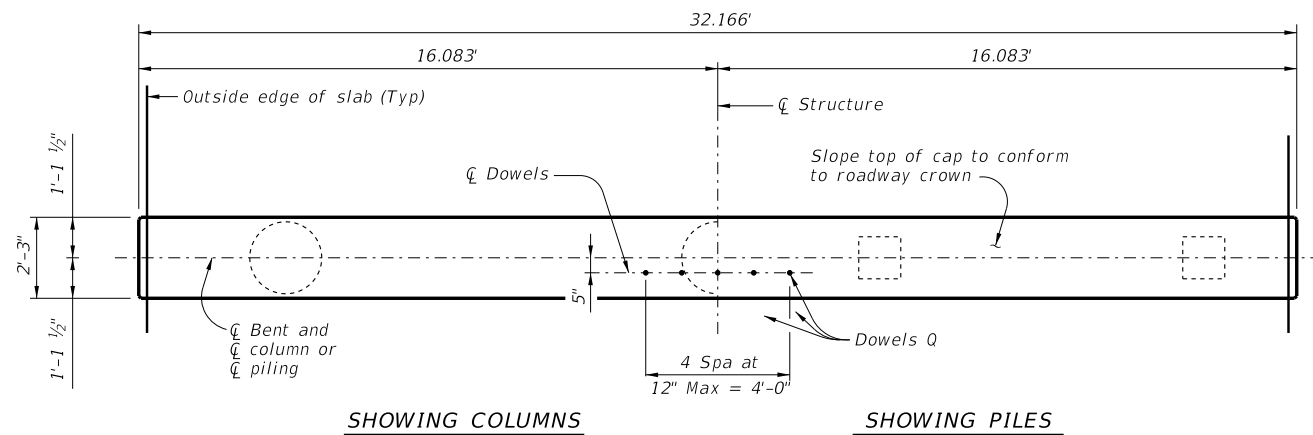
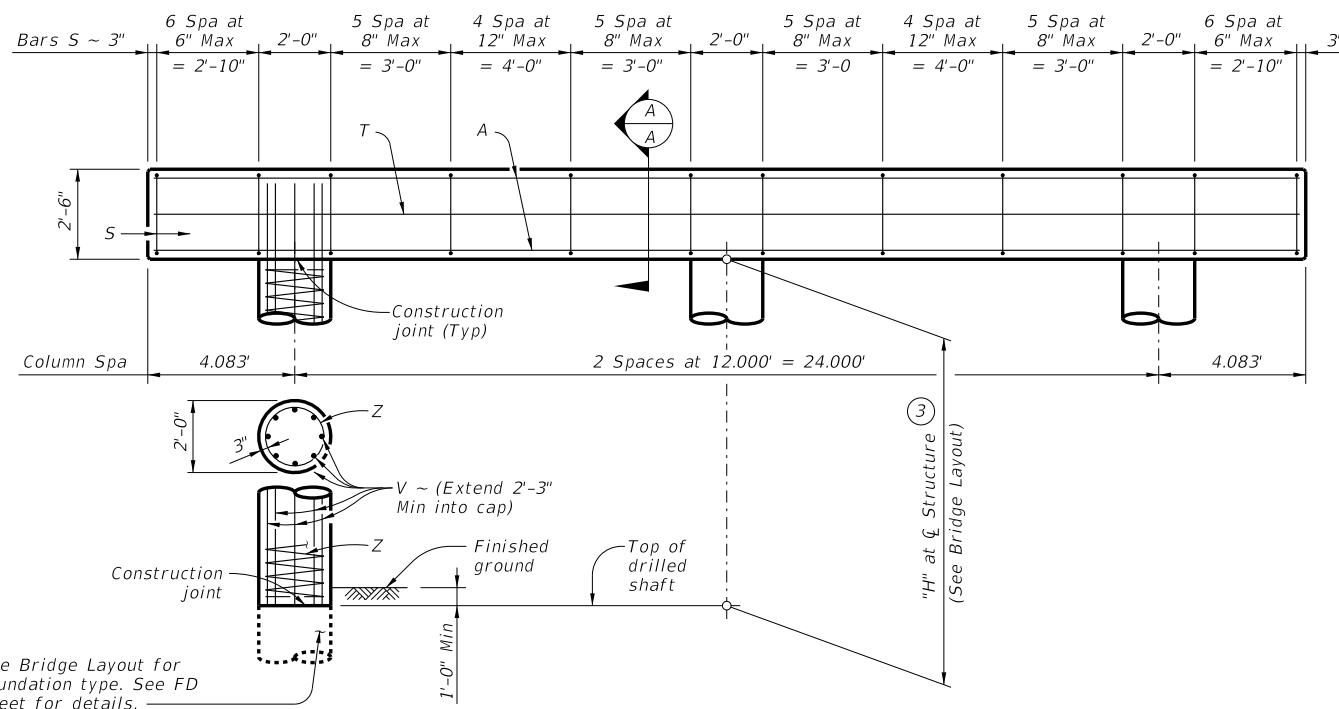


