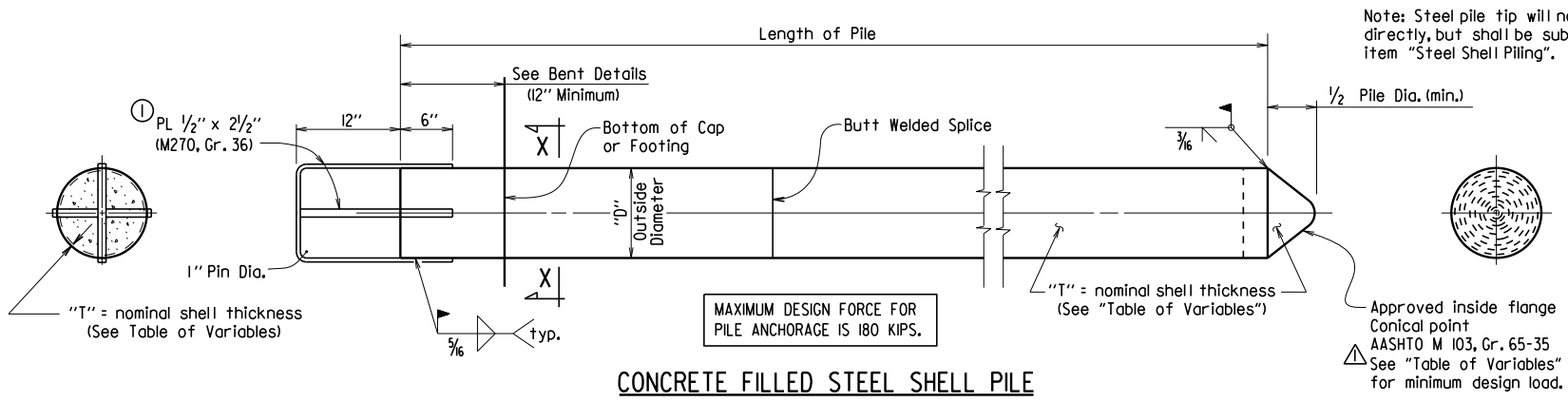


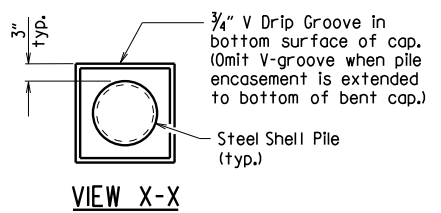
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
JOB NO.							STEEL SHELL PILES	55021



Note: Steel pile tip will not be paid for directly, but shall be subsidiary to the item "Steel Shell Piling".

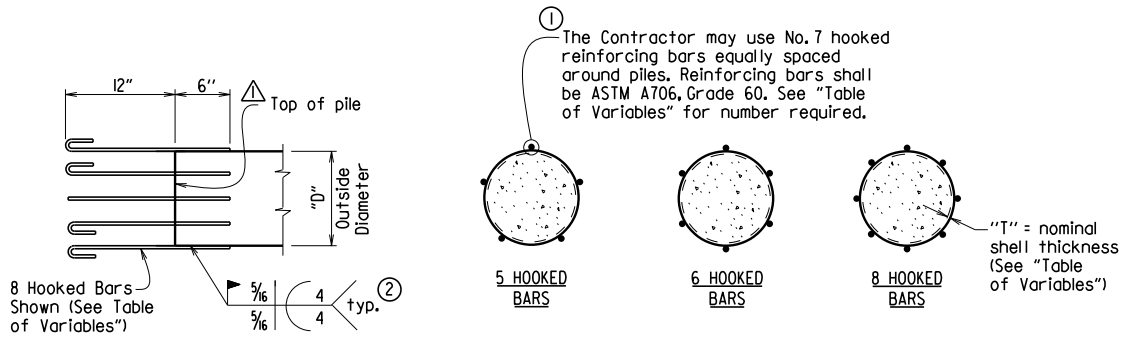
**CONCRETE FILLED STEEL SHELL PILE**

- ① Pile anchorage shall be placed to minimize interference with anchor bolts and reinforcing in cap or footing.
- ② Welding shall comply with ANSI/AWS D1.4 Structural Welding Code-Reinforcing Steel and applicable portions of ANSI/AWS D1.5 Bridge Welding Code.



