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DATE: FILE:

**TABLE OF FOUNDATION LOADS**

Span Length	Beam Types 5XB20 Thru 5XB40	
	Ft	Tons/Shaft
40	54	42
45	58	44
50	62	46
55	65	48
60	69	50
65	73	52
70	76	54
75	80	55
80	83	57
85	86	59
90	90	61
95	93	63
100	97	64
105	100	66

- 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 Span details for "Y" value.
- ⑥ See Bridge Layout to determine if Approach Slab is present.
- ⑦ Omit Dowels D at end of unit. Deduct 14 lbs from reinforcing steel total.
- ⑧ With pile foundations, move Bars A shown to clear piles.
- ⑨ Spacing based on beam type:  
XB20 ~ 2 Equal Spaces  
XB28 ~ 3 Equal Spaces  
XB34 ~ 3 Equal Spaces  
XB40 ~ 3 Equal Spaces
- ⑩ See Detail A on FD standard.
- ⑪ Right and left elevations and locations are provided elsewhere.
- ⑫ Measured along  $\bar{C}$  of Bearing.

**GENERAL NOTES:**

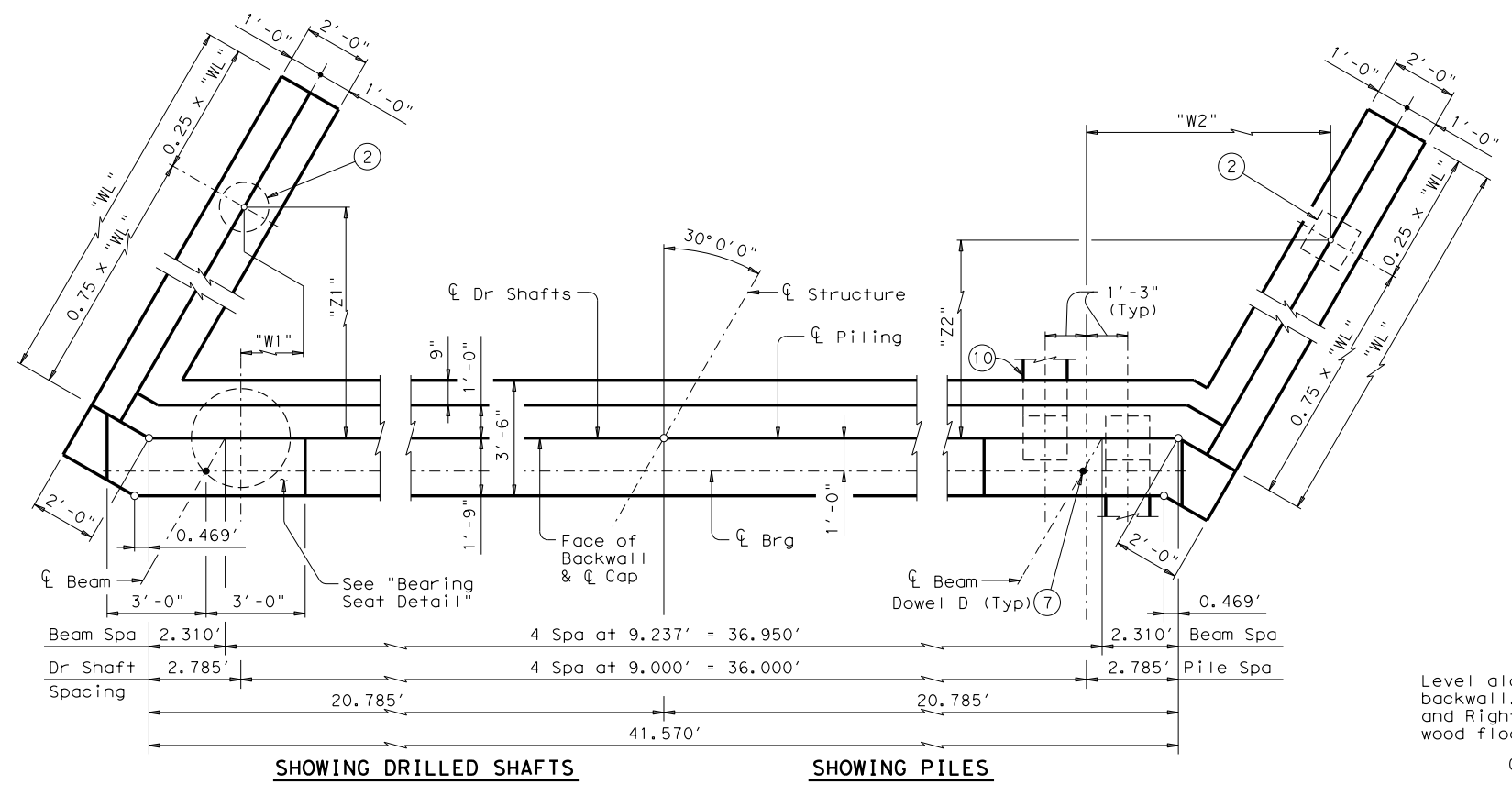
Designed according to AASHTO LRFD Specifications.  
Concrete strength  $f'c = 3,600$  psi.  
All cap and wall reinforcing must be Grade 60.  
Galvanize dowel bars D.  
See Bridge Layout for header slope and foundation type, size and length.  
See Foundation Detail Standard Sheet, FD, for all foundation details and notes.  
See Concrete Riprap Standard Sheet, CRR, for riprap attachment details, if applicable.  
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 SXB-38-30 only.