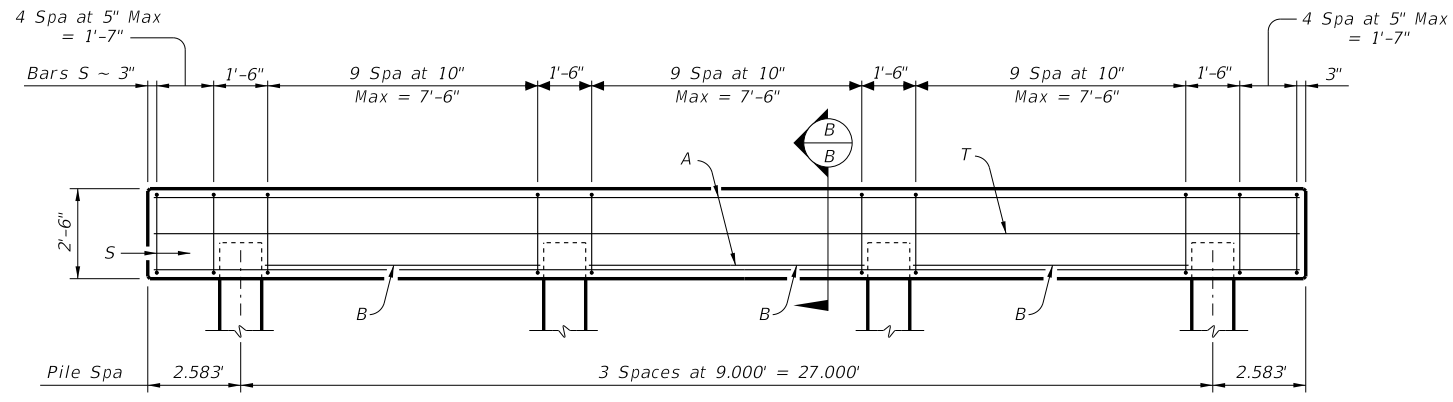
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act." No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



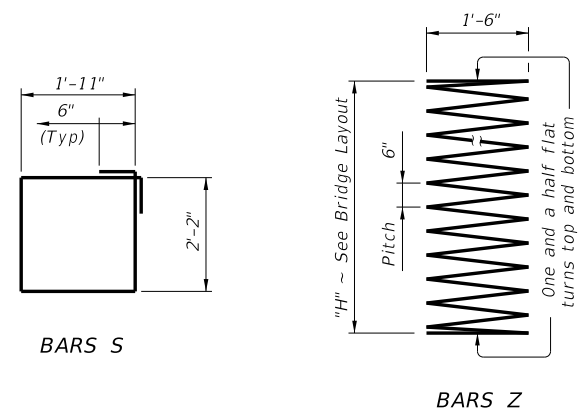
SHOWING COLUMNS  
SHOWING PILES  
**PLAN**



