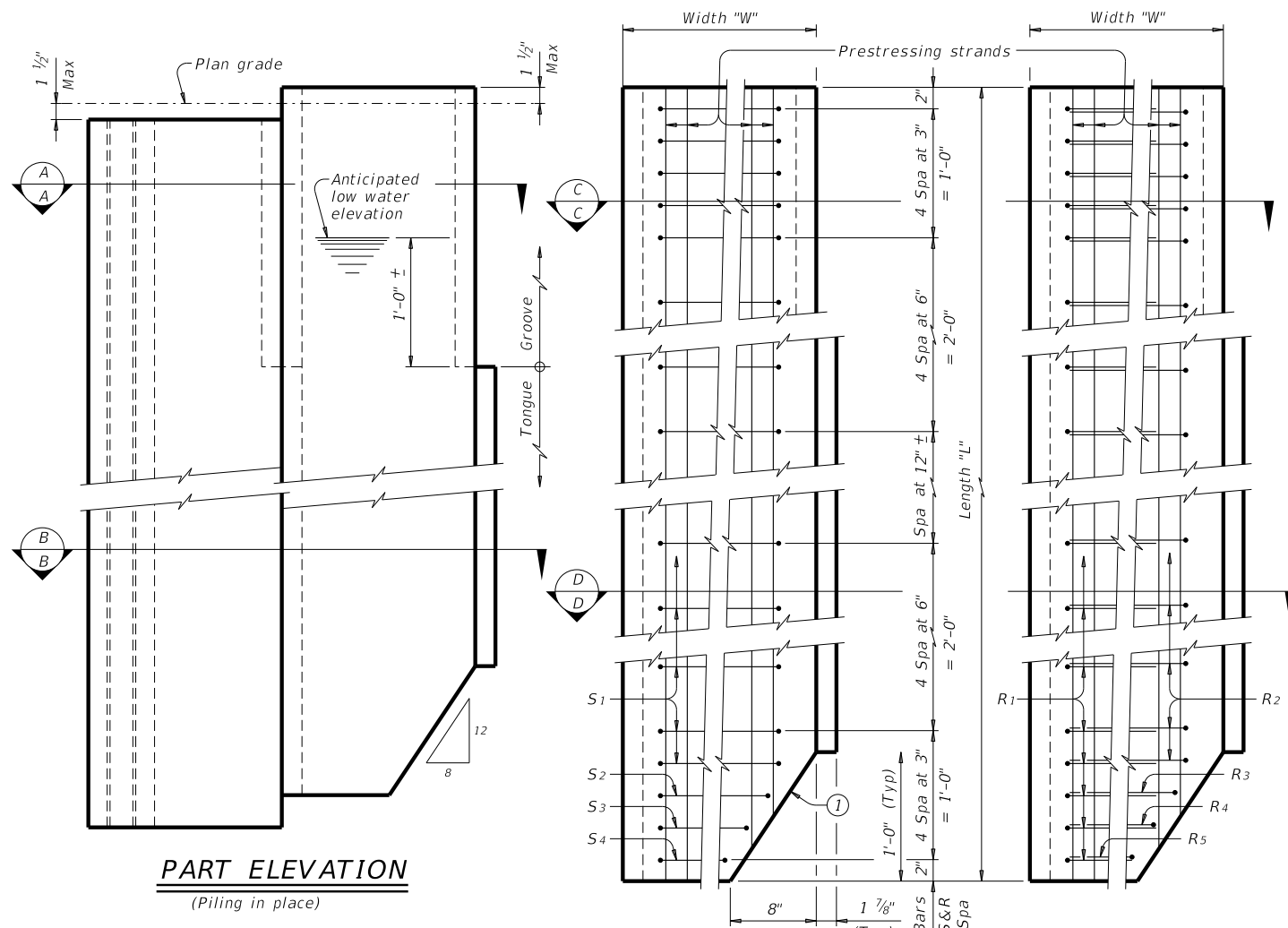
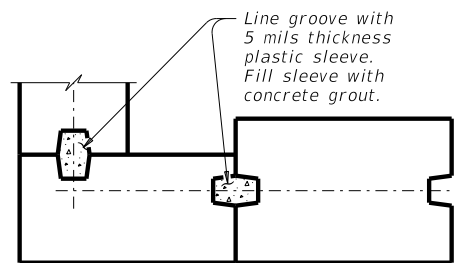