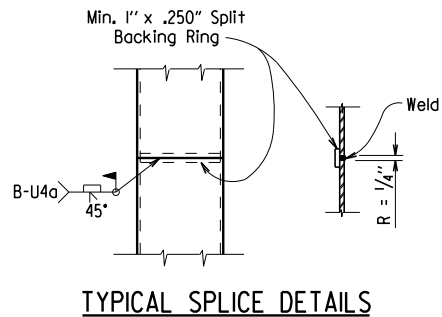
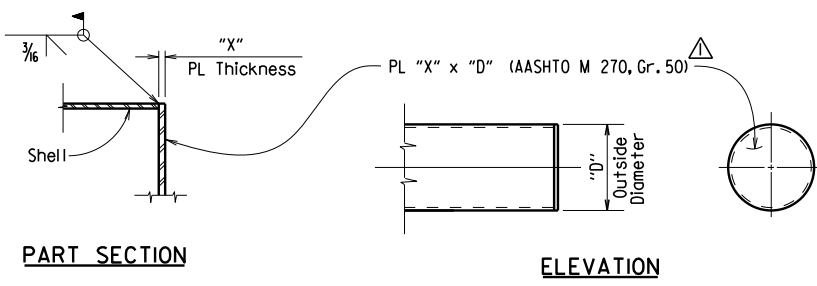
**GENERAL NOTES FOR CONCRETE FILLED STEEL SHELL PILES:**

Steel shells shall conform ASTM A252, Grade 3 (Fy = 45,000 psi).  
 Concrete used for filling of steel shell shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi, and shall be poured in the dry.  
 Steel shell piling that extends above the ground and is not protected by pile encasement shall be painted in accordance with Subsection 805.02.  
 See Bridge Layout for size and estimated length of steel shell piles and for driving information.  
 Concrete, structural steel, reinforcing steel (including welding), and painting shall not be paid for directly, but shall be considered subsidiary to the item "Steel Shell Piling".



**ALTERNATE PILE ANCHORAGE DETAIL**

Note: Hooked bars shall be oriented to provide the required concrete clearances shown in the plans.

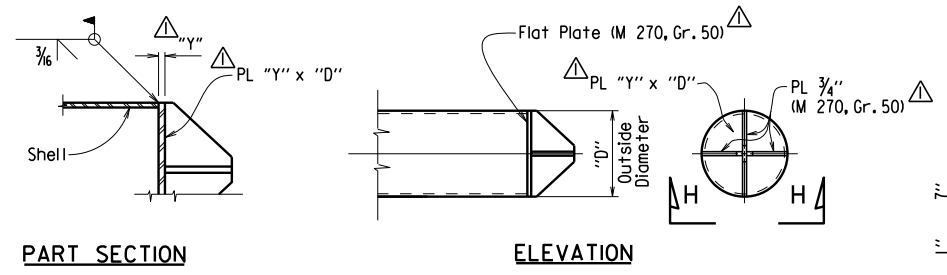


**TABLE OF VARIABLES**

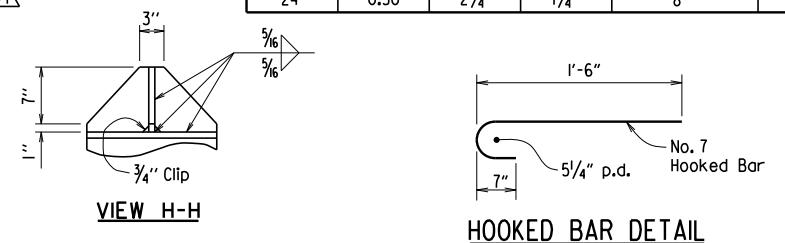
OUTSIDE DIAMETER "D"	NOMINAL SHELL THICKNESS "T"	PLATE THICKNESS "X"	PLATE THICKNESS "Y"	NO. OF HOOKED BARS FOR ALTERNATE PILE ANCHORAGE	MINIMUM CONICAL TIP DESIGN LOAD (KIPS)
14"	0.50"	2 1/4"	1 1/2"	5	859
16"	0.50"	2 1/4"	1 1/2"	5	986
18"	0.50"	2 1/2"	1 1/2"	6	1,114
20"	0.50"	2 1/2"	1 3/4"	6	1,241
24"	0.50"	2 3/4"	1 3/4"	8	1,495

**ALTERNATE FLAT TIP DETAIL**

Note: The alternate flat tip detail shall not be used on steel shell piling to be driven through embankments constructed with internal geosynthetic reinforcement.

