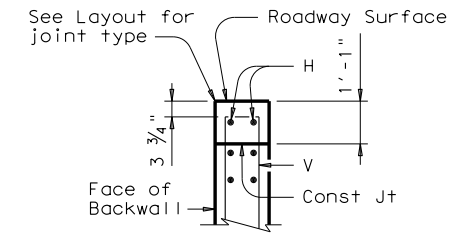
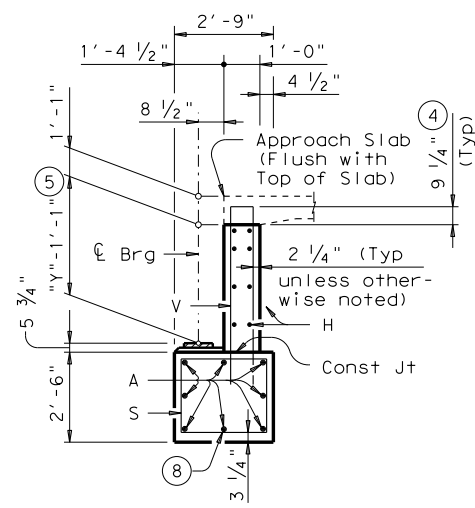
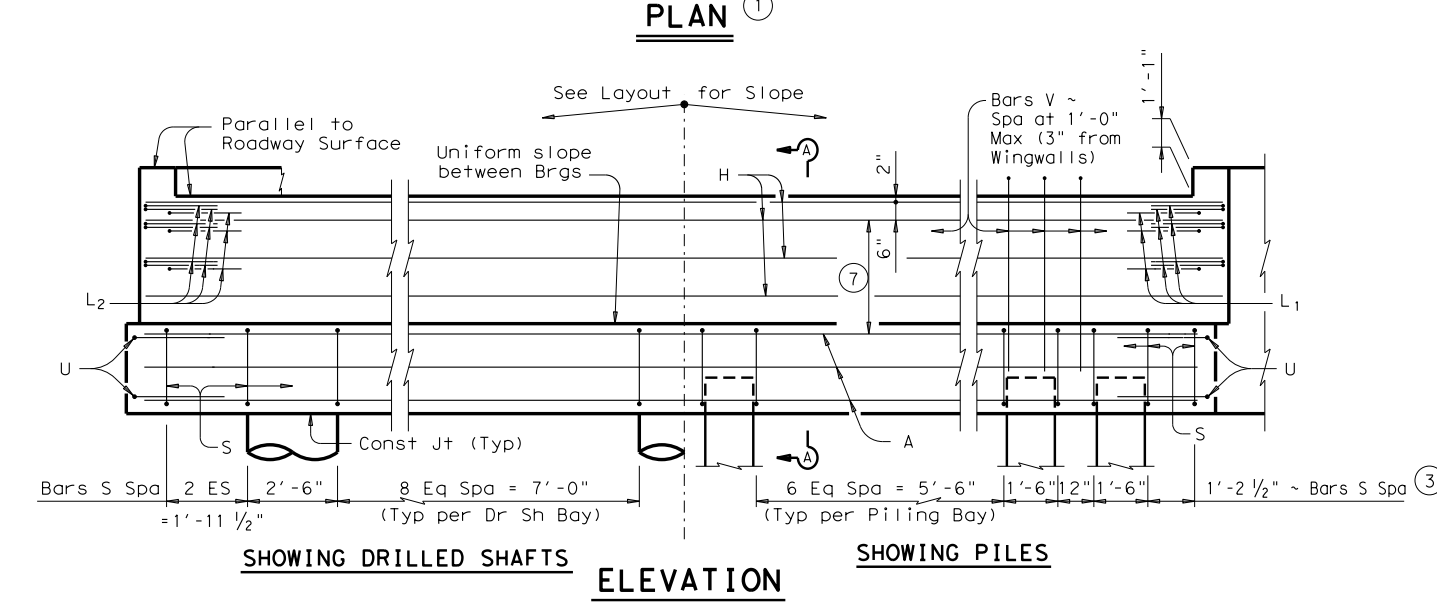
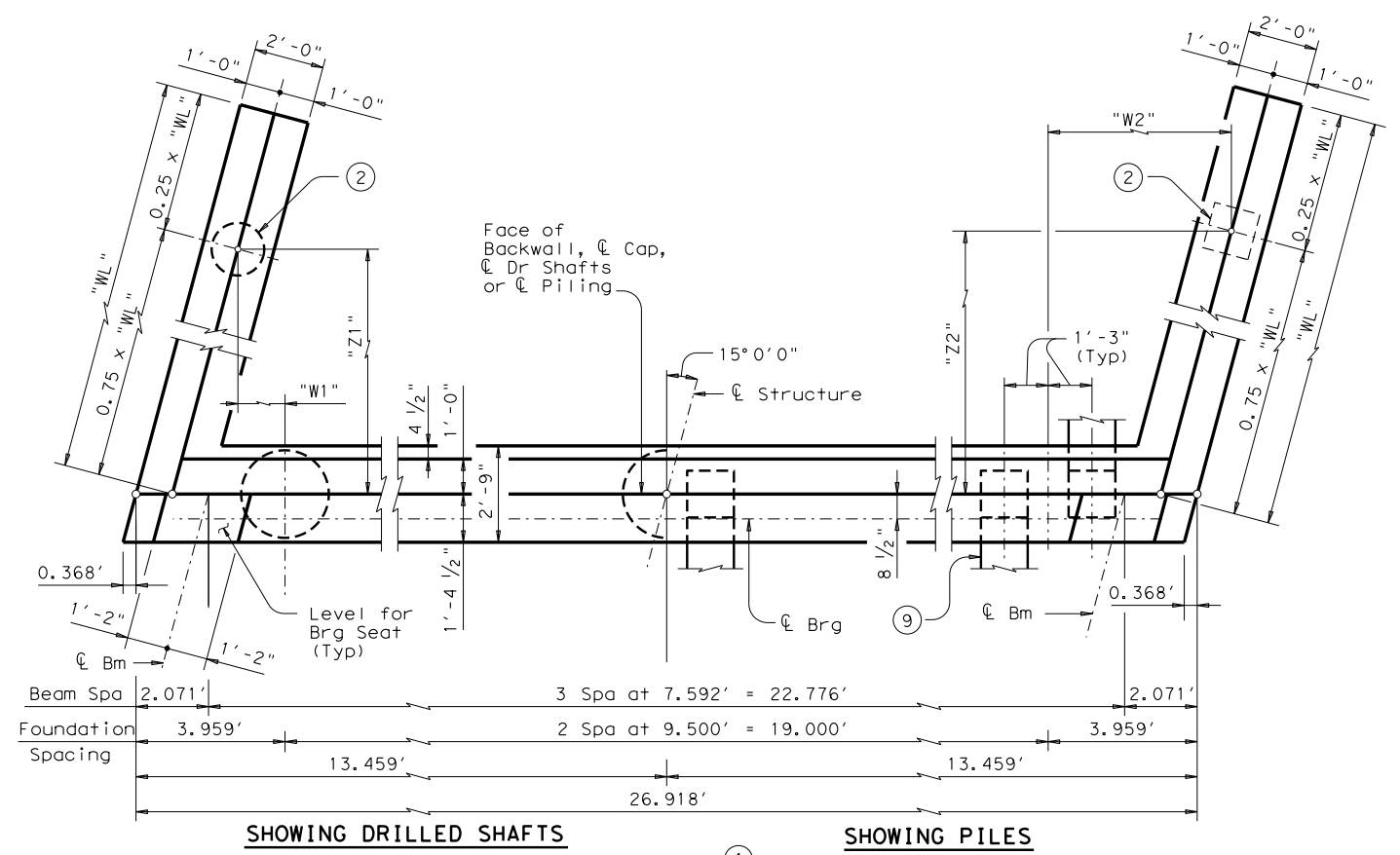


DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: FILE:



Header Slope	Beam Type	Wingwall Type	Wingwall Lgth "WL"	"W1"	"Z1"	"W2"	"Z2"				
2:1	W18	Cantilevered	7.000'	Not Applicable							
	W21	Cantilevered	7.000'								
	W24	Cantilevered	8.000'								
	W27	Cantilevered	8.000'								
	W30	Cantilevered	9.000'								
	W33	Cantilevered	9.000'								
3:1	W36	Cantilevered	10.000'	Not Applicable							
	W40	Cantilevered	10.000'								
	W18	Cantilevered	10.000'								
	W21	Cantilevered	10.000'								
	W24	Cantilevered	11.000'	Not Applicable							
	W27	Cantilevered	12.000'								
	W30	Founded	13.000'					0.400'	9.418'	5.447'	9.418'
	W33	Founded	14.000'					0.206'	10.142'	5.641'	10.142'
W36	Founded	14.000'	0.206'	10.142'	5.641'	10.142'					
W40	Founded	15.000'	0.012'	10.867'	5.835'	10.867'					

GENERAL NOTES:
 Designed according to AASHTO LRFD Specifications.
 Concrete compressive strength $f'_c = 3,600$ psi.
 All cap and wall reinforcing shall be Grade 60.
 See Bridge Layout for beam type, header slope, and foundation type, size and length.
 See standard FD for foundation details and notes.
 See standard CRR for riprap attachment details, if applicable.
 See standard SBBR for location and size of anchor bolt required for erection bracing.
 See applicable rail details for rail anchorage in wingwalls.
 Details are drawn showing Right Forward skew. See Bridge Layout for actual skew direction.
 These abutment details may be used with standard SSB-24-15 only.

