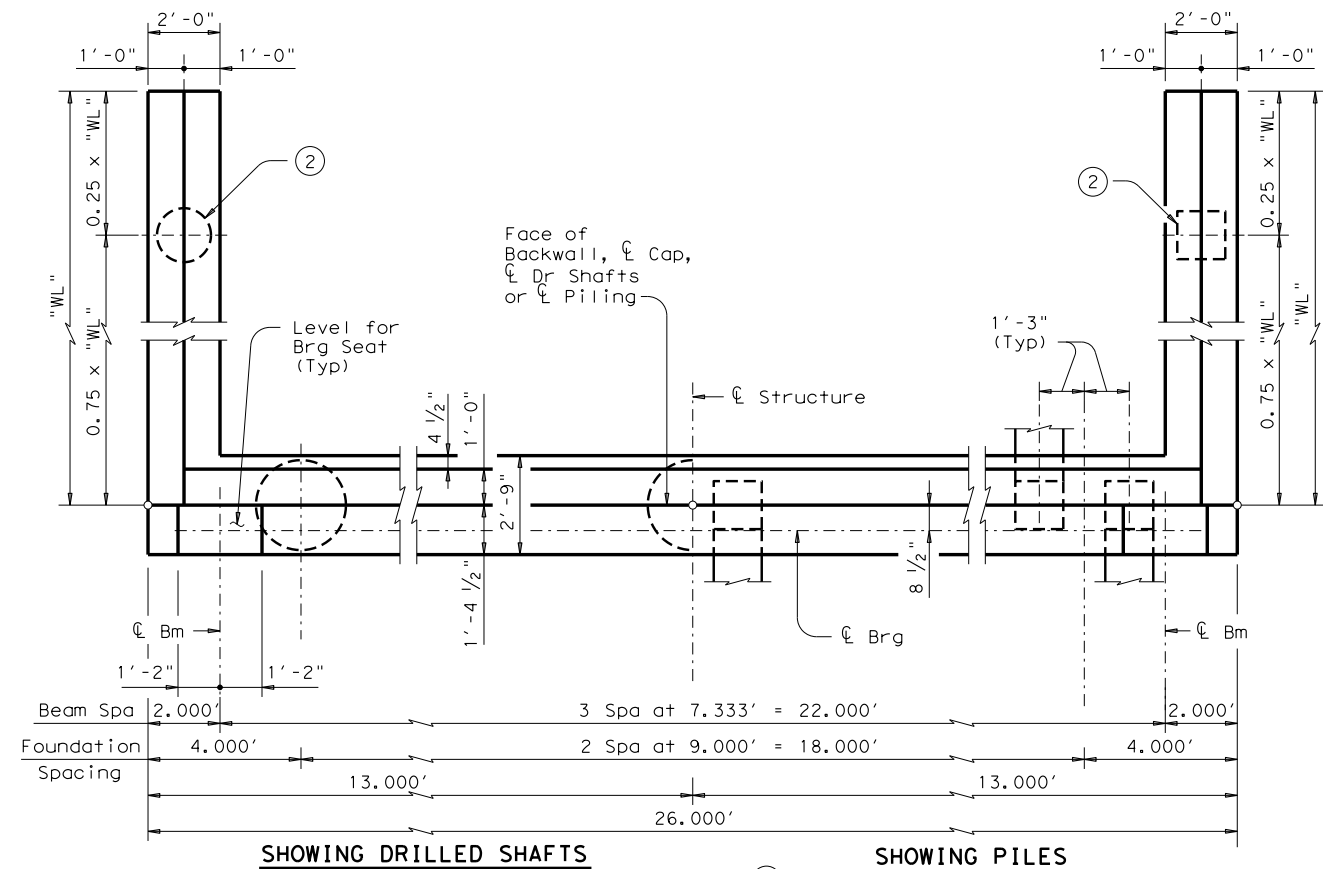
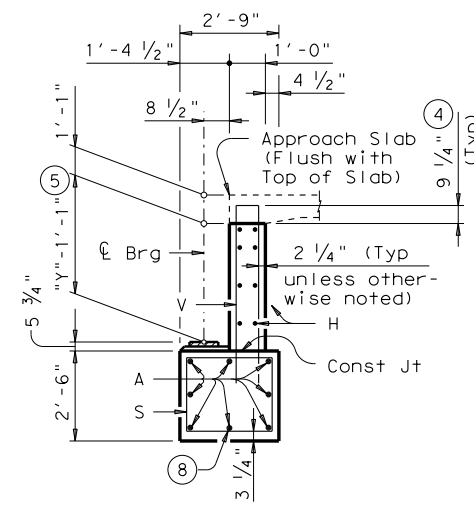