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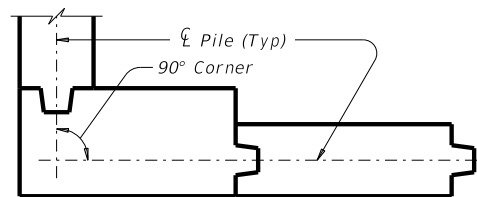
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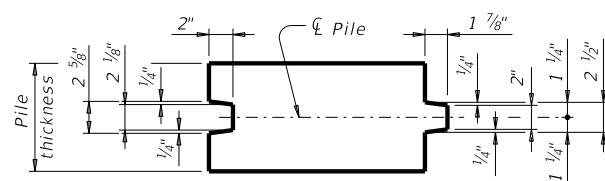
**PART ELEVATION**  
(Piling in place)



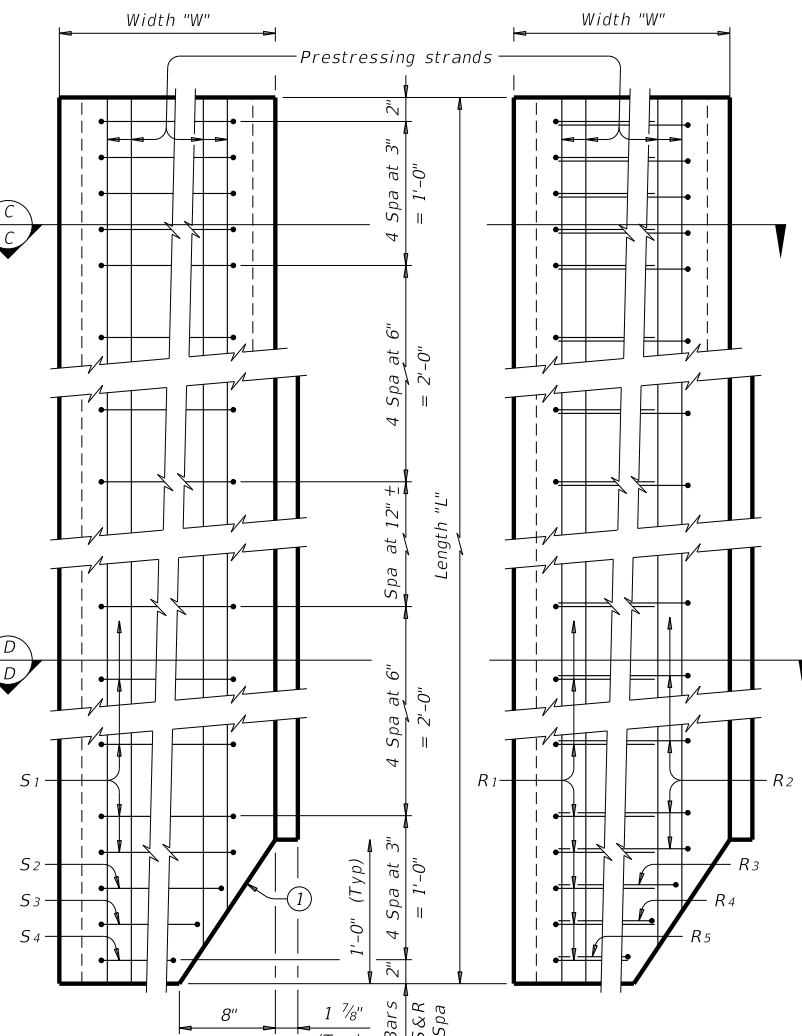
**SECTION A-A**



**SECTION B-B**



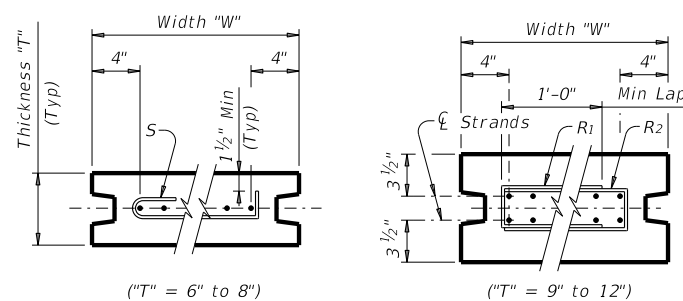
**TONGUE & GROOVE DETAILS**



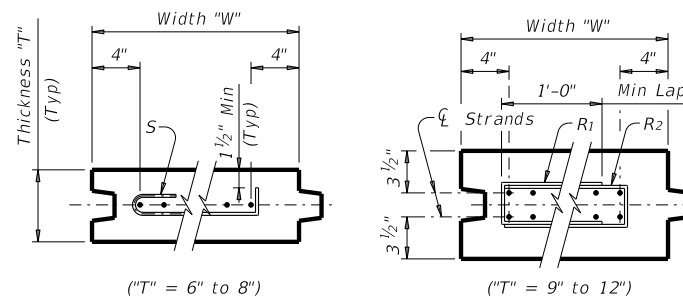
**6" THRU 8" THICK**      **9" THRU 12" THICK**

**TYPICAL PILE ELEVATIONS**

① Place bevel on side away from starter pile. Starter pile to be beveled on both sides.



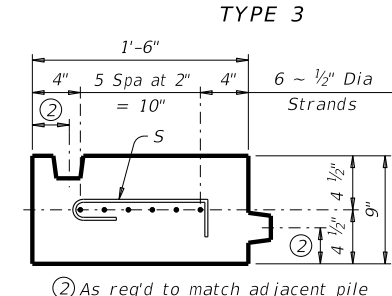
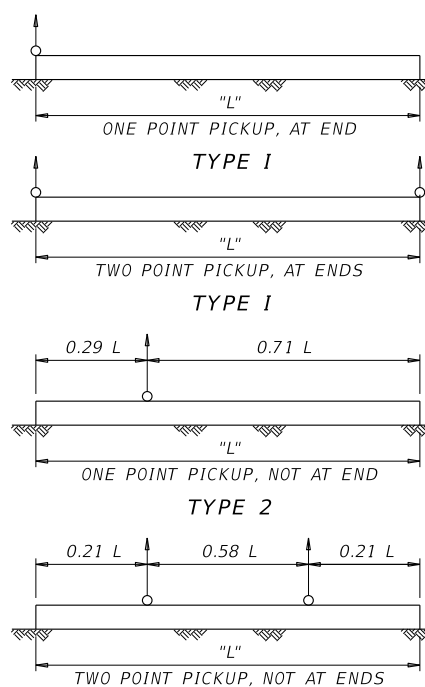
**SECTION C-C**



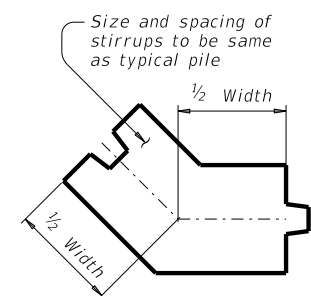