HL93 LOADING SHEET 1 OF 2

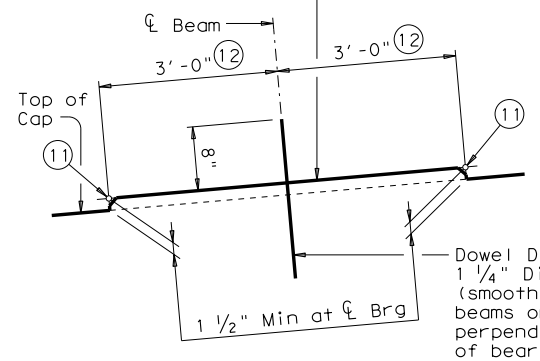


**ABUTMENTS**  
TYPE 5XB20 THRU 5XB40  
PRESTR CONC X-BEAMS  
38' ROADWAY 30° SKEW  
**AXB-38-30**

FILE: xbstde53.dgn	DN: JMH	CK: AM	DW: JTR	CK: JMH
©TxDOT June 2011	CONT	SECT	JOB	HIGHWAY
REVISIONS		DIST		SHEET NO.

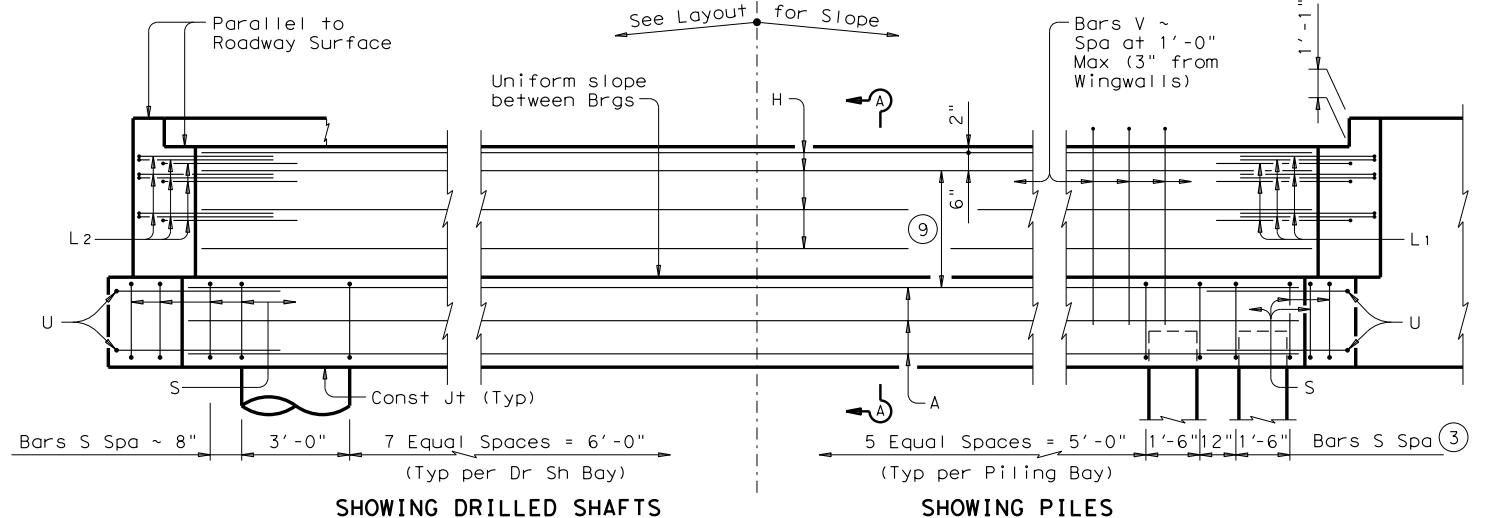


Level along a line perpendicular to backwall. Uniform slope between Left and Right Bearing Seat Elevations with wood float finish.