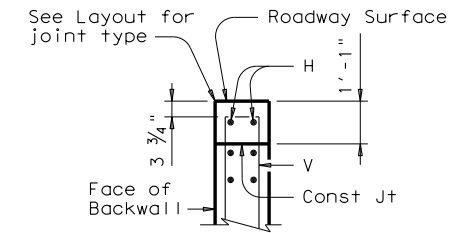
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



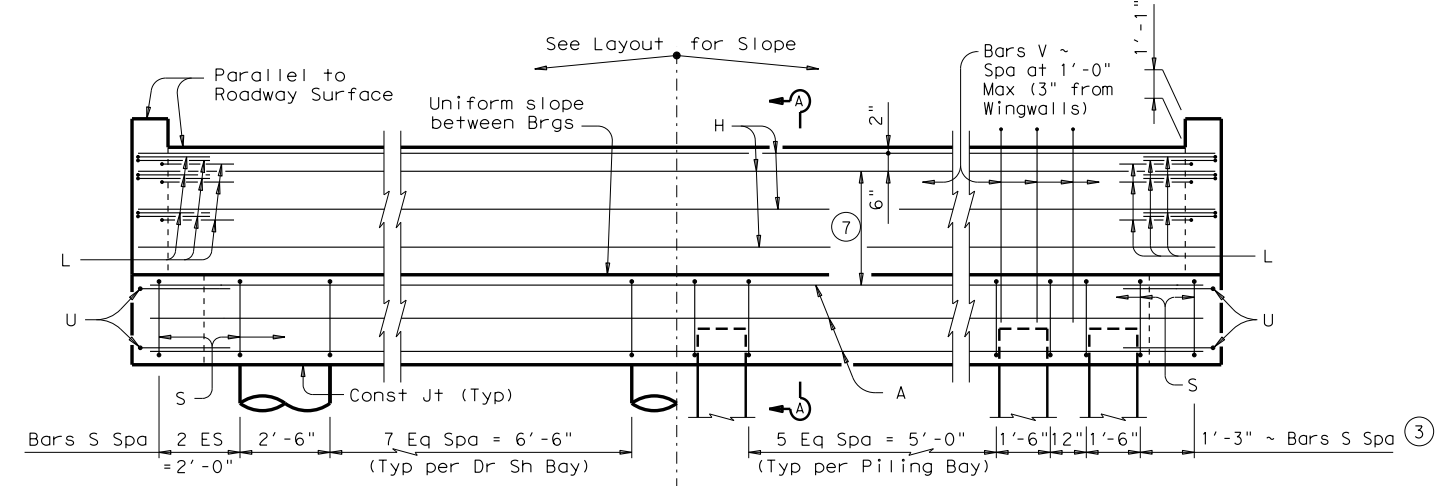
SHOWING DRILLED SHAFTS **PLAN 1** SHOWING PILES



SECTION A-A
(With Approach Slab) 6



BACKWALL DETAIL
(Without Approach Slab) 6



SHOWING DRILLED SHAFTS **ELEVATION** SHOWING PILES

- 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 3/4" from Finished Grade.
- 5 See SBS-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'-0" placed between piling groups. Deduct 80 Lbs from reinforcing steel total.

