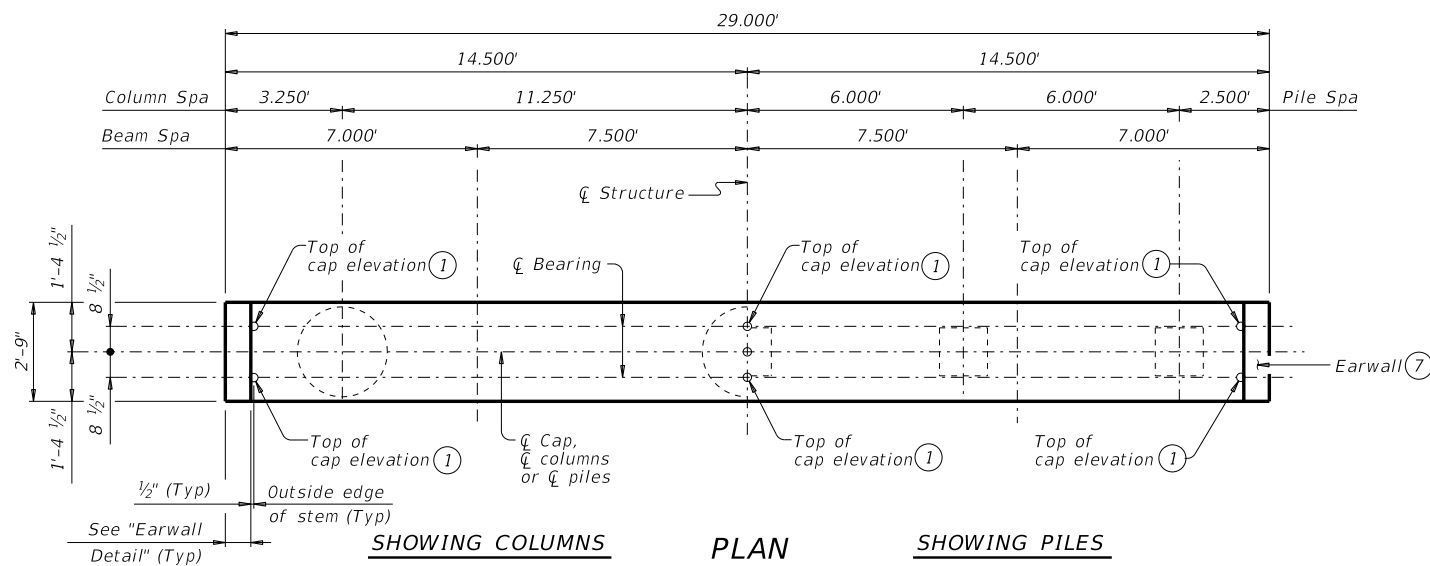
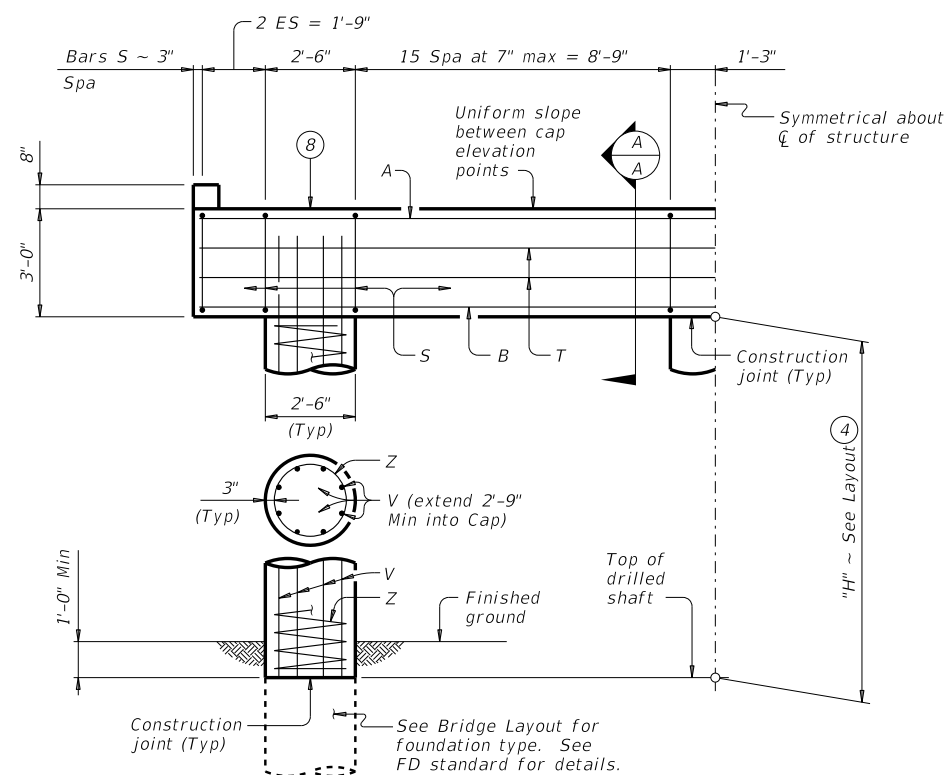