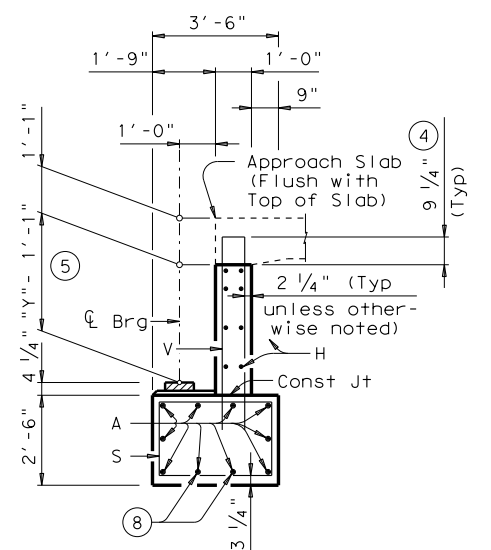


**BEARING SEAT DETAIL**

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

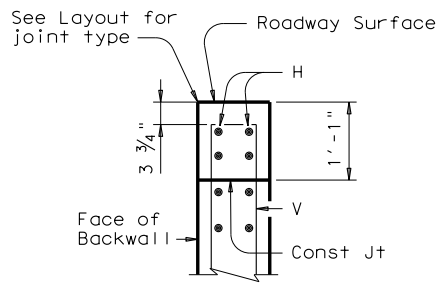


**ELEVATION**



**SECTION A-A**

(With Approach Slab)

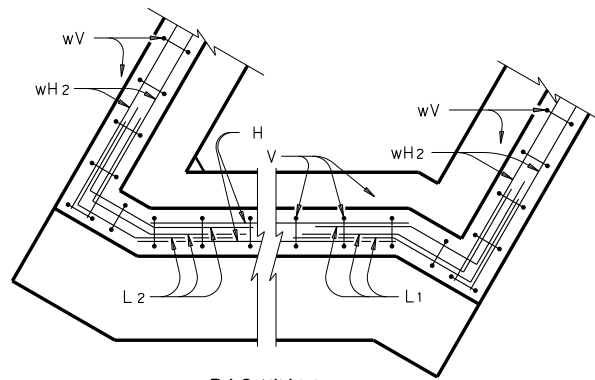


**BACKWALL DETAIL**

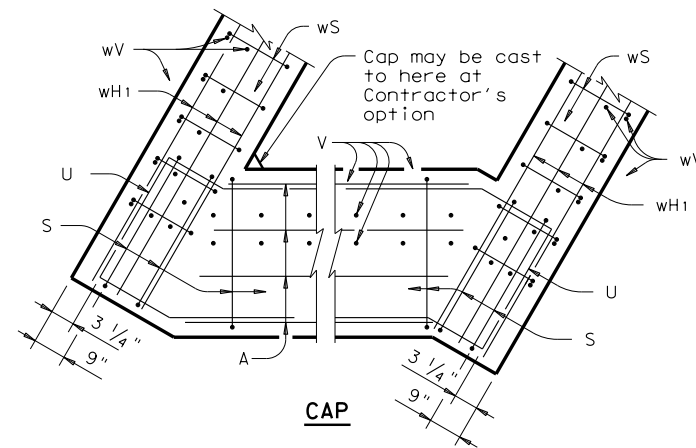
(Without Approach Slab)

TABLE A							
Header Slope	Beam Type	Wingwall Type	Wingwall Lgth "WL"	"W1"	"Z1"	"W2"	"Z2"
2:1	XB20	Cantilevered	9.000'	Not Applicable			
	XB28	Cantilevered	10.000'	Not Applicable			
	XB34	Cantilevered	11.000'	Not Applicable			
	XB40	Cantilevered	12.000'	Not Applicable			
3:1	XB20	Cantilevered	12.000'	Not Applicable			
	XB28	Founded	14.000'	1.599'	9.593'	8.901'	8.593'
	XB34	Founded	16.000'	2.349'	10.892'	9.651'	9.892'
	XB40	Founded	18.000'	3.099'	12.191'	10.401'	11.191'