TABLE A			
Header Slope	Beam Type	Wingwall Type	Wingwall Lgth "WL"
2:1	W18	Cantilevered	6.000'
	W21	Cantilevered	7.000'
	W24	Cantilevered	7.000'
	W27	Cantilevered	8.000'
	W30	Cantilevered	8.000'
	W33	Cantilevered	9.000'
3:1	W36	Cantilevered	9.000'
	W40	Cantilevered	10.000'
	W18	Cantilevered	9.000'
	W21	Cantilevered	10.000'
	W24	Cantilevered	11.000'
	W27	Cantilevered	12.000'
	W30	Cantilevered	12.000'
	W33	Founded	13.000'
W36	Founded	14.000'	
W40	Founded	14.000'	

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 SBRR for location and size of anchor bolt required for erection bracing. See applicable rail details for rail anchorage in wingwalls. These abutment details may be used with standard SSB-24 only.

HL93 LOADING SHEET 1 OF 3



**ABUTMENTS
STEEL BEAM SPANS
24' ROADWAY**

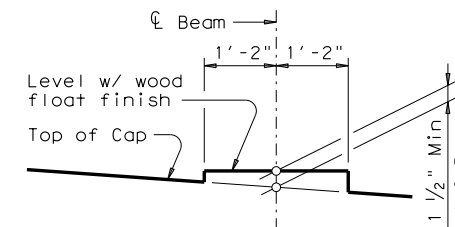
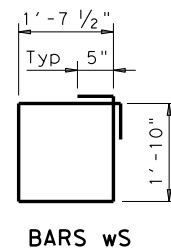
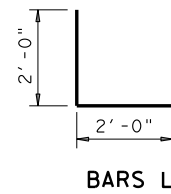
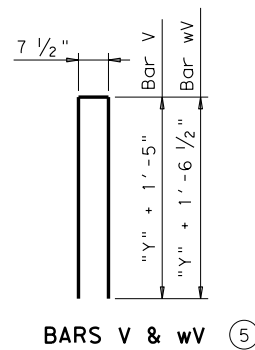
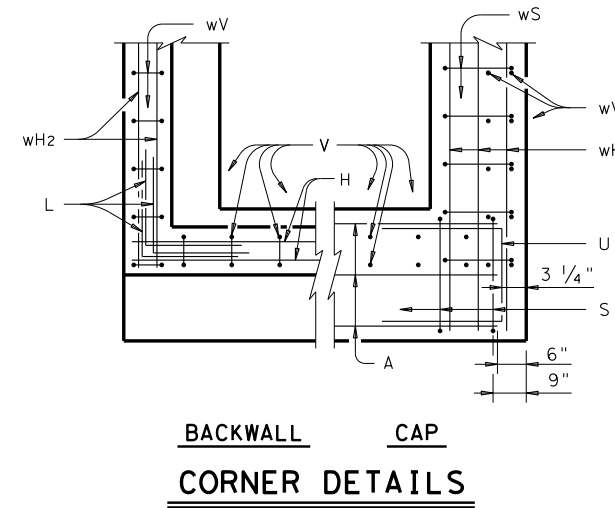
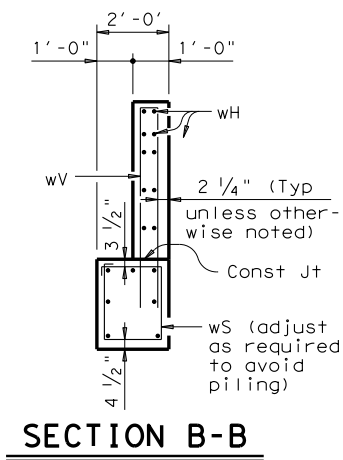
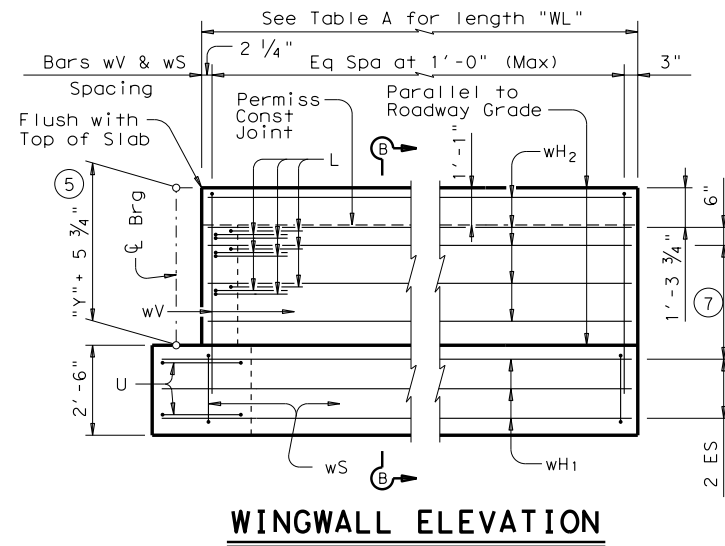
ASB-24