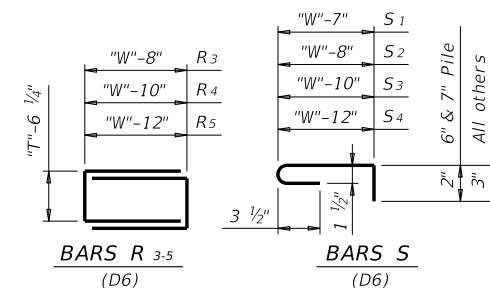
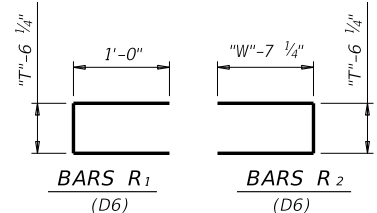
**SECTION D-D**

**TABLE OF MAXIMUM LENGTHS (BASED ON 50% IMPACT AND NO TENSION)**

Pile Thickness	TYPE 1 PICKUP	TYPE 2 PICKUP	TYPE 3 PICKUP
6"	19'- 3"	33'- 3"	46'- 7"
7"	20'- 10"	36'- 0"	50'- 4"
8"	22'- 3"	38'- 5"	53'- 10"
9"	23'- 8"	40'- 9"	57'- 1"
10"	24'- 11"	43'- 0"	60'- 3"
11"	26'- 2"	45'- 1"	63'- 2"
12"	27'- 4"	47'- 1"	65'- 11"



**CORNER PILE**



**45° CORNER PILE**

When corner piles other than 90 degrees are required, they may be precast or prestressed concrete. If prestressed concrete is used, coincide the C.G. of the prestressing force with C.G. of the section. Provide precast concrete pile equivalent in bending to the prestressed pile.

