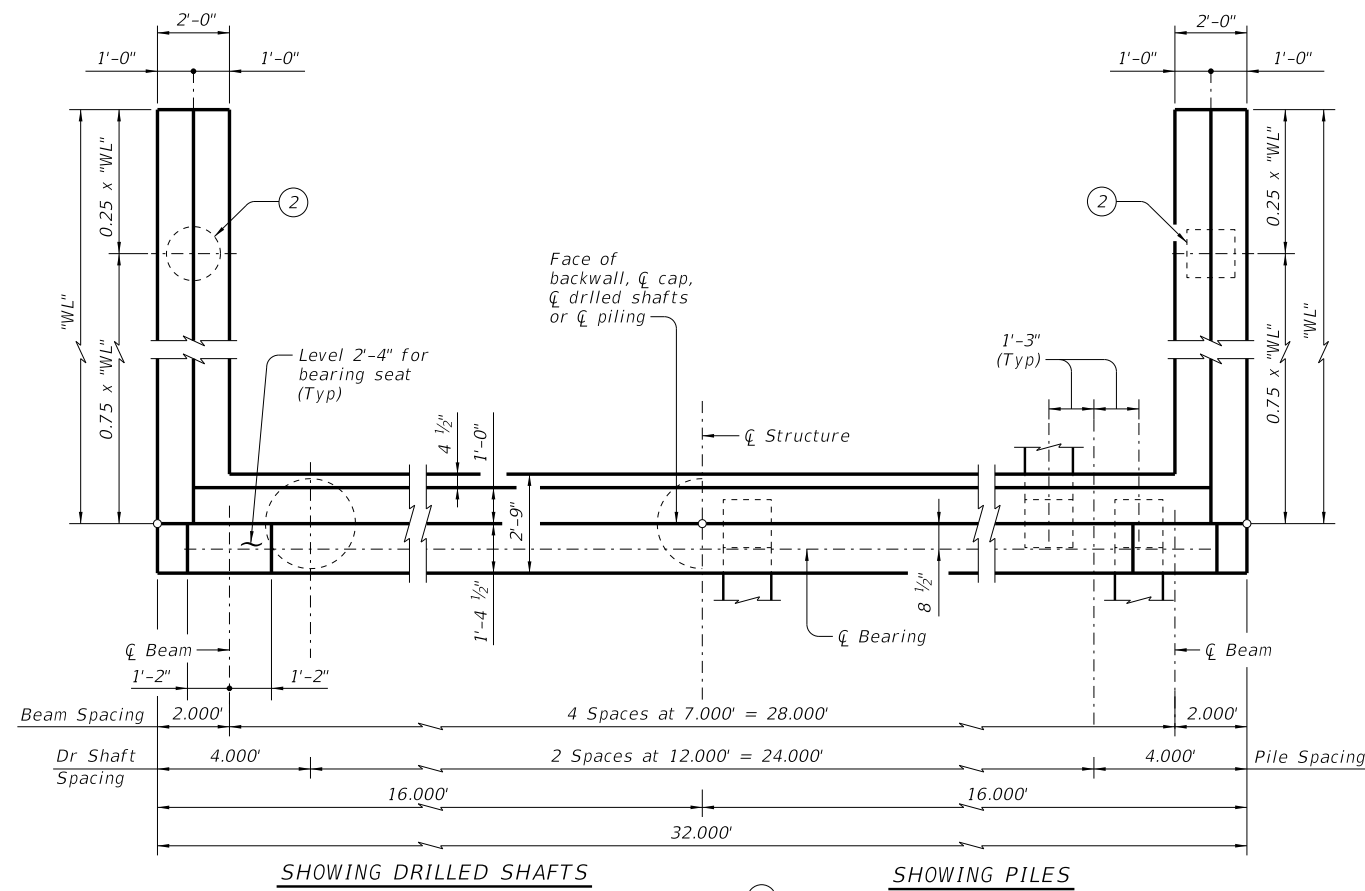
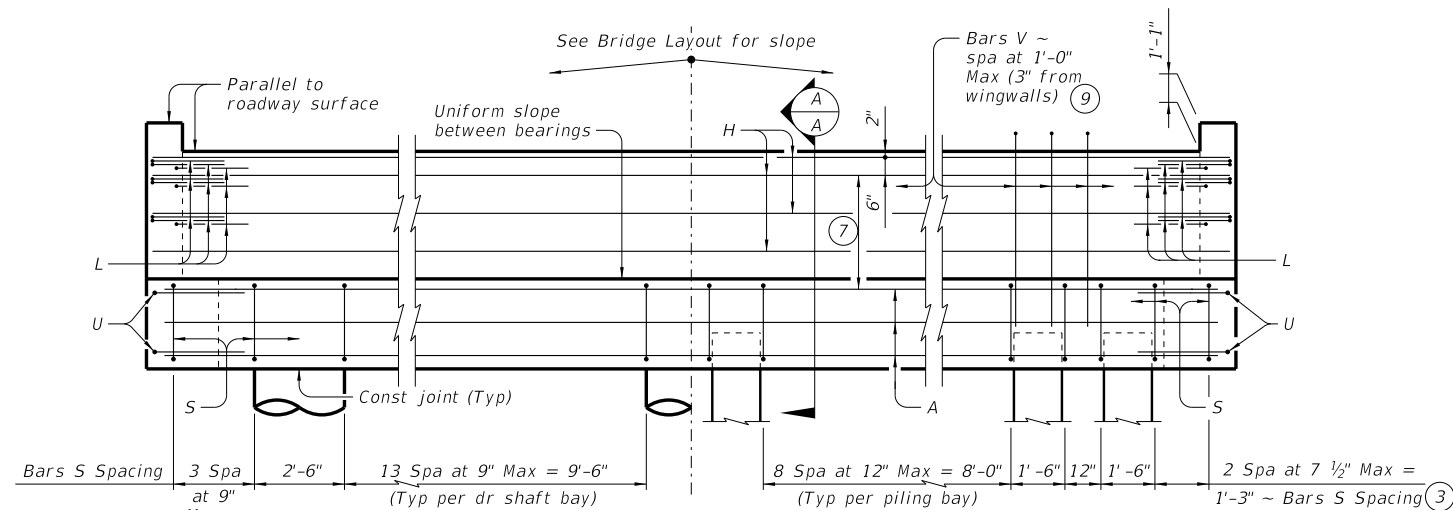