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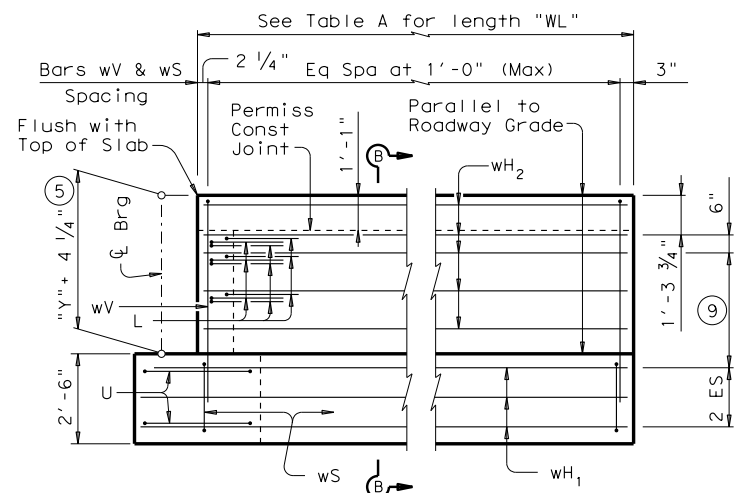


**BACKWALL**

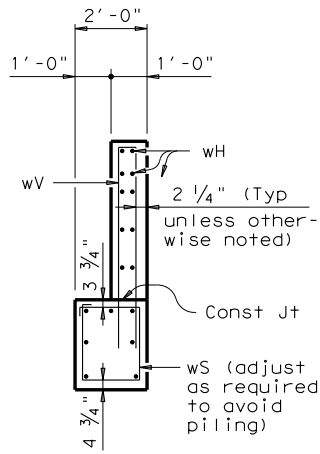


**CAP**

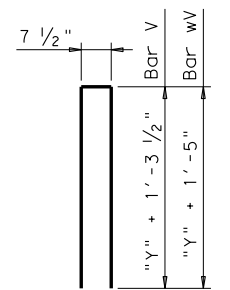
**CORNER DETAILS**



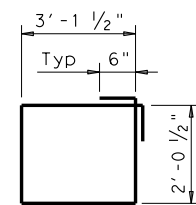
**WINGWALL ELEVATION**



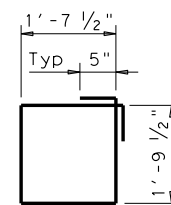
**SECTION B-B**



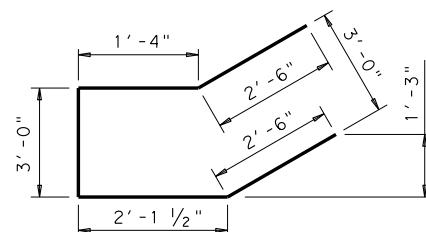
**BARS V & wV** ⑤



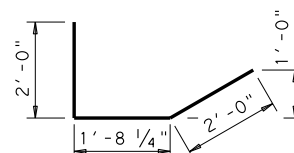
**BARS S**



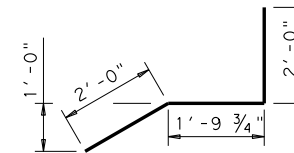
**BARS wS**



**BARS U**



**BARS L2**



**BARS L1**

**TABLES OF ESTIMATED QUANTITIES WITH 2:1 HEADER SLOPE ⑬**

TYPE 5XB20 BEAMS					TYPE 5XB28 BEAMS					TYPE 5XB34 BEAMS					TYPE 5XB40 BEAMS								
Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight				
A	10	#11	41'-7"	2,209	A	10	#11	41'-7"	2,209	A	10	#11	41'-7"	2,209	A	10	#11	41'-7"	2,209				
D ⑦	2	1 1/4"D	1'-8"	14	D ⑦	2	1 1/4"D	1'-8"	14	D ⑦	2	1 1/4"D	1'-8"	14	D ⑦	2	1 1/4"D	1'-8"	14				
H	6	#6	41'-7"	375	H	8	#6	41'-7"	500	H	8	#6	41'-7"	500	H	8	#6	41'-7"	500				
L1	9	#6	5'-10"	79	L1	9	#6	5'-10"	79	L1	9	#6	5'-10"	79	L1	9	#6	5'-10"	79				
L2	9	#6	5'-8"	77	L2	9	#6	5'-8"	77	L2	9	#6	5'-8"	77	L2	9	#6	5'-8"	77				
S	40	#5	11'-4"	473	S	40	#5	11'-4"	473	S	40	#5	11'-4"	473	S	40	#5	11'-4"	473				
U	4	#6	11'-6"	69	U	4	#6	11'-6"	69	U	4	#6	11'-6"	69	U	4	#6	11'-6"	69				
V	45	#5	8'-5"	395	V	45	#5	9'-9"	458	V	45	#5	10'-9"	505	V	45	#5	11'-9"	551				
wH1	14	#6	10'-5"	219	wH1	14	#6	11'-5"	240	wH1	14	#6	12'-5"	261	wH1	14	#6	13'-5"	282				
wH2	16	#6	8'-8"	208	wH2	20	#6	9'-8"	290	wH2	20	#6	10'-8"	320	wH2	20	#6	11'-8"	350				
wS	20	#4	7'-8"	102	wS	22	#4	7'-8"	113	wS	24	#4	7'-8"	123	wS	26	#4	7'-8"	133				
wV	20	#5	8'-8"	181	wV	22	#5	10'-0"	229	wV	24	#5	11'-0"	275	wV	26	#5	12'-0"	325				
Reinforcing Steel				Lb	4,401	Reinforcing Steel				Lb	4,751	Reinforcing Steel				Lb	4,905	Reinforcing Steel				Lb	5,062
Class "C" Concrete				CY	22.6	Class "C" Concrete				CY	24.8	Class "C" Concrete				CY	26.7	Class "C" Concrete				CY	28.6