PILE PROPERTIES PER FOOT WIDTH OF PILE					STRAND SPACING REQ'D TO PRODUCE 875 psi COMP. AFTER LOSS	
Pile Thickness	Area	I	Weight	MR	3/8" Dia 270 <sup>K</sup>	1/2" Dia 270 <sup>K</sup>
In.	Sq In.	In. <sup>4</sup>	Lb/Ft	Ft Kips	Single Strand	
6"	72	216	75.0	6.75	2.500"	4.473"
7"	84	343	87.5	9.19	2.143"	3.834"
8"	96	512	100.0	12.00	1.875"	3.355"
					Pair of Strands	
9"	108	729	112.5	15.19	3.334"	5.964"
10"	120	1000	125.0	18.75	3.000"	5.368"
11"	132	1331	137.5	22.69	2.728"	4.880"
12"	144	1728	150.0	27.00	2.500"	4.474"

**SAMPLE PILE DATA**

DESIGN				QUANTITIES/SQ FT		
Pile Size ("T" x "W")	Area	Strands Req'd		Class "H" Concrete	Reinforcing Steel	S.R Strands
In.	Sq In.	No.	Type	CY	Lb	Lb
10 x 20	200	14	3/8" Dia 270 <sup>K</sup>	0.0308	.55	2.31
10 x 24	240	10	1/2" Dia 270 <sup>K</sup>	0.0308	.55	2.47
8 x 18	144	6	1/2" Dia 270 <sup>K</sup>	0.0247	.27	1.98
6 x 24	144	6	1/2" Dia 270 <sup>K</sup>	0.0185	.27	1.48

③ Based on 875 psi prestress after loss.

**GENERAL NOTES:**

The prestressed pile fabricator is required to prepare and submit for approval shop drawings for each structure. Such drawings must be sufficient in detail to enable correct fabrication, inspection and erection without reference to these plans.

For details that deviate from what is shown here within, provide signed and sealed shop drawings.

Suitable holes or anchorage devices, for tie backs or for supporting forms may be cast into the pile at the option of the Contractor, provided they are shown on the shop drawings and approved by the Engineer.

Provide stressing procedures such that no cracks will develop during manufacturing of the pile. In general, cracking will be anticipated whenever the calculated tensile stress at any stage exceeds 500 psi.

Use Class "H" or Class "H" (HPC) concrete as shown on the plans. Use sulfate resistant concrete when specified on the plans.

Release strength f'ci=4,000 psi. Minimum 28 day strength f'c=5,000 psi.

Provide thickness and length of pile as shown on the layout sheet. The width of pile may be selected by the Contractor and must be shown on the shop plans. Determine the prestressing required from the tables shown on this sheet.

Sheet pile section other than those shown will be given consideration providing the section meets the requirements for Resisting Moment (MR) listed for the pile thickness shown on the layout.

Provide deformed welded wire reinforcement (WWR) for stirrups meeting ASTM A1064.

Initial pretension for strands:  
 $3/8" \sim 270^K = 16.1^K$   
 $1/2" \sim 270^K = 28.9^K$

Assumed prestress loss = 20%

Recess lifting loops 1-inch minimum using exothermic cutting rods. Do not overheat or damage the surrounding concrete. Abrade the concrete surfaces of excavation and end of the lifting loop to remove all slag with a needle gun, steel brush, or other suitable means. Coat the inside of the recessed area, including the lifting loops, with 10 mils (minimum) of neat, Type VIII epoxy and patch the recess with epoxy mortar.

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

**Texas Department of Transportation** Bridge Division Standard

**PRESTRESSED CONCRETE SHEET PILING**

**PCSP**

FILE: MS-PCSP-19.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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	DIST	COUNTY	SHEET NO.	