

TABLE OF REQUIRED BEAM SIZES, DESIGN DATA AND STEEL QUANTITIES

SPAN (ft)	ROLLED BEAM				OPTIONAL PLATE GIRDER						Diaphragm Spaces "N" (ea)	Stud Spacing "X" (in)	Elastomeric Bearing Type	Estimated Quantities	
	Beam Member	Dimension "Y" (in)	Deflection "A" (feet)		Plate Sizes (inches)			Dimension "Y" (in)	Deflection "A" (feet)					Structural Steel (lbs)	
			Slab DL	Total DL	Top Flange	Bot+ Flange	Web		Slab DL	Total DL				Rolled Beam	PL Girder (1)
30	W18 x 130	29.25	0.017	0.021	1 x 12	1 1/4 x 12	1/2 x 17	29.25	0.018	0.022	2	8	SB - 1	18,200	17,200
	W21 x 132	31.83	0.013	0.017	7/8 x 12	1 1/4 x 12	1/2 x 19.5	31.62	0.014	0.017	2	8	SB - 1	19,440	18,110
	W24 x 117	34.26	0.012	0.015	3/4 x 12	1 x 12	1/2 x 22.5	34.25	0.013	0.016	2	9	SB - 1	17,660	16,920
	W27 x 146	37.38	0.008	0.010	3/4 x 14	1 x 14	1/2 x 25.5	37.25	0.009	0.011	2	9	SB - 2	21,190	19,120
	W30 x 173	40.44	0.005	0.007	1 x 15	1 1/4 x 15	1/2 x 28.5	40.75	0.005	0.007	2	9	SB - 3	24,490	23,620
	W33 x 118	42.86	0.007	0.009	3/4 x 12	3/4 x 12	1/2 x 31.5	43.00	0.007	0.009	2	10.5	SB - 1	18,490	18,290
	W36 x 135	45.55	0.006	0.007	3/4 x 12	7/8 x 12	1/2 x 34	45.62	0.006	0.007	2	10.5	SB - 1	20,530	19,450
	W40 x 149	48.20	0.005	0.006	3/4 x 12	1 x 12	1/2 x 36.5	48.25	0.005	0.006	2	10.5	SB - 1	22,320	20,700
35	W18 x 130	29.25	0.032	0.039	1 x 12	1 1/4 x 12	1/2 x 17	29.25	0.033	0.040	2	8	SB - 1	20,850	19,670
	W21 x 132	31.83	0.025	0.031	7/8 x 12	1 1/4 x 12	1/2 x 19.5	31.62	0.026	0.032	2	8	SB - 1	22,140	20,560
	W24 x 117	34.26	0.022	0.027	3/4 x 12	1 x 12	1/2 x 22.5	34.25	0.024	0.029	2	9	SB - 1	20,040	19,160
	W27 x 146	37.38	0.014	0.018	3/4 x 14	1 x 14	1/2 x 25.5	37.25	0.016	0.020	2	9	SB - 2	24,160	21,690
	W30 x 173	40.44	0.010	0.013	1 x 15	1 1/4 x 15	1/2 x 28.5	40.75	0.010	0.013	2	9	SB - 3	28,000	26,930
	W33 x 118	42.86	0.014	0.017	3/4 x 12	3/4 x 12	1/2 x 31.5	43.00	0.013	0.016	2	10.5	SB - 1	20,890	20,640
	W36 x 135	45.55	0.010	0.013	3/4 x 12	7/8 x 12	1/2 x 34	45.62	0.011	0.013	2	10.5	SB - 1	23,280	21,980
