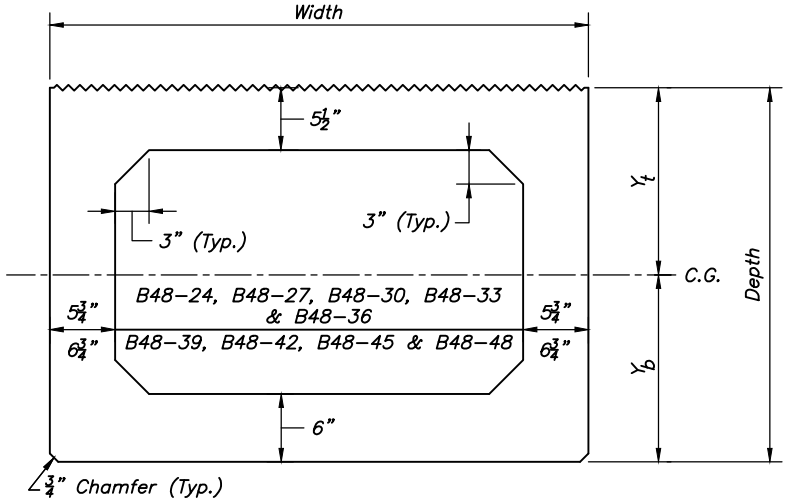

BEAM PROPERTIES

BEAM TYPE	WIDTH (in)	DEPTH (in)	AREA (in^2)	I (in^4)	Y_b (in)	Y_t (in)	S_b (in^3)	S_t (in^3)	WEIGHT (lbs/ft)
B48–24	47.5	24	707	49247	11.86	12.14	4152	4057	736
B48–27	47.5	27	742	67415	13.33	13.67	5057	4932	773
B48–30	47.5	30	776	88921	14.80	15.20	6008	5850	808
B48–33	47.5	33	811	113920	16.28	16.72	6998	6813	845
B48–36	47.5	36	845	142567	17.76	18.24	8027	7816	880
B48–39	47.5	39	935	178498	19.27	19.73	9263	9047	974
B48–42	47.5	42	975	216174	20.75	21.25	10418	10173	1016
B48–45	47.5	45	1016	258238	22.24	22.76	11611	11346	1058
B48–48	47.5	48	1056	304874	23.72	24.28	12853	12557	1100

MAXIMUM SPAN LENGTHS (ft.)

BEAM TYPE	Beam Spacing								
	5 ft.	6 ft.	7 ft.	8 ft.	9 ft.	10 ft.	11 ft.	12 ft.	13 ft.
B48–24	65	62	59	56	54	51	49	48	45
B48–27	71	68	64	61	59	57	54	52	50
B48–30	79	74	70	66	64	61	59	57	55
B48–33	83	80	76	72	69	65	63	61	59
B48–36	90	86	81	77	74	71	68	66	62
B48–39	97	92	88	83	80	77	74	71	68
B48–42	104	98	93	89	85	82	79	76	72
B48–45	109	103	98	94	90	86	83	80	76
B48–48	115	109	103	99	94	91	88	84	80

NOTES:

1. Above drawing is not to scale.
2. Maximum Span Lengths are approximate and are based on the following assumptions:
   - f'c = 6500 psi (Precast)
   - f'ci = 4500 psi (Precast)
   - f'c = 4000 psi (Cast–in–Place Composite Deck)
   - Interior Girders with no skew.
   - Final Allowable Tension at bottom of beam is equal to 0.0948 f'c ksi.
   - HL–93 Live Load.
   - Time–Dependent Losses of Article 5.9.5.3 of the AASHTO–LRFD were used.
   - The CF–PL3 Barrier was assumed on the bridge.
   - 3.5" thick HMA wearing surface.
   - 0.6" diameter low relaxation strands.
3. Weight of beams does not include the weight of the solid sections. Include the weight of the solid sections for design.

massDOT Massachusetts Department of Transportation Highway Division

LRFD BRIDGE MANUAL, PART II

STANDARD 48" WIDE BEAMS

PRECAST CONCRETE BOX BEAMS

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