- ① See Table A for variable dimensions based on header slope and beam type.
- ② See Table A to determine if wingwall foundations are required.
- ③ For Piling larger than 16", adjust Bars S spacing as required to avoid Piling.
- ④ Increase as required to maintain $3 \frac{3}{4}$ " from Finished Grade.
- ⑤ See SBSD-24 standard for "Y" value.
- ⑥ See Layout to determine if Approach Slab is present.
- ⑦ Use 2 Eq Spa for W18 thru W27 beams and 3 Eq Spa for W30 beams and larger.
- ⑧ With pile foundations, replace Bar A located at bottom centerline of cap with 2 ~ #11 x 5'-6" placed between piling groups. Deduct 79 Lbs from reinforcing steel total.
- ⑨ See Detail "A" on FD standard.

HL93 LOADING SHEET 1 OF 3

**ABUTMENTS
STEEL BEAM SPANS
24' ROADWAY 15° SKEW**

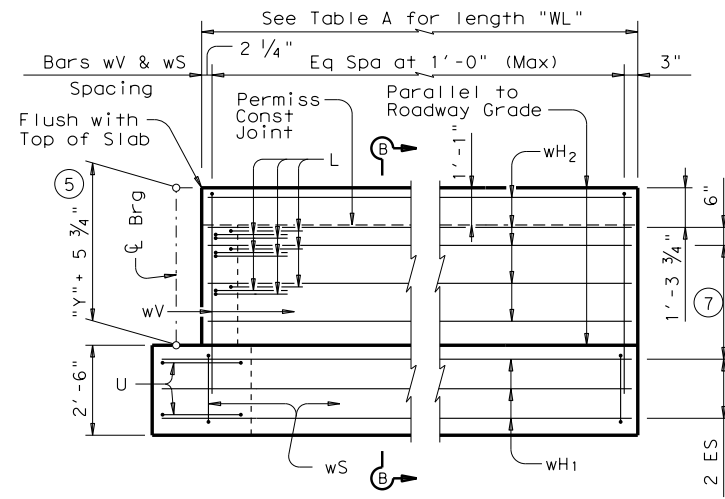
ASB-24-15

FILE: sbstda07.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS				
DIST	COUNTY			SHEET NO.

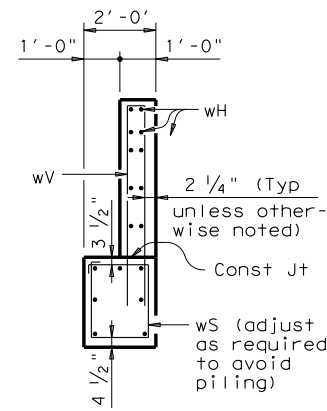
Texas Department of Transportation
Bridge Division Standard

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.

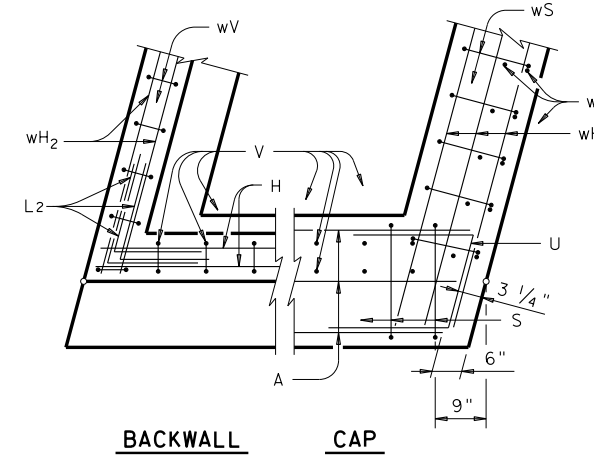
DATE:
FILE:



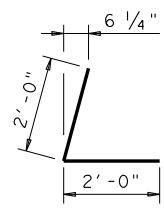
WINGWALL ELEVATION



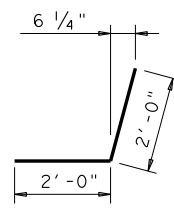
SECTION B-B



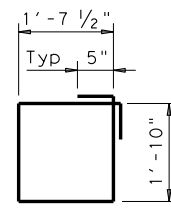
**BACKWALL CAP
CORNER DETAILS**



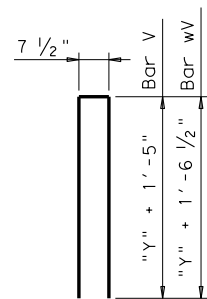
BARS L2



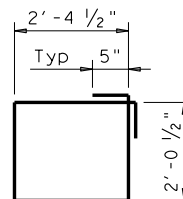
BARS L1



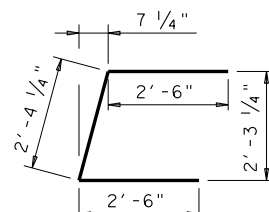
BARS wS



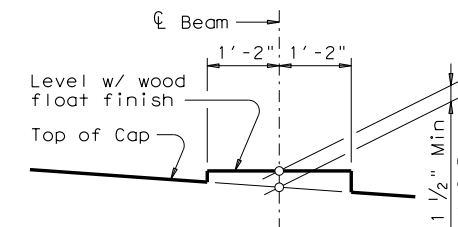
BARS V & wV ⑤



BARS S



BARS U



BEARING SEAT DETAIL

(Bearing surface shall be clean and free of all loose material before placing bearing pad.)

TABLE OF FOUNDATION LOADS

Span Length	Shaft Load	Pile Load
Ft	Tons/Shaft	Tons/Pile
30	45	37
35	49	39
40	52	41
45	55	43
50	58	44
55	61	46
60	64	47
65	67	49
70	70	50
75	72	51
80	75	53
85	79	55
90	82	56
95	85	58
100	88	60
105	94	63
110	96	64
115	101	66
120	104	68

⑤ See SBSD-24 standard for "y" value.

⑦ Use 2 Eq Spa for W18 thru W27 beams and 3 Eq Spa for W30 beams and larger.

HL93 LOADING

SHEET 2 OF 3



Bridge Division Standard

**ABUTMENTS
STEEL BEAM SPANS
24' ROADWAY 15° SKEW**

ASB-24-15

FILE: sbstd07.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS				
DIST	COUNTY			SHEET NO.

2:1 HEADER SLOPE

3:1 HEADER SLOPE

TABLE OF ESTIMATED QUANTITIES (W18 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	6	#6	26'-7"	240
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	8'-4"	226
wH1	14	#6	8'-0"	168
wH2	16	#6	6'-8"	160
wS	16	#4	7'-9"	83
wV	16	#5	8'-7"	143
Reinforcing Steel	Lb			2,429
Class "C" Concrete	CY			12.2

TABLE OF ESTIMATED QUANTITIES (W21 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	6	#6	26'-7"	240
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	8'-11"	242
wH1	14	#6	8'-0"	168
wH2	16	#6	6'-8"	160
wS	16	#4	7'-9"	83
wV	16	#5	9'-2"	153
Reinforcing Steel	Lb			2,455
Class "C" Concrete	CY			12.6

TABLE OF ESTIMATED QUANTITIES (W24 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	6	#6	26'-7"	240
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	9'-5"	255
wH1	14	#6	9'-0"	189
wH2	16	#6	7'-8"	184
wS	18	#4	7'-9"	93
wV	18	#5	9'-8"	182
Reinforcing Steel	Lb			2,552
Class "C" Concrete	CY			13.6

TABLE OF ESTIMATED QUANTITIES (W18 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	6	#6	26'-7"	240
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	8'-4"	226
wH1	14	#6	11'-0"	231
wH2	16	#6	9'-8"	232
wS	22	#4	7'-9"	114
wV	22	#5	8'-7"	197
Reinforcing Steel	Lb			2,649
Class "C" Concrete	CY			13.9

TABLE OF ESTIMATED QUANTITIES (W21 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	6	#6	26'-7"	240
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	8'-11"	242
wH1	14	#6	11'-0"	231
wH2	16	#6	9'-8"	232
wS	22	#4	7'-9"	114
wV	22	#5	9'-2"	210
Reinforcing Steel	Lb			2,678
Class "C" Concrete	CY			14.4

TABLE OF ESTIMATED QUANTITIES (W24 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	6	#6	26'-7"	240
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	9'-5"	255
wH1	14	#6	12'-0"	252
wH2	16	#6	10'-8"	256
wS	24	#4	7'-9"	124
wV	24	#5	9'-8"	242
Reinforcing Steel	Lb			2,778
Class "C" Concrete	CY			15.5