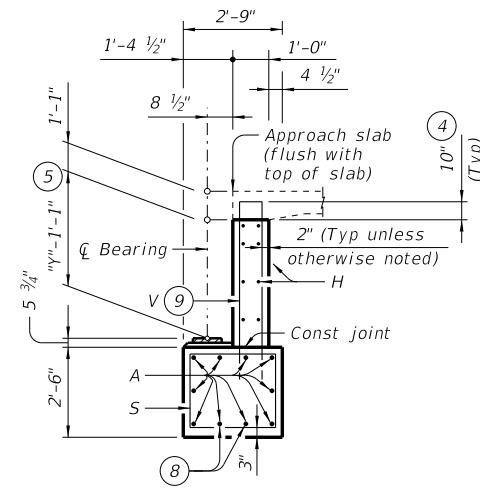
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PLAN 1

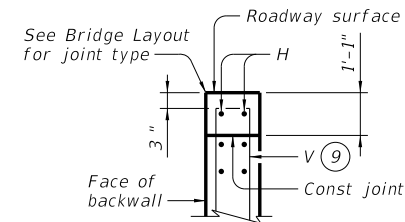


ELEVATION



SECTION A-A

(With approach slab) 6



BACKWALL DETAIL

(Without approach slab) 6

TABLE A			
Header Slope	Beam Type	Wingwall Type	Wingwall length "WL"
2:1	W18	Cantilevered	6.000'
	W21	Cantilevered	7.000'
	W24	Cantilevered	8.000'
	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	15.000'	

MATERIAL NOTES:

Provide Class C Concrete, $f'_c = 3,600$ psi.
Provide Class C (HPC) Concrete if shown elsewhere in the plans.
Provide Grade 60 reinforcing steel.

GENERAL NOTES:

- 1. Designed according to AASHTO LRFD Bridge Design Specifications. See Bridge Layout for beam type, header slope, and foundation type, size, and length. See Common Foundation Details (FD) standard sheet for all foundation details and notes. See Concrete Riprap (CRR) standard sheet or Stone Riprap (SRR) standard sheet for riprap attachment details, if applicable. See Standard Erection and Bracing Requirements (SBBR) standard sheet 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-30 only.
- 2. See Table A for variable dimensions based on header slope and beam type.
- 3. See Table A to determine if wingwall foundations are required.
- 4. For piling larger than 16", adjust Bars S spacing as required to avoid piling.
- 5. Increase as required to maintain 3" from finished grade.
- 6. See Steel Beam Standard Design (SBSD-30) standard for "Y" value.
- 7. See Bridge Layout to determine if approach slab is present.
- 8. Use 2 spaces at 12" Max for W18 through W24 beams and 3 spaces at 12" Max for W27 beams and larger.
- 9. With pile foundations, replace Bars A located at bottom centerline of cap with 2 ~ #11 x 8'-0" (per bay) placed between piling groups. Deduct 159 lbs total from reinforcing steel total.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out-to-out of bar.