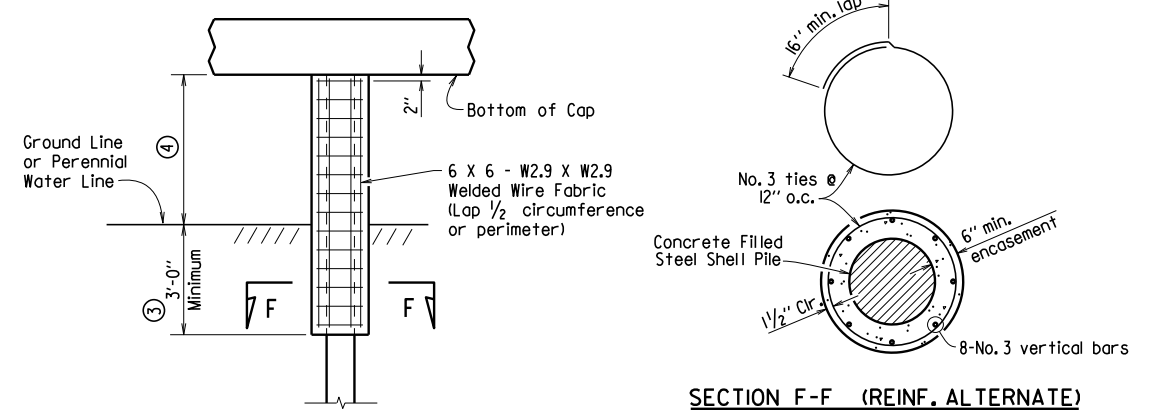


**ALTERNATE VANED TIP DETAIL**



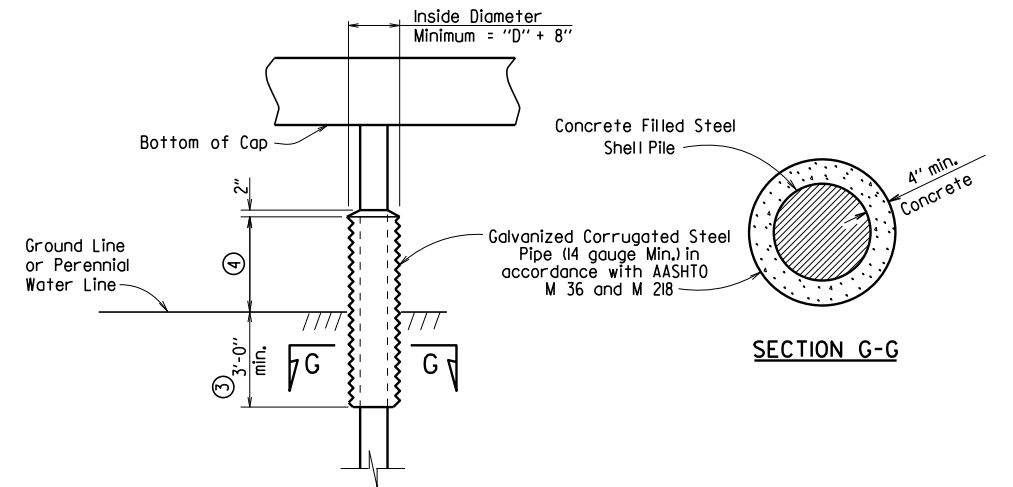
**GENERAL NOTES FOR PILE ENCASEMENTS:**

See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.  
 Concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.  
 Reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A.  
 Welded wire fabric shall conform to AASHTO M 55 or M 221.  
 Concrete, welded wire fabric or reinforcing steel, and galvanized pipe shall not be paid for directly, but shall be considered subsidiary to the item "Pile Encasement".



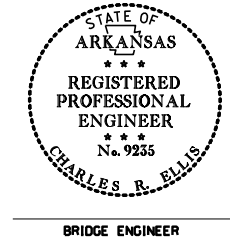
**PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES**

- ③ Unless otherwise noted on Bridge Layout.
- ④ See Bridge Layout for height of pile encasement (3'-0" Minimum).
- ⑤ Pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the detail for partial height encasement.



**ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES**

This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on March 24, 2016. This copy is not a signed and sealed document.



**STANDARD DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS**

ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.  
 DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55021.dgn  
 CHECKED BY: B.E.F. DATE: 2/27/2014 SCALE: NO SCALE  
 DESIGNED BY: STD. DATE: —  
 BRIDGE ENGINEER  
 DRAWING NO. 55021

Revised and added various details by KWy, Ck'd. by BEF, 3/24/16.