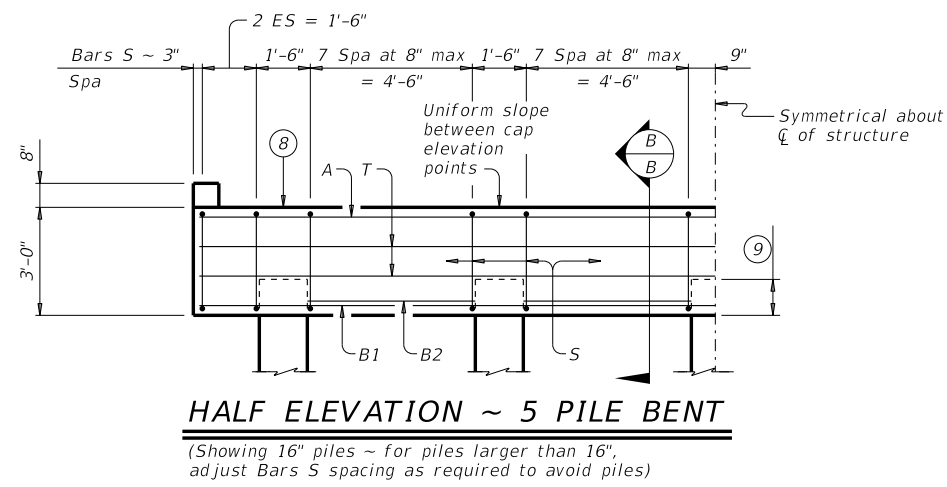
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SHOWING COLUMNS PLAN SHOWING PILES

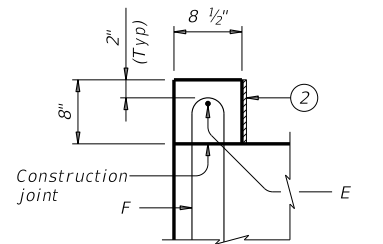


HALF ELEVATION ~ 3 COLUMN BENT

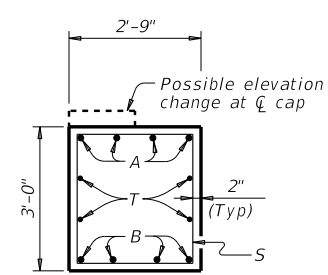


HALF ELEVATION ~ 5 PILE BENT

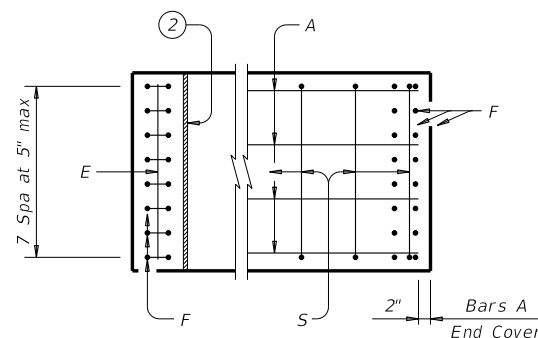
(Showing 16" piles ~ for piles larger than 16", adjust Bars S spacing as required to avoid piles)