- 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" from finished grade.
- 5. See Steel Beam Standard Design (SBSD-30) standard for "Y" value.
- 6. See Bridge Layout to determine if approach slab is present.
- 7. Use 2 spaces at 12" Max for W18 through W24 beams and 3 spaces at 12" Max for W27 beams and larger.
- 8. With pile foundations, replace Bars A located at bottom centerline of cap with 2 ~ #11 x 8'-0" (per bay) placed between piling groups. Deduct 159 lbs total from reinforcing steel total.
- 9. Field bend as needed to clear piles.

HL93 LOADING

SHEET 1 OF 3



**ABUTMENTS
STEEL BEAM SPANS
30' ROADWAY**

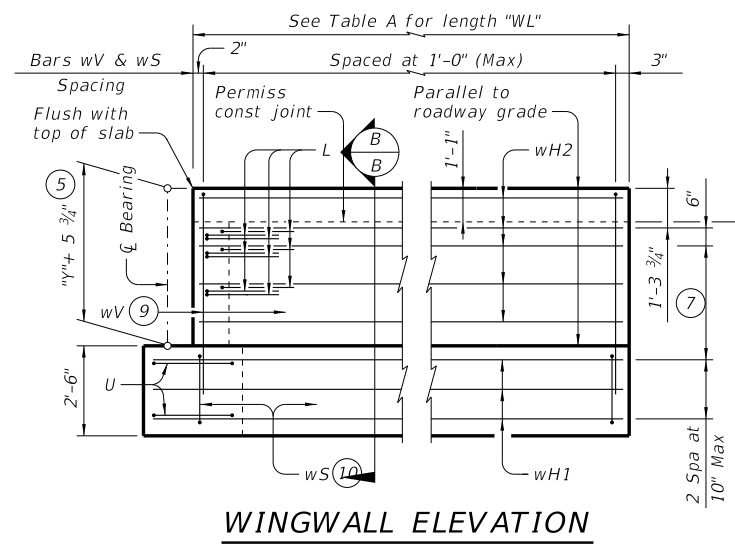
ASB-30

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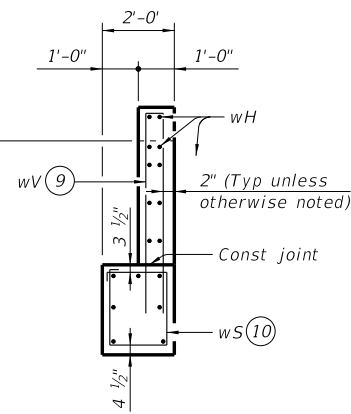
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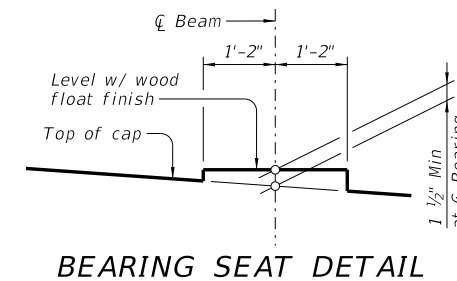
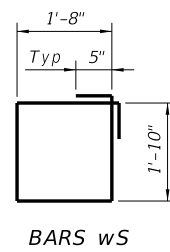
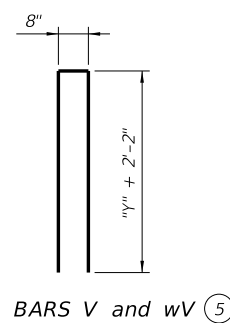
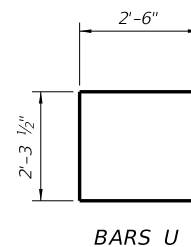
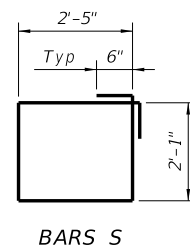
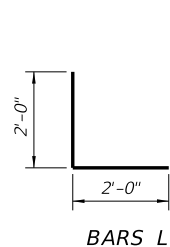
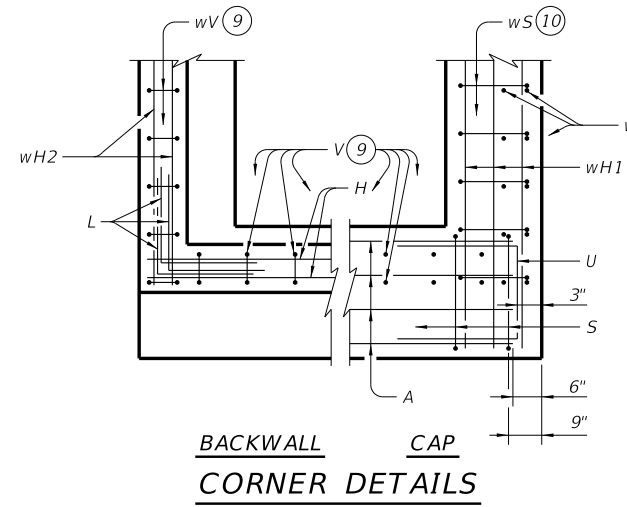
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WINGWALL ELEVATION



