

Bridge Division Standard

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

44' ROADWAY 30° SKEW

SXB-44-30

FILE: xbstde79.dgn	DN: JMH	CK: AM	DW: JTR	CK: JMH			
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