	W40 x 149	48.20	0.008	0.011	3/4 x 12	1 x 12	1/2 x 36.5	48.25	0.009	0.011	2	10.5	SB - 1	25,350	23,410
40	W18 x 130	29.25	0.054	0.067	1 x 12	1 1/4 x 12	1/2 x 17	29.25	0.055	0.068	3	8	SB - 1	24,080	22,720
	W21 x 132	31.83	0.042	0.052	7/8 x 12	1 1/4 x 12	1/2 x 19.5	31.62	0.044	0.054	2	8	SB - 1	24,840	23,020
	W24 x 117	34.26	0.038	0.047	3/4 x 12	1 x 12	1/2 x 22.5	34.25	0.041	0.050	2	9	SB - 1	22,430	21,390
	W27 x 146	37.38	0.024	0.031	3/4 x 14	1 x 14	1/2 x 25.5	37.25	0.028	0.035	2	9	SB - 2	27,130	24,270
	W30 x 173	40.44	0.017	0.022	1 x 15	1 1/4 x 15	1/2 x 28.5	40.75	0.017	0.022	2	9	SB - 3	31,510	30,240
	W33 x 118	42.86	0.023	0.028	3/4 x 12	3/4 x 12	1/2 x 31.5	43.00	0.023	0.028	2	10.5	SB - 1	23,300	22,980
	W36 x 135	45.55	0.018	0.022	3/4 x 12	7/8 x 12	1/2 x 34	45.62	0.018	0.023	2	10.5	SB - 1	26,030	24,510
	W40 x 149	48.20	0.014	0.018	3/4 x 12	1 x 12	1/2 x 36.5	48.25	0.015	0.019	2	10.5	SB - 1	28,370	26,130
45	W18 x 130	29.25	0.087	0.108	1 x 12	1 1/4 x 12	1/2 x 17	29.25	0.089	0.109	3	8	SB - 1	26,740	25,190
	W21 x 132	31.83	0.067	0.084	7/8 x 12	1 1/4 x 12	1/2 x 19.5	31.62	0.070	0.086	2	8	SB - 1	27,540	25,470
	W24 x 117	34.26	0.061	0.075	3/4 x 12	1 x 12	1/2 x 22.5	34.25	0.065	0.079	2	9	SB - 1	24,830	23,650
	W27 x 146	37.38	0.039	0.050	3/4 x 14	1 x 14	1/2 x 25.5	37.25	0.045	0.056	2	9	SB - 2	30,110	26,860
	W30 x 173	40.44	0.027	0.035	1 x 15	1 1/4 x 15	1/2 x 28.5	40.75	0.027	0.035	2	9	SB - 3	35,020	33,560
	W33 x 118	42.86	0.037	0.046	3/4 x 12	3/4 x 12	1/2 x 31.5	43.00	0.036	0.045	2	10.5	SB - 1	25,700	25,310
	W36 x 135	45.55	0.028	0.036	3/4 x 12	7/8 x 12	1/2 x 34	45.62	0.029	0.037	2	10.5	SB - 1	28,760	27,030
	W40 x 149	48.20	0.023	0.029	3/4 x 12	1 x 12	1/2 x 36.5	48.25	0.024	0.030	2	10.5	SB - 1	31,390	28,830
50	W18 x 130	29.25	0.132	0.164	1 x 12	1 1/4 x 12	1/2 x 17	29.25	0.135	0.166	3	8	SB - 1	29,400	27,660
	W21 x 132	31.83	0.102	0.128	7/8 x 12	1 1/4 x 12	1/2 x 19.5	31.62	0.107	0.131	2	8	SB - 1	30,230	27,930
	W24 x 117	34.26	0.093	0.114	3/4 x 12	1 x 12	1/2 x 22.5	34.25	0.099	0.121	2	9	SB - 1	27,220	25,880