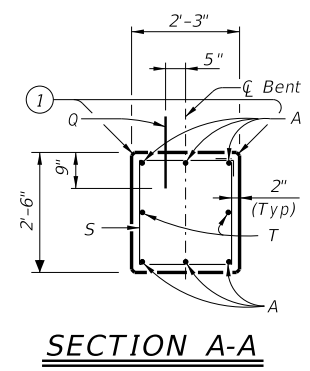
**ELEVATION ~ 3 COLUMN BENT**



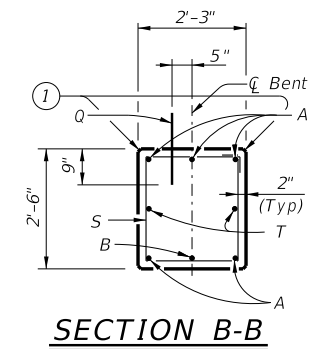
**ELEVATION ~ 4 PILE BENT**  
Note: For piling larger than 16", adjust Bars S as required to avoid piling.



BARS S  
BARS Z



**SECTION A-A**



**SECTION B-B**

**TABLE OF ESTIMATED QUANTITIES** ②

**3 COLUMN BENT**

Bar	No.	Size	Length	Weight
A	6	#11	31'-10"	1,015
Q	5	#6	1'-6"	11
S	44	#5	9'-2"	421
T	2	#5	31'-10"	66
V	24	#7	26'-3"	1,288
Z	3	#3	242'-2"	273
Reinforcing Steel			Lb	3,074
CI "C" Conc (Cap)			CY	6.7
CI "C" Conc (Column)			CY	8.4

**TABLE OF ESTIMATED QUANTITIES**

**4 PILE BENT**

Bar	No.	Size	Length	Weight
A	5	#11	31'-10"	846
B	3	#11	7'-6"	120
Q	5	#6	1'-6"	11
S	40	#5	9'-2"	382
T	2	#5	31'-10"	66
Reinforcing Steel			Lb	1,425
CI "C" Conc (Cap)			CY	6.7

- See CS-MD standard for preformed bituminous fiber material.
- Quantities shown are based on an "H" value of 24 feet. For each linear foot variation in "H" value, make the following adjustments:  
Bars V length, 1'-0"  
Bars Z length, 9'-6"  
Reinforcing Steel, 60 Lb  
Class "C" conc (column), 0.35 CY
- This standard may not be used for "H" heights exceeding 24 feet or exposed pile heights exceeding the values shown in the tables. 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.
- When HP14x117 steel piling is specified in the plans, the Contractor has the option of furnishing either HP14x117 or HP16x101 steel piling.

**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 LRFD Bridge Design Specifications. See Bridge Layout for foundation type, size and length. See Common Foundation Details (FD) standard sheet for foundation details and notes. These bent details do not support the use of multi-pile footings as shown on the FD standard. See Miscellaneous Details for C-I-P Concrete Slab Spans (CS-MD) standard sheet for details not shown. For usual soil and construction conditions, slab formwork may be supported from the sides of bent caps if one of the following is satisfied:  
1) For column bents, a maximum "H" height of 24'.  
2) For pile bents, a maximum exposed pile height of 20'.  
Calculated Foundation Loads: 70 Tons/drilled shaft (based on "H" = 24')  
50 Tons/pile  
These bent details may be used with standards CS-25-30, CS-50-30, CS-75-30, and CS-80-30 only.

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

**TABLE OF MAXIMUM ALLOWABLE EXPOSED PILE HEIGHTS** ③

Pile Type		Max Ht
Concrete	Steel	Ft
16" Sq	HP14x73	16
18" Sq	HP14x117 ④	20

HL93 LOADING

Texas Department of Transportation  
Bridge Division Standard

**INTERIOR BENTS FOR C-I-P CONC SLAB SPANS 30' ROADWAY**

**BCS-30**

FILE: CS-BCS3000-21.dgn	DN: HTP	CK: SDC	DW: LJC	CK: TAR
©TxDOT	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

DATE: FILE: