# Index 22600 Series Square CFRP & SS Prestressed Concrete Piles (Rev. 11/16)

## **Design Criteria**

AASHTO LRFD Bridge Design Specifications; Structures Design Guidelines (SDG); Structures Detailing Manual (SDM); Fiber Reinforced Polymer Guidelines (FRPG)

### **Design Assumptions and Limitations**

Index 22600 is the lead standard for the Square CFRP & SS Prestressed Concrete Pile standard series which includes Indexes 22600 through 22630. Use this standard with Indexes 22601, 20602, 22612, 22614, 22618, 22624 and 22630.

Standard piles are designed to have 1000 psi uniform compression after prestress losses without any applied loads to offset tensile stresses that occur during typical driving.

The piles are designed to have 0.0 psi tension using a load factor of 1.5 times the pile self weight during pick-up, storage and transportation as shown in the "Table of Maximum Pile Pick-Up and Support Lengths" on the standard.

### **Plan Content Requirements**

In the Structures Plans:

Show and label the piles on the Foundation Layout, End Bent, Intermediate Bent, Pier, Footing, Typical Section and other sheets as required.

Complete the following "Data Table" in accordance with **SDG** 3.5 and **SDM** 11.4 and include it in the contract plans with the "Foundation Layout" sheets. Modify table and notes as required to accommodate the required number of piles, piers and/or bents, use of Test Piles and instrumentation. When not enough space is available on one plan sheet, continuations of the Data Table and/or separate pile cut-off elevation tables are acceptable. See Introduction I.3 for more information regarding use of Data Tables.

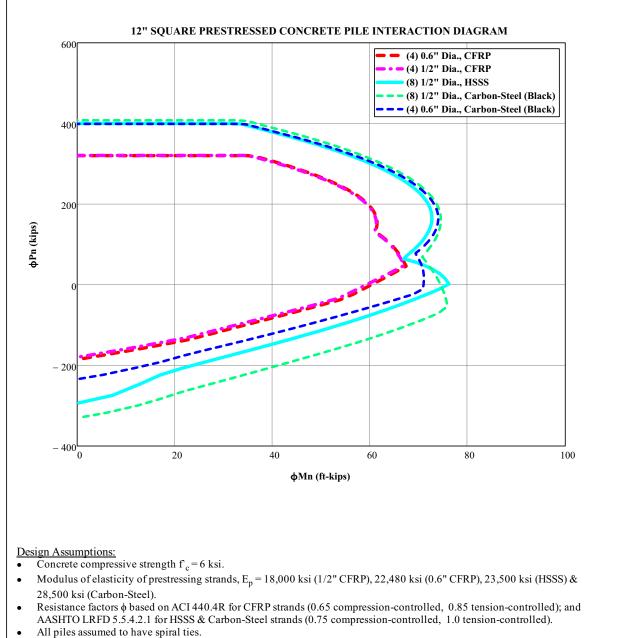
For projects without Test Piles change data table column heading "TEST PILE LENGTH (ft.)" to "PILE ORDER LENGTH (ft.)".

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PIER or BENT NUMBER	PILE SIZE (in.)	NOMINAL BEARING RESISTANCE (tons)	NOMINAL UPLIFT	MINIMUM TIP ELEVATION (ft.)	TEST PILE LENGTH (ft.)	REQUIRED JET ELEVATION (ft.)	REQUIRED PREFORM ELEVATION (ft.)	FACTORED DESIGN LOAD (tons)	FACTORED DESIGN UPLIFT LOAD (tons)	DOWN DRAG (tons)	TOTAL SCOUR RESISTANCE (tons)	NET SCOUR RESISTANCE (tons)	100-YEAR SCOUR ELEVATION (ft.)	COMPRESSION	DILLE 1	PILE 2				PILE 7
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															-					
		(Specify o FANCE – An es resis NCE – An estir	ear scour elev nly when desi timate of the tance provided mate of the ul nce provided	vation to res gn requires ultimate sta d by the scou timate static by the soil f or jetting el	at must be st pullout uplift capa ic side fri rable soil. side fricti rom the	of the pile city). ction		Contrac installa Minimur When a Iowerec until th differ	tor to verif tion activition Tip Elevat required je to the elev to the elev e pile drivir from those :	y locati es. ion is r ation a ig is co shown c	5 [Notes Date on of all utilit equired for la levation is sho nd continue to mpleted. If je in the table, it	ies prior to a teral stability wn, the jet sf operate at th eting or prefo et Engineer sf	all be is elevation prming elevat							
OTAL SCOUF	ESISTA	require to the EVATION - Est.	scour elevatio	n. on of scour	due to the	100 year		No jett The Co below t whicheu At each	ing will be ntractor sho he 100-year ver is deepe	allowed uld not scour r. driving	equired drivin I without the a anticipate bei, elevation or ri is to commenc	- approval of the ng allowed to equired jet el	jet piles evation,	t						

### Payment

Item number	Item description	Unit Measure
455-34-ABB	Prestressed Concrete Piling (CFRP or SS)	LF

## **Design Aids**



• Strand sizes and strand patterns used to create interaction curves correspond with those indicated in Index 22612 for CFRP & HSSS and Index 20612 for Carbon-Steel.