FILE: sbstda06.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS				
DIST	COUNTY		SHEET NO.	

DATE:
FILE:

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:



BEARING SEAT DETAIL

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

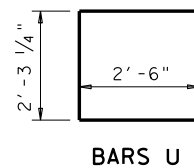
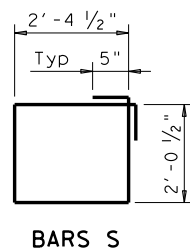


TABLE OF FOUNDATION LOADS

Span Length	Shaft Load	Pile Load
	Ft	Tons/Pile
30	44	36
35	47	38
40	51	40
45	55	42
50	58	44
55	61	45
60	63	46
65	66	48
70	69	49
75	72	51
80	75	52
85	78	54
90	81	55
95	85	57
100	88	59
105	93	62
110	95	63
115	100	65
120	103	67

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**

ASB-24

FILE: sbstd06.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:

2:1 HEADER SLOPE

3:1 HEADER SLOPE

TABLE OF ESTIMATED QUANTITIES (W18 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	6	#6	25'-8"	231
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	8'-4"	217
wH1	14	#6	7'-0"	147
wH2	16	#6	5'-8"	136
wS	14	#4	7'-9"	72
wV	14	#5	8'-7"	125
Reinforcing Steel				Lb 2,285
Class "C" Concrete				CY 11.3

TABLE OF ESTIMATED QUANTITIES (W21 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	6	#6	25'-8"	231
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	8'-11"	233
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 2,385
Class "C" Concrete				CY 12.3

TABLE OF ESTIMATED QUANTITIES (W24 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	6	#6	25'-8"	231
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	9'-5"	246
wH1	14	#6	8'-0"	168
wH2	16	#6	6'-8"	160
wS	16	#4	7'-9"	83
wV	16	#5	9'-8"	161
Reinforcing Steel				Lb 2,406
Class "C" Concrete				CY 12.7

TABLE OF ESTIMATED QUANTITIES (W18 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	6	#6	25'-8"	231
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	8'-4"	217
wH1	14	#6	10'-0"	210
wH2	16	#6	8'-8"	208
wS	20	#4	7'-9"	104
wV	20	#5	8'-7"	179
Reinforcing Steel				Lb 2,506
Class "C" Concrete				CY 13.1

TABLE OF ESTIMATED QUANTITIES (W21 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	6	#6	25'-8"	231
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	8'-11"	233
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 2,608
Class "C" Concrete				CY 14.1

TABLE OF ESTIMATED QUANTITIES (W24 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	6	#6	25'-8"	231
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	9'-5"	246
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 2,708
Class "C" Concrete				CY 15.2