SECTION B-B



(Remove all loose material and clean bearing surface before placing bearing pad.)

TABLE OF FOUNDATION LOADS

Span Length	Shaft Load	Pile Load
Ft	Tons/Shaft	Tons/Pile
30	49	51
35	53	53
40	56	55
45	60	56
50	63	58
55	67	60
60	70	62
65	73	63
70	76	65
75	79	66
80	83	68
85	86	70
90	90	72
95	94	74
100	98	76
105	102	78
110	106	80
115	110	82
120	115	85

- 5 See Steel Beam Standard Design (SBSD-30) standard for "Y" value.
- 7 Use 2 spaces at 12" max for W18 through W24 beams and 3 spaces at 12" max for W27 beams and larger.
- 9 Field bend as needed to clear piles.
- 10 Adjust as required to avoid piling.



**ABUTMENTS
STEEL BEAM SPANS
30' ROADWAY**

ASB-30

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2:1 HEADER SLOPE

3:1 HEADER SLOPE

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W18 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	6	#6	31' - 8"	285
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	9' - 11"	321
wH1	14	#6	7' - 1"	149
wH2	16	#6	5' - 8"	136
wS	14	#4	7' - 10"	73
wV	14	#5	9' - 11"	145
Reinforcing Steel			Lb	3,283
Class C Concrete (Abut)			CY	13.3

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W21 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	6	#6	31' - 8"	285
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	10' - 7"	342
wH1	14	#6	8' - 1"	170
wH2	16	#6	6' - 8"	160
wS	16	#4	7' - 10"	84
wV	16	#5	10' - 7"	177
Reinforcing Steel			Lb	3,392
Class C Concrete (Abut)			CY	14.4

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W24 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	6	#6	31' - 8"	285
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	11' - 2"	361
wH1	14	#6	9' - 1"	191
wH2	16	#6	7' - 8"	184
wS	18	#4	7' - 10"	94
wV	18	#5	11' - 2"	210
Reinforcing Steel			Lb	3,499
Class C Concrete (Abut)			CY	15.6

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W18 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	6	#6	31' - 8"	285
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	9' - 11"	321
wH1	14	#6	10' - 1"	212
wH2	16	#6	8' - 8"	208
wS	20	#4	7' - 10"	105
wV	20	#5	9' - 11"	207
Reinforcing Steel			Lb	3,512
Class C Concrete (Abut)			CY	15.1

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W21 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	6	#6	31' - 8"	285
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	10' - 7"	342
wH1	14	#6	11' - 1"	233
wH2	16	#6	9' - 8"	232
wS	22	#4	7' - 10"	115
wV	22	#5	10' - 7"	243
Reinforcing Steel			Lb	3,624
Class C Concrete (Abut)			CY	16.3

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W24 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	6	#6	31' - 8"	285
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	11' - 2"	361
wH1	14	#6	12' - 1"	254
wH2	16	#6	10' - 8"	256
wS	24	#4	7' - 10"	126
wV	24	#5	11' - 2"	280
Reinforcing Steel			Lb	3,736
Class C Concrete (Abut)			CY	17.5

