	<h2 style="margin: 0;">CORROSION RESISTANT GROUND RODS AND GROUND ROD CLAMPS</h2>	<h2 style="margin: 0;">013109</h2>
Asset Type: Electric Distribution Issued by: Dan Mulkey (DHM3) <i>Daniel H. Mulkey</i>	Function: Design and Construction Date: 06-29-12	
Rev. #06: This document replaces PG&E Document 013109, Rev. #05. For a description of the changes, see Page 3.		

This document is also included in the following manual:

- [Electric and Gas Service Requirements Manual](#) (Greenbook)

Purpose and Scope

This document describes corrosion resistant ground rods and ground rod clamps.

References	Location	Document
Methods of Grounding Steel Transmission Poles and Towers	TIL	012566
Method of Grounding Fences and Wire Trellises	TIL	020607
Installation of Grounds on Wood Pole Transmission and Distribution Lines	OH: Transformers	021904
Ground Resistance and Resistivity Measurements	ELS	053241

Conventional Ground Rods

Notes

1. Ground rods shall meet the requirements of ANSI Spec. C33.8 (UL 467).
2. Welded-type connections may be used when welding equipment is available on the job.

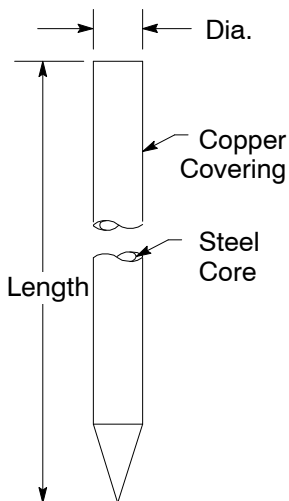


Figure 1
Ground Rod

Table 1 Conventional Ground Rods

Dimensions		Minimum Copper Jacket Thickness (inches)	Code	Application	Mfr. ¹	Catalog Number
Dia.	Length					
5/8"	8'0"	0.010	187013	Normal Grounds for Pad-Mount and Pole Grounds	Nehring	NCC 588
					Galvan	6258
					Calpico	CP588
					Eritech	615880
3/4"	12'0"	0.010	010098	For Substation Grounds or Ground Rods Larger Than 8' 0" and All Subsurface Primary Enclosures	Eritech	613412
					Galvan	7512
					Nehring	NCC 3410

¹ Ground rods are to be furnished with the length and manufacturer's identification permanently marked on each rod.

Ground Rod Clamps

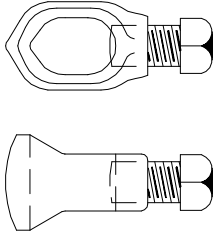


Figure 2
Standard Clamp

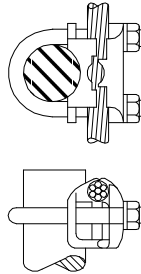
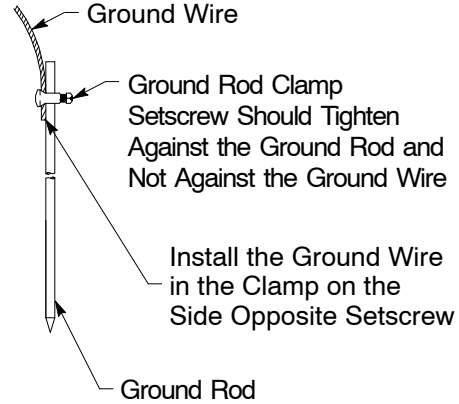


Figure 3
Clamp for Large Wire



Detail A
Installation of Ground Rod

Table 2 Utility-Grade Ground Rod Clamps ¹

Refer to	Ground Rod Diameter	Ground Wire Size – Copper	Code	Manufacturer	Catalog Number
Figure 2	5/8"	6 to 1/0	187012	Hubbell/Anderson	GC103-01
				Dossert	GN-62
				Eritech	HDC58H
				Eritech	SP58
Figure 2	5/8" or 3/4"	2/0 to 4/0 With 5/8" Diameter Rod and 6 to 1/0 With 3/4" Diameter Rod	187017	Hubbell/Anderson	GC103-02
				Dossert	GN-75
	3/4"	4/0 and 250 kcmil	187024	Galvan	JAB34HH
				Hubbell/Anderson	GC103-03
Figure 3	5/8" or 3/4"	300 to 500 kcmil	187020	Dossert	GNS-75
				Hubbell/Anderson	GC-111-3D
				Burndy	GAR6434
				Royal	2022(DQ)

¹ The setscrew and clamp are to withstand approximately 35-40 foot-lbs. of torque on the setscrew head without cracking or breaking.