	W27 x 146	37.38	0.059	0.076	3/4 x 14	1 x 14	1/2 x 25.5	37.25	0.068	0.085	2	9	SB - 2	33,070	29,440
	W30 x 173	40.44	0.041	0.054	1 x 15	1 1/4 x 15	1/2 x 28.5	40.75	0.040	0.053	2	9	SB - 3	38,530	36,870
	W33 x 118	42.86	0.056	0.069	3/4 x 12	3/4 x 12	1/2 x 31.5	43.00	0.055	0.068	2	10.5	SB - 1	28,100	27,650
	W36 x 135	45.55	0.043	0.054	3/4 x 12	7/8 x 12	1/2 x 34	45.62	0.045	0.056	2	10.5	SB - 1	31,510	29,560
	W40 x 149	48.20	0.035	0.044	3/4 x 12	1 x 12	1/2 x 36.5	48.25	0.036	0.045	2	10.5	SB - 1	34,420	31,550
55	W21 x 132	31.83	0.149	0.187	7/8 x 12	1 1/4 x 12	1/2 x 19.5	31.62	0.156	0.192	3	8	SB - 2	33,900	31,350
	W24 x 117	34.26	0.136	0.167	3/4 x 12	1 x 12	1/2 x 22.5	34.25	0.146	0.177	3	9	SB - 2	30,580	29,100
	W27 x 146	37.38	0.087	0.111	3/4 x 14	1 x 14	1/2 x 25.5	37.25	0.100	0.124	3	9	SB - 2	36,970	32,950
	W30 x 173	40.44	0.060	0.079	1 x 15	1 1/4 x 15	1/2 x 28.5	40.75	0.059	0.077	3	9	SB - 3	42,980	41,120
	W33 x 118	42.86	0.082	0.102	3/4 x 12	3/4 x 12	1/2 x 31.5	43.00	0.081	0.100	3	10.5	SB - 2	31,740	31,210
	W36 x 135	45.55	0.063	0.080	3/4 x 12	7/8 x 12	1/2 x 34	45.62	0.065	0.081	3	10.5	SB - 2	35,490	33,320
	W40 x 149	48.20	0.051	0.065	3/4 x 12	1 x 12	1/2 x 36.5	48.25	0.053	0.066	3	10.5	SB - 2	38,720	35,540
	60	W21 x 166	32.48	0.161	0.209	1 x 12	1 5/8 x 12	1/2 x 19.75	32.38	0.187	0.235	3	8	SB - 2	44,710
W24 x 131		34.48	0.171	0.214	7/8 x 12	1 1/8 x 12	1/2 x 22.5	34.50	0.183	0.225	3	9	SB - 2	36,310	33,750
W27 x 146		37.38	0.123	0.157	3/4 x 14	1 x 14	1/2 x 25.5	37.25	0.141	0.176	3	9	SB - 2	39,930	35,530
W30 x 173		40.44	0.085	0.112	1 x 15	1 1/4 x 15	1/2 x 28.5	40.75	0.084	0.109	3	9	SB - 3	46,480	44,430
W33 x 118		42.86	0.117	0.144	3/4 x 12	3/4 x 12	1/2 x 31.5	43.00	0.115	0.142	3	10.5	SB - 2	34,140	33,560
W36 x 135		45.55	0.089	0.113	3/4 x 12	7/8 x 12	1/2 x 34	45.62	0.093	0.115	3	10.5	SB - 2	38,240	35,850
W40 x 149		48.20	0.072	0.092	3/4 x 12	1 x 12	1/2 x 36.5	48.25	0.076	0.093	3	10.5	SB - 2	41,750	38,250