**TABLES OF ESTIMATED QUANTITIES WITH 3:1 HEADER SLOPE ⑬**

TYPE 5XB20 BEAMS					TYPE 5XB28 BEAMS					TYPE 5XB34 BEAMS					TYPE 5XB40 BEAMS								
Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight	Bar	No.	Size	Length	Weight				
A	10	#11	41'-7"	2,209	A	10	#11	41'-7"	2,209	A	10	#11	41'-7"	2,209	A	10	#11	41'-7"	2,209				
D ⑦	2	1 1/4"D	1'-8"	14	D ⑦	2	1 1/4"D	1'-8"	14	D ⑦	2	1 1/4"D	1'-8"	14	D ⑦	2	1 1/4"D	1'-8"	14				
H	6	#6	41'-7"	375	H	8	#6	41'-7"	500	H	8	#6	41'-7"	500	H	8	#6	41'-7"	500				
L1	9	#6	5'-10"	79	L1	9	#6	5'-10"	79	L1	9	#6	5'-10"	79	L1	9	#6	5'-10"	79				
L2	9	#6	5'-8"	77	L2	9	#6	5'-8"	77	L2	9	#6	5'-8"	77	L2	9	#6	5'-8"	77				
S	40	#5	11'-4"	473	S	40	#5	11'-4"	473	S	40	#5	11'-4"	473	S	40	#5	11'-4"	473				
U	4	#6	11'-6"	69	U	4	#6	11'-6"	69	U	4	#6	11'-6"	69	U	4	#6	11'-6"	69				
V	45	#5	8'-5"	395	V	45	#5	9'-9"	458	V	45	#5	10'-9"	505	V	45	#5	11'-9"	551				
wH1	14	#6	13'-5"	282	wH1	14	#6	15'-5"	324	wH1	14	#6	17'-5"	366	wH1	14	#6	19'-5"	408				
wH2	16	#6	11'-8"	280	wH2	20	#6	13'-8"	411	wH2	20	#6	15'-8"	471	wH2	20	#6	17'-8"	531				
wS	26	#4	7'-8"	133	wS	30	#4	7'-8"	154	wS	34	#4	7'-8"	174	wS	38	#4	7'-8"	195				
wV	26	#5	8'-8"	235	wV	30	#5	10'-0"	313	wV	34	#5	11'-0"	390	wV	38	#5	12'-0"	476				
Reinforcing Steel				Lb	4,621	Reinforcing Steel				Lb	5,081	Reinforcing Steel				Lb	5,327	Reinforcing Steel				Lb	5,582
Class "C" Concrete				CY	24.4	Class "C" Concrete				CY	27.4	Class "C" Concrete				CY	30.0	Class "C" Concrete				CY	32.9

- ⑤ See Span details for "Y" value.
- ⑦ Omit Dowels D at end of unit. Deduct 14 lbs from reinforcing steel total.
- ⑨ Spacing based on beam type:  
 XB20 ~ 2 Equal Spaces  
 XB28 ~ 3 Equal Spaces  
 XB34 ~ 3 Equal Spaces  
 XB40 ~ 3 Equal Spaces
- ⑬ Quantities shown are for one Abutment only (with Approach Slab). With no Approach Slab, add 1.7 CY Class "C" Concrete and 250 Lbs Reinforcing Steel for 4 additional H bars.

**ABUTMENTS**  
 TYPE 5XB20 THRU 5XB40  
 PRESTR CONC X-BEAMS  
 38' ROADWAY 30° SKEW  
**AXB-38-30**

FILE: xbstde53.dgn	DN: JMH	CK: AM	DW: JTR	CK: JMH
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