


Prepared by: ABB1

	CORROSION RESISTANT GROUND RODS AND GROUND ROD CLAMPS	013109
<b>Asset Type:</b> Electric Distribution	<b>Function:</b> Design and Construction	
<b>Issued by:</b> Dan Mulkey (DHM3) <i>Daniel H. Mulkey</i>	<b>Date:</b> 06-29-12	
<b>Rev. #06:</b> 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**