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W27 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	8	#6	31' - 8"	381
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	11' - 7"	375
wH1	14	#6	9' - 1"	191
wH2	20	#6	7' - 8"	230
wS	18	#4	7' - 10"	94
wV	18	#5	11' - 7"	217
Reinforcing Steel			Lb	3,662
Class C Concrete (Abut)			CY	15.9

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W30 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	8	#6	31' - 8"	381
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	12' - 0"	388
wH1	14	#6	9' - 1"	191
wH2	20	#6	7' - 8"	230
wS	18	#4	7' - 10"	94
wV	18	#5	12' - 0"	225
Reinforcing Steel			Lb	3,683
Class C Concrete (Abut)			CY	16.3

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W33 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	8	#6	31' - 8"	381
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	12' - 7"	407
wH1	14	#6	10' - 1"	212
wH2	20	#6	8' - 8"	260
wS	20	#4	7' - 10"	105
wV	20	#5	12' - 7"	262
Reinforcing Steel			Lb	3,801
Class C Concrete (Abut)			CY	17.5

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W27 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	8	#6	31' - 8"	381
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	11' - 7"	375
wH1	14	#6	13' - 1"	275
wH2	20	#6	11' - 8"	350
wS	26	#4	7' - 10"	136
wV	26	#5	11' - 7"	314
Reinforcing Steel			Lb	4,005
Class C Concrete (Abut)			CY	18.5

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W30 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	8	#6	31' - 8"	381
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	12' - 0"	388
wH1	14	#6	13' - 1"	275
wH2	20	#6	11' - 8"	350
wS	26	#4	7' - 10"	136
wV	26	#5	12' - 0"	325
Reinforcing Steel			Lb	4,029
Class C Concrete (Abut)			CY	18.9

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W33 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	8	#6	31' - 8"	381
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	12' - 7"	407
wH1	14	#6	14' - 1"	296
wH2	20	#6	12' - 8"	381
wS	28	#4	7' - 10"	147
wV	28	#5	12' - 7"	367
Reinforcing Steel			Lb	4,153
Class C Concrete (Abut)			CY	20.2

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W36 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	8	#6	31' - 8"	381
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	13' - 0"	420
wH1	14	#6	10' - 1"	212
wH2	20	#6	8' - 8"	260
wS	20	#4	7' - 10"	105
wV	20	#5	13' - 0"	271
Reinforcing Steel			Lb	3,823
Class C Concrete (Abut)			CY	17.8

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W40 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	8	#6	31' - 8"	381
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	13' - 5"	434
wH1	14	#6	11' - 1"	233
wH2	20	#6	9' - 8"	290
wS	22	#4	7' - 10"	115
wV	22	#5	13' - 5"	308
Reinforcing Steel			Lb	3,935
Class C Concrete (Abut)			CY	18.9

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W36 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	8	#6	31' - 8"	381
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	13' - 0"	420
wH1	14	#6	15' - 1"	317
wH2	20	#6	13' - 8"	411
wS	30	#4	7' - 10"	157
wV	30	#5	13' - 0"	407
Reinforcing Steel			Lb	4,267
Class C Concrete (Abut)			CY	21.3

TABLE OF ESTIMATED QUANTITIES ⁽¹⁾ (W40 BEAMS)				
Bar	No.	Size	Length	Weight
A (8)	10	#11	31' - 0"	1,647
H	8	#6	31' - 8"	381
L	18	#6	4' - 0"	108
S (12)	36	#5	10' - 0"	375
U	4	#6	7' - 3"	44
V	31	#5	13' - 5"	434
wH1	14	#6	16' - 1"	338
wH2	20	#6	14' - 8"	441
wS	32	#4	7' - 10"	167
wV	32	#5	13' - 5"	448
Reinforcing Steel			Lb	4,383
Class C Concrete (Abut)			CY	22.5

- (8) With pile foundations, replace Bars A located at bottom centerline of cap with 2 - #11 x 8'-0" (per bay) placed between piling groups. Deduct 159 lbs total from reinforcing steel total.
- (11) Quantities shown are for one abutment only (with approach slab). With no approach slab, add 1.2 CY Class C concrete and 96 Lb reinforcing steel for 2 additional H bars.
- (12) With pile foundation, subtract 6 Bars S and 63 Lbs from reinforcing steel total.

Texas Department of Transportation		Bridge Division Standard
<h3 style="margin: 0;">ABUTMENTS</h3> <h3 style="margin: 0;">STEEL BEAM SPANS</h3> <h3 style="margin: 0;">30' ROADWAY</h3>		
<h2 style="margin: 0;">ASB-30</h2>		
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