TABLE OF ESTIMATED QUANTITIES (W27 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	6	#6	26'-7"	240
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	9'-11"	269
wH1	14	#6	9'-0"	189
wH2	16	#6	7'-8"	184
wS	18	#4	7'-9"	93
wV	18	#5	10'-2"	191
Reinforcing Steel	Lb			2,575
Class "C" Concrete	CY			13.9

TABLE OF ESTIMATED QUANTITIES (W30 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	8	#6	26'-7"	319
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	10'-5"	283
wH1	14	#6	10'-0"	210
wH2	20	#6	8'-8"	260
wS	20	#4	7'-9"	104
wV	20	#5	10'-8"	223
Reinforcing Steel	Lb			2,808
Class "C" Concrete	CY			15.0

TABLE OF ESTIMATED QUANTITIES (W33 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	8	#6	26'-7"	319
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	10'-11"	296
wH1	14	#6	10'-0"	210
wH2	20	#6	8'-8"	260
wS	20	#4	7'-9"	104
wV	20	#5	11'-2"	233
Reinforcing Steel	Lb			2,831
Class "C" Concrete	CY			15.4

TABLE OF ESTIMATED QUANTITIES (W27 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	6	#6	26'-7"	240
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	9'-11"	269
wH1	14	#6	13'-0"	273
wH2	16	#6	11'-8"	280
wS	26	#4	7'-9"	135
wV	26	#5	10'-2"	276
Reinforcing Steel	Lb			2,882
Class "C" Concrete	CY			16.5

TABLE OF ESTIMATED QUANTITIES (W30 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	8	#6	26'-7"	319
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	10'-5"	283
wH1	14	#6	14'-0"	294
wH2	20	#6	12'-8"	381
wS	28	#4	7'-9"	145
wV	28	#5	10'-8"	312
Reinforcing Steel	Lb			3,143
Class "C" Concrete	CY			17.6

TABLE OF ESTIMATED QUANTITIES (W33 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	8	#6	26'-7"	319
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	10'-11"	296
wH1	14	#6	15'-0"	315
wH2	20	#6	13'-8"	411
wS	30	#4	7'-9"	155
wV	30	#5	11'-2"	350
Reinforcing Steel	Lb			3,255
Class "C" Concrete	CY			18.8

TABLE OF ESTIMATED QUANTITIES (W36 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	8	#6	26'-7"	319
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	11'-5"	310
wH1	14	#6	11'-0"	231
wH2	20	#6	9'-8"	290
wS	22	#4	7'-9"	114
wV	22	#5	11'-8"	268
Reinforcing Steel	Lb			2,941
Class "C" Concrete	CY			16.5

TABLE OF ESTIMATED QUANTITIES (W40 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	8	#6	26'-7"	319
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	11'-11"	323
wH1	14	#6	11'-0"	231
wH2	20	#6	9'-8"	290
wS	22	#4	7'-9"	114
wV	22	#5	12'-2"	279
Reinforcing Steel	Lb			2,965
Class "C" Concrete	CY			16.9

TABLE OF ESTIMATED QUANTITIES (W36 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	8	#6	26'-7"	319
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	11'-5"	310
wH1	14	#6	15'-0"	315
wH2	20	#6	13'-8"	411
wS	30	#4	7'-9"	155
wV	30	#5	11'-8"	365
Reinforcing Steel	Lb			3,284
Class "C" Concrete	CY			19.3

TABLE OF ESTIMATED QUANTITIES (W40 BEAMS)⁽¹⁰⁾

Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-11"	1,102
H	8	#6	26'-7"	319
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	24	#4	9'-8"	155
U	4	#6	7'-4"	44
V	26	#5	11'-11"	323
wH1	14	#6	16'-0"	336
wH2	20	#6	14'-8"	441
wS	32	#4	7'-9"	166
wV	32	#5	12'-2"	406
Reinforcing Steel	Lb			3,400
Class "C" Concrete	CY			20.5

- (8) With pile foundations, replace Bars A located at bottom centerline of cap with 2 - #11 x 5'-6" placed between piling groups. Deduct 79 Lbs from reinforcing steel total.
- (10) Quantities shown are for one Abutment only (with Approach Slab). With no Approach Slab, add 1.0 CY Class "C" Concrete and 80 Lb Reinforcing Steel for 2 additional H bars.



ABUTMENTS STEEL BEAM SPANS 24' ROADWAY 15° SKEW

ASB-24-15

FILE: sbstd07.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT August 2004	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: