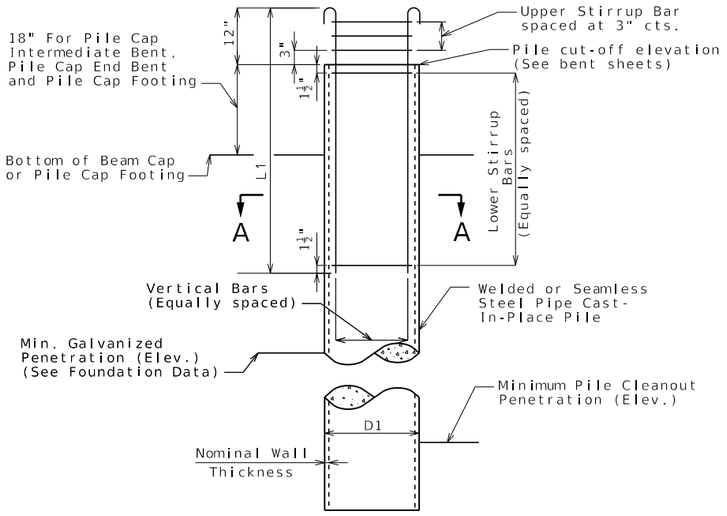
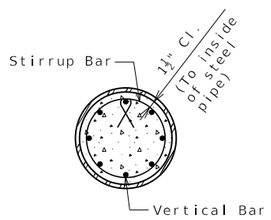
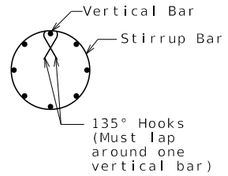


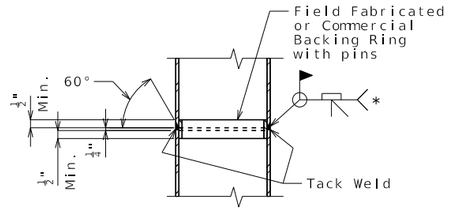
GALVANIZED OPEN ENDED CAST-IN-PLACE (OECIP) CONCRETE PILE WITHOUT PILE POINT REINFORCEMENT



SECTION A-A (5)



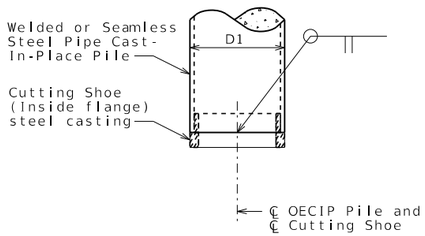
DETAIL OF SEISMIC STIRRUP BAR (5)



STEEL PIPE PILE SPLICE

* Galvanizing material shall be omitted or removed one inch clear of weld locations in accordance with Sec 702.

(1) GALVANIZED OPEN ENDED CAST-IN-PLACE (OECIP) CONCRETE PILE DATA				
Bent Number	1	2	3	4
D1, OECIP Pile (O.D.)	x			
Min. Nominal Wall Thickness	x			
Pile Point Reinforcement	x			
Min. Pile Cleanout Penetration (Elev.)	x			
Vertical Bars	x			
L1, Length of Vertical Bars	x			
Upper Stirrup Bars	x			
Lower Stirrup Bars	x			



MANUFACTURED OPEN ENDED CUTTING SHOE (INSIDE FLANGE)

Notes:

Welded or seamless steel shell (pipe) shall be ASTM A252 Modified Grade 3 (fy = 50,000 psi) with physical and chemical requirements that meet ASTM A572 Grade 50. Pipe certification and source material certification shall be required.

Open ended pile shall be augered out to the minimum pile cleanout penetration elevation and filled with Class B-1 concrete.

Concrete for cast-in-place pile shall be Class B-1.

Steel casting for open ended cutting shoe pile point reinforcement shall be ASTM A148 Grade 90-60.

The minimum wall thickness of any spot or local area of any type shall not be more than 12.5% under the specified nominal wall thickness.

The contractor shall determine the pile wall thickness required to avoid damage from all driving activities, but wall thickness shall not be less than the minimum specified. No additional payment will be made for furnishing a thicker pile wall then specified on the plans.

Splices of pipe for cast-in-place pipe pile shall be made watertight and to the full strength of the pipe above and below the splice to permit hard driving without damage. Pipe damaged during driving shall be replaced without cost to the state. Pipe sections used for splicing shall be at least 5 feet in length.

(4) At the contractor's option, the hooks of vertical bars embedded in the beam cap may be oriented inward or outward.

The hooks of vertical bars embedded in the beam cap should not be turned outward, away from the pile core.

The hooks of vertical bars embedded in the pile cap footing should be oriented outward for all seismic categories.

Reinforcing steel for cast-in-place pile is included in the Bill of Reinforcing Steel.

(3) All reinforcement for cast-in-place pile at end bents is included in the Estimated Quantities for Slab on _____. Reinforcement for cast-in-place pile at intermediate bents is included in the substructure quantity tables.

For Foundation Data table, see Sheet No. .

GALVANIZED OPEN ENDED CAST-IN-PLACE (OECIP) CONCRETE PILE

Detailed
Checked

Note: This drawing is not to scale. Follow dimensions. Sheet No. of

DATE PREPARED 7/18/2025
ROUTE STATE MO
DISTRICT SHEET NO. 000
COUNTY
JOB NO.
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

PILE02_OECIP.dgn 10:09:33 AM 7/18/2025

PILE02_OECIP Guidance

Standard Drawing Guidance (do not show on plans):

Do not use 20" and 24" diameter open ended cast-in-place (OECIP) concrete pile without approval of Structural Project Manager or Liaison.

(1)

Typical Data for OECIP Piles				
D1, OECIP Pile (O.D.) (by design)	14"	16"	20"	24"
Min. Nominal Wall Thickness (by design)	1/2" (See EPG 751.36.2.2.2 for commonly available nominal wall thicknesses.)			
Pile Point Reinforcement	"**" (add note below) or "None"			
Min. Pile Cleanout Penetration (Elev.)	300	302	282	295
Vertical Bars	6-#5-Vxxx	6-#6-Vxxx	8-#6-Vxxx	12-#6-Vxxx
L1, Length of Vertical Bars	5'-3"		7'-3"	
Upper Stirrup Bars (2)	3-#4-Pxxx			
Lower Stirrup Bars	5-#4-Pxxx		7-#4-Pxxx	

** Open ended cutting shoe

(2) For LFD seismic performance category (SPC) A and LRFD seismic design category (SDC) A, minimum number of vertical bars, size and length and seismic stirrup bar information is provided in Galvanized Open Ended Cast-In-Place (OECIP) Concrete Pile Data. Modify reinforcement size, length of vertical bars (L1), number of vertical bars, number of stirrup bars, and bar mark information as needed for specific project.

Min. L1 = 5'-3" for 14"Ø and 16"Ø OECIP &

7'-3" for 20"Ø and 24"Ø OECIP

Min. Lower Stirrup Bars = 5-#4 for 14"Ø and 16"Ø OECIP &

7-#4 for 20"Ø and 24"Ø OECIP

Min. Vertical Bars = 6-#5 for 14"Ø OECIP,

6-#6 for 16"Ø OECIP,

8-#6 for 20"Ø OECIP &

12-#6 for 24"Ø OECIP

For SPC B, C and D, modify reinforcement as needed to meet AASHTO 17th edition (LFD) and for SDC B, C and D, modify reinforcement as needed to meet AASHTO Guide Specification for LRFD Seismic Bridge Design (SGS).

(3) For non-integral end bents, revise wording as shown in EPG 751.50 (Note G5b10). For continuous concrete slab bridges, replace this note with standard note G5b11.

(4) Use appropriate note based on seismic category (See EPG 751.50, Notes G5b7a & G5b7b)

(5) These details of bar array 6, 8 and 12 count, can be used as needed in sheet details "Section A-A" & "DETAIL OF SEISMIC STIRRUP BAR" by using centroid as the handle.