① For Contractor's information only. Structural Steel pay weight shall be based on Rolled Beams.

GENERAL NOTES:
 Designed according to AASHTO LRFD Specifications.
 See Steel Beam Span sheets for beam spacing, diaphragm locations, fabrication notes and references to values "A", "N", "X" & "Y".
 See standard SBEB for bearing details. Indicated beam/girder designs are applicable for spans with 0, 15 and 30 degree skews.
 See Bridge Layout for beam type. Change in beam type within a bridge, for example W18 to W24, is not supported by this standard.

The standard beam designs shown on these sheets are applicable for use only with the Steel Beam Spans shown on Standards SSB-28, SSB-28-15 and SSB-28-30.

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:


		Bridge Division Standard	
<h2>STEEL BEAM STANDARD DESIGNS 28' ROADWAY</h2>			
<h3>SBSD-28</h3>			
FILE: sbstd15.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
©TxDOT August 2004	CONT	SECT	JOB
REVISIONS	DIST		COUNTY
Rev. 02-06: W36 sections			SHEET NO.

TABLE OF REQUIRED BEAM SIZES, DESIGN DATA AND STEEL QUANTITIES

SPAN (ft)	ROLLED BEAM				OPTIONAL PLATE GIRDER						Diaphragm Spaces "N" (ea)	Stud Spacing "X" (in)	Elastomeric Bearing Type	Estimated Quantities	
	Beam Member	Dimension "Y" (in)	Deflection "A" (feet)		Plate Sizes (inches)			Dimension "Y" (in)	Deflection "A" (feet)					Structural Steel (lbs)	
			Slab DL	Total DL	Top Flange	Bot't Flange	Web		Slab DL	Total DL				Rolled Beam	PL Girder (1)
65	W24 x 162	35.00	0.185	0.239	1 1/4 x 12	1 1/2 x 12	1/2 x 22.5	35.25	0.196	0.248	3	9	SB - 2	47,010	44,160
	W27 x 146	37.38	0.170	0.216	3/4 x 14	1 x 14	1/2 x 25.5	37.25	0.195	0.242	3	9	SB - 2	42,910	38,120
	W30 x 173	40.44	0.117	0.154	1 x 15	1 1/4 x 15	1/2 x 28.5	40.75	0.116	0.150	3	9	SB - 3	50,000	47,760
	W33 x 130	43.09	0.142	0.178	3/4 x 12	3/4 x 12	1/2 x 31.5	43.00	0.141	0.176	3	10.5	SB - 2	39,640	35,960
	W36 x 135	45.55	0.123	0.155	3/4 x 12	7/8 x 12	1/2 x 34	45.62	0.128	0.159	3	10.5	SB - 2	40,980	38,370
	W40 x 149	48.20	0.099	0.127	3/4 x 12	1 x 12	1/2 x 36.5	48.25	0.104	0.129	3	10.5	SB - 2	44,760	40,960
70	W24 x 207	35.71	0.189	0.257	1 1/2 x 12	1 7/8 x 12	1/2 x 22.5	35.88	0.203	0.267	3	9	SB - 2	62,830	54,300
	W27 x 178	37.81	0.185	0.244	3/4 x 14	1 3/8 x 14	1/2 x 25.5	37.62	0.229	0.289	3	9	SB - 2	54,800	45,690
	W30 x 173	40.44	0.158	0.207	1 x 15	1 1/4 x 15	1/2 x 28.5	40.75	0.155	0.202	3	9	SB - 3	53,510	51,070
	W33 x 141	43.30	0.173	0.220	3/4 x 12	1 1/8 x 12	1/2 x 31.5	43.38	0.182	0.227	3	9	SB - 2	45,440	42,570
	W36 x 135	45.55	0.166	0.209	3/4 x 12	7/8 x 12	1/2 x 34	45.62	0.172	0.214	3	10.5	SB - 2	43,720	40,900
	W40 x 149	48.20	0.133	0.170	3/4 x 12	1 x 12	1/2 x 36.5	48.25	0.140	0.173	3	10.5	SB - 2	47,790	43,670
75	W27 x 217	38.43	0.193	0.265	1 1/4 x 14	1 3/4 x 14	1/2 x 25.5	38.50	0.209	0.277	3	9	SB - 2	70,050	61,050
	W30 x 191	40.68	0.213	0.286	1 x 15	1 3/8 x 15	1/2 x 28.5	40.88	0.198	0.259	3	9	SB - 3	62,390	56,290
	W33 x 169	43.82	0.184	0.241	1 x 12	1 1/4 x 12	1/2 x 31.5	43.75	0.203	0.259	3	10.5	SB - 2	56,580	49,710