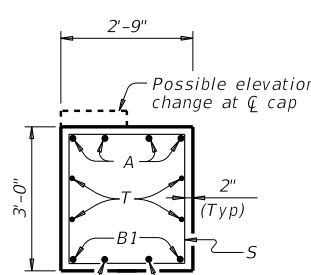
ELEVATION EARWALL DETAIL



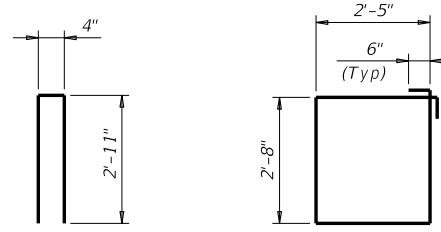
SECTION A-A



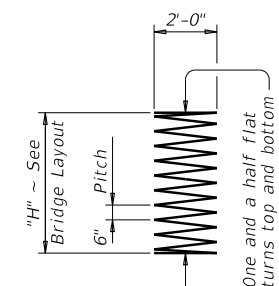
EARWALL CAP END DETAIL



SECTION B-B



BARS F BARS S



BARS Z

**TABLE OF MAXIMUM ALLOWABLE EXPOSED PILE HEIGHTS AND PILE LOADS**

Pile Type		Max Ht	Max Load
Concrete	Steel	Ft	Tons/Pile
16" Sq	HP14x73	16	75
18" Sq	HP14x117	20	90
20" Sq	HP18x135	24	110

**FOUNDATION LOADS**

Average Span Length	Drilled Shaft Loads	Vertical Pile Loads
Ft	Tons/DS	Tons/Pile
30	77	39
35	84	44
40	91	48
45	99	53
50	106	57
55	113	61
60	120	66

**TABLE OF ESTIMATED QUANTITIES FOR 3-COLUMN BENT**

Bar	No.	Size	Length	Weight
A	4	#11	28'-8"	609
B	4	#11	28'-8"	609
E	2	#5	2'-5"	5
F	16	#4	6'-2"	66
S	38	#5	11'-2"	443
T	4	#5	28'-8"	120
V	24	#9	32'-9"	2,672
Z	3	#3	391'-0"	441
Reinforcing Steel				Lb 4,965
Class "C" Concrete (Cap)				CY 9.0
Class "C" Concrete (Col)				CY 16.4

**TABLE OF ESTIMATED QUANTITIES FOR 5-PILE BENT**

Bar	No.	Size	Length	Weight
A	4	#11	28'-8"	609
B1	2	#11	28'-8"	305
B2	8	#11	4'-6"	191
E	2	#5	2'-5"	5
F	16	#4	6'-2"	66
S	38	#5	11'-2"	443
T	4	#5	28'-8"	120
Reinforcing Steel				Lb 1,739
Class "C" Concrete (Cap)				CY 9.0

- Top of cap elevations are based on section depths shown on Span Details.
- 1/2" preformed bituminous fiber material between beam stem and earwall. Bond to beam with an approved adhesive. Cast inside face of earwall with face of beam stem.
- Quantities shown are based on an "H" value of 30'. For each linear foot variation in "H" value, make the following adjustments:  
Bars V length ~ 1'-0"  
Bars Z length ~ 12'-7"  
Reinforcing Steel ~ 96 Lb  
Cl "C" Conc (Column) ~ 0.55 CY
- This standard may not be used for "H" heights exceeding 30' or exposed pile heights exceeding the values shown in the table. In areas of very soft soil or where scour is anticipated, allowable "H" heights or exposed pile heights must be evaluated by the Engineer prior to the use of this standard.
- Foundation Loads based on "H" = 30'.
- When HP14x117 steel piling is specified in the plans, the Contractor has the option of furnishing either HP14x117 or HP16x101 steel piling.
- Do not cast earwalls until beams are erected in their final position.
- Surface finish top of cap with a textured wood float. Level surface in the direction of the centerline of beams. Provide bearing surface clean and free of all loose material before placing bearing pads.
- See FD standard.

**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:**  
Designed according to AASHTO LFRD Bridge Design Specifications.  
Bent selected must be based on the average span length rounded up to the next 5-foot increment.  
For pile bents supporting unequal spans, the shorter span cannot be less than 80 percent of the longer span.  
See Bridge Layout for beam type and foundation type, size and length.  
See Common Foundation Details (FD) standard sheet for all foundation details and notes. This standard does not support the use of multi-pile footings as shown on standard FD. These bent details may be used with standard SDSB-28 only.  
Cover dimensions are clear dimensions, unless noted otherwise.  
Reinforcing bar dimensions shown are out-to-out of bar.

HL93 LOADING

Texas Department of Transportation  
Bridge Division Standard

**INTERIOR BENTS  
PRESTRESSED CONCRETE  
DECKED SLAB BEAMS  
28' ROADWAY**

**BDSB-28**

FILE: DSB-BDSB2800-20.dgn	DN: JLR	CK: SDC	DW: JTR	CK: TAR
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REVISIONS				
DIST	COUNTY		SHEET NO.	

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