TABLE OF ESTIMATED QUANTITIES (W27 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	6	#6	25'-8"	231
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	9'-11"	259
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 2,504
Class "C" Concrete				CY 13.6

TABLE OF ESTIMATED QUANTITIES (W30 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	8	#6	25'-8"	308
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	10'-5"	272
wH1	14	#6	9'-0"	189
wH2	20	#6	7'-8"	230
wS	18	#4	7'-9"	93
wV	18	#5	10'-8"	200
Reinforcing Steel				Lb 2,649
Class "C" Concrete				CY 14.0

TABLE OF ESTIMATED QUANTITIES (W33 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	8	#6	25'-8"	308
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	10'-11"	285
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 2,757
Class "C" Concrete				CY 15.1

TABLE OF ESTIMATED QUANTITIES (W27 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	6	#6	25'-8"	231
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	9'-11"	259
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 2,811
Class "C" Concrete				CY 16.2

TABLE OF ESTIMATED QUANTITIES (W30 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	8	#6	25'-8"	308
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	10'-5"	272
wH1	14	#6	13'-0"	273
wH2	20	#6	11'-8"	351
wS	26	#4	7'-9"	135
wV	26	#5	10'-8"	289
Reinforcing Steel				Lb 2,985
Class "C" Concrete				CY 16.7

TABLE OF ESTIMATED QUANTITIES (W33 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	8	#6	25'-8"	308
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	10'-11"	285
wH1	14	#6	14'-0"	294
wH2	20	#6	12'-8"	381
wS	28	#4	7'-9"	145
wV	28	#5	11'-2"	326
Reinforcing Steel				Lb 3,096
Class "C" Concrete				CY 17.8

TABLE OF ESTIMATED QUANTITIES (W36 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	8	#6	25'-8"	308
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	11'-5"	298
wH1	14	#6	10'-0"	210
wH2	20	#6	8'-8"	260
wS	20	#4	7'-9"	104
wV	20	#5	11'-8"	243
Reinforcing Steel				Lb 2,780
Class "C" Concrete				CY 15.5


TABLE OF ESTIMATED QUANTITIES (W40 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	8	#6	25'-8"	308
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	11'-11"	311
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 2,890
Class "C" Concrete				CY 16.6

TABLE OF ESTIMATED QUANTITIES (W36 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	8	#6	25'-8"	308
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	11'-5"	298
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 3,209
Class "C" Concrete				CY 19.0

TABLE OF ESTIMATED QUANTITIES (W40 BEAMS) ^⑧				
Bar	No.	Size	Length	Weight
A (8)	8	#11	25'-0"	1,063
H	8	#6	25'-8"	308
L	18	#6	4'-0"	108
S	22	#4	9'-8"	142
U	4	#6	7'-3"	44
V	25	#5	11'-11"	311
wH1	14	#6	15'-0"	315
wH2	20	#6	13'-8"	411
wS	30	#4	7'-9"	155
wV	30	#5	12'-2"	381
Reinforcing Steel				Lb 3,238
Class "C" Concrete				CY 19.4

- ⑧ With pile foundations, replace Bar A located at bottom centerline of cap with 2 - #11 x 5'-0" placed between piling groups. Deduct 80 Lbs from reinforcing steel total.
- ⑨ Quantities shown are for one Abutment only (with Approach Slab). With no Approach Slab, add 1.0 CY Class "C" Concrete and 77 Lb Reinforcing Steel for 2 additional H bars.

HL93 LOADING SHEET 3 OF 3

		Bridge Division Standard
ABUTMENTS STEEL BEAM SPANS 24' ROADWAY		
ASB-24		
FILE: sbstde06.dgn	DN: TxDOT	CK: TxDOT
© TxDOT August 2004	CONTRACT	SECTION
REVISIONS	JOB	HIGHWAY
	DIST	COUNTY
		SHEET NO.