	W36 x 160	46.01	0.176	0.228	7/8 x 12	1 1/4 x 12	1/2 x 34	46.12	0.183	0.233	3	10.5	SB - 2	53,940	49,520
	W40 x 149	48.20	0.175	0.224	3/4 x 12	1 x 12	1/2 x 36.5	48.25	0.184	0.228	3	10.5	SB - 2	50,820	46,390
80	W27 x 235	38.66	0.231	0.322	1 1/4 x 14	1 3/4 x 14	1/2 x 25.75	38.75	0.266	0.354	4	9	SB - 3	81,170	65,980
	W30 x 191	40.68	0.243	0.326	1 x 15	1 3/8 x 15	1/2 x 28.5	40.88	0.256	0.335	4	9	SB - 3	67,190	60,680
	W33 x 201	43.68	0.194	0.263	3/4 x 16	1 1/4 x 16	1/2 x 31.5	43.50	0.237	0.306	4	10.5	SB - 3	71,440	59,470
	W36 x 170	46.17	0.212	0.278	7/8 x 12	1 1/4 x 12	1/2 x 34	46.12	0.238	0.303	4	10.5	SB - 3	61,610	53,690
	W40 x 167	48.59	0.192	0.251	7/8 x 12	1 1/4 x 12	1/2 x 36.5	48.62	0.205	0.262	4	12	SB - 3	60,790	55,190
85	W30 x 235	41.30	0.244	0.341	1 x 15	1 3/4 x 15	1/2 x 28.5	41.25	0.294	0.390	4	10.5	SB - 3	85,870	70,480
	W33 x 221	43.93	0.223	0.308	1 1/4 x 16	1 3/8 x 16	1/2 x 31.5	44.12	0.226	0.306	4	10.5	SB - 3	82,270	74,260
	W36 x 194	46.49	0.236	0.317	1 1/8 x 12	1 1/2 x 12	1/2 x 34	46.62	0.250	0.327	4	10.5	SB - 3	73,170	63,530
	W40 x 183	48.98	0.214	0.285	1 x 12	1 3/8 x 12	1/2 x 36.5	48.88	0.237	0.307	4	12	SB - 3	69,580	61,650
90	W30 x 261	41.61	0.274	0.394	1 1/4 x 15	1 7/8 x 15	1/2 x 28.5	41.62	0.319	0.434	4	10.5	SB - 3	99,940	81,150
	W33 x 241	44.18	0.253	0.357	1 1/8 x 16	1 5/8 x 16	1/2 x 31.5	44.25	0.278	0.377	4	10.5	SB - 3	93,910	80,670
	W36 x 231	46.49	0.268	0.374	1 1/8 x 16	1 1/2 x 16	1/2 x 33.5	46.12	0.256	0.346	4	10.5	SB - 3	90,360	79,520
	W40 x 199	48.67	0.241	0.327	7/8 x 16	1 1/4 x 16	1/2 x 36.5	48.62	0.261	0.344	4	12	SB - 3	79,020	71,760
95	W33 x 291	44.84	0.253	0.374	1 1/2 x 16	2 x 16	1/2 x 31.5	45.00	0.270	0.382	4	12	SB - 3	117,630	100,150
	W36 x 231	46.49	0.299	0.417	1 1/8 x 16	1 1/2 x 16	1/2 x 33.5	46.12	0.317	0.429	4	12	SB - 3	94,950	83,480
	W40 x 215	48.98	0.268	0.370	1 x 16	1 3/8 x 16	1/2 x 36.5	48.88	0.292	0.392	4	12	SB - 3	89,110	80,510
100	W36 x 247	46.67	0.343	0.486	1 1/8 x 16	1 5/8 x 16	1/2 x 33.5	46.25	0.377	0.512	4	12	SB - 3	105,980	90,220
	W40 x 249	49.38	0.283	0.403	1 1/8 x 16	1 5/8 x 16	1/2 x 36.5	49.25	0.316	0.432	4	12	SB - 3	107,000	92,500
105	W36 x 282	47.11	0.356	0.521	1 3/8 x 16	1 7/8 x 16	1/2 x 33.5	46.75	0.388	0.542	5	12	SB - 4	126,780	106,940
	W40 x 277	49.69	0.338	0.494	1 1/4 x 16	1 7/8 x 16	1/2 x 36.5	49.62	0.343	0.479	5	12	SB - 4	124,950	106,520
110	W40 x 277	49.69	0.371	0.542	1 1/4 x 16	1 7/8 x 16	1/2 x 36.5	49.62	0.413	0.577	5	12	SB - 4	130,540	111,210
115	W40 x 297	49.84	0.419	0.624	1 3/8 x 16	2 x 16	1/2 x 36.5	49.88	0.460	0.649	5	12	SB - 4	145,290	122,120
120	W40 x 324	50.20	0.451	0.687	1 5/8 x 16	2 1/8 x 16	1/2 x 36.5	50.25	0.486	0.701	5	12	SB - 4	164,190	136,840

(1) For Contractor's information only. Structural Steel pay weight shall be based on Rolled Beams.

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:

HL93 LOADING SHEET 2 OF 2



**STEEL BEAM
STANDARD DESIGNS
28' ROADWAY**

SBSD-28

FILE: sbstdel5.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS				
Rev. 02-06: W36 sections	DIST	COUNTY		SHEET NO.