Corrosion Resistant Ground Rods and Ground Rod Clamps

Sectional Ground Rods

Notes

1. Remove the driving head and upper coupling from the ground rod to permit installing a ground rod clamp, (see Table 2 on Page 2), when the ground rod has been driven to its final depth.
2. After driving a second sectional rod, check the rod with a wrench to ensure that the bottom of the second rod is contacting the top of first rod in the threaded coupling. Repeat this check on each additional rod used.

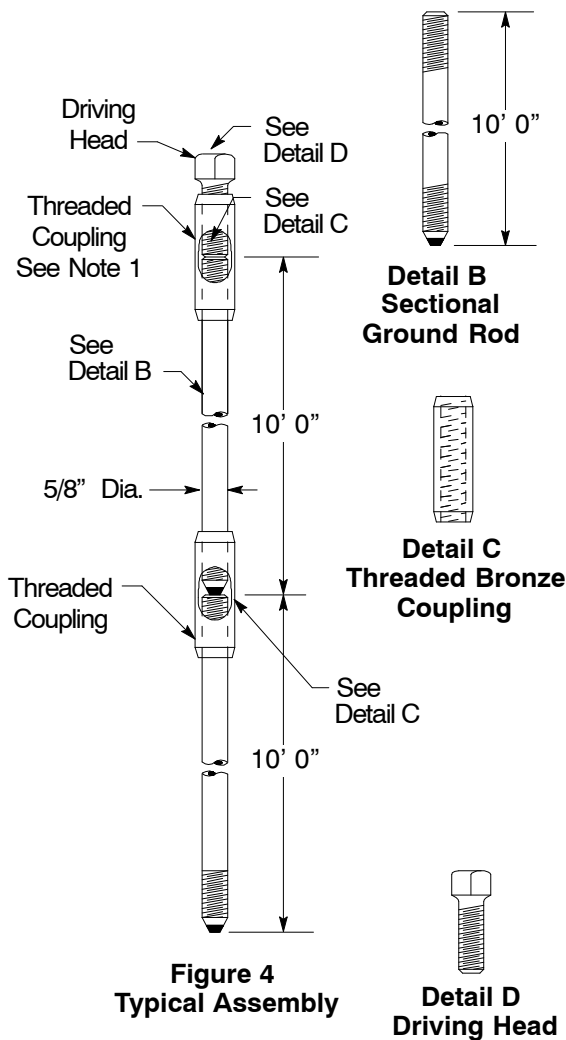


Figure 4
Typical Assembly

Table 3 Sectional-Type Ground Rods

Dimensions		Code	Application	Manufacturer	Catalog Number
Dia.	Length				
5/8"	10'0"	187021	For Deep-Driven Ground Rods (see Document 053241)	Calpico	S5810T
				Eritech	635800
				Galvan	6260S

Table 4 Threaded Bronze Coupling for 5/8" Diameter Sectional-Type Ground Rods

Threaded Coupling Size	Code	Application	Mfr.	Catalog Number
5/8"	187022	For Connecting Ground Rods (see Table 3)	Calpico	C158
			Eritech	CR-58
			Galvan	60-C

Table 5 Driving Head for 5/8" Diameter Sectional-Type Ground Rods

Driving Head Size	Code	Application	Mfr.	Catalog Number
5/8"	187023	For Driving Ground Rods (see Table 3)	Calpico	D358
			Eritech	DS58
			Galvan	60-DS

Revision Notes

Revision 06 has the following changes:

1. Updated Table 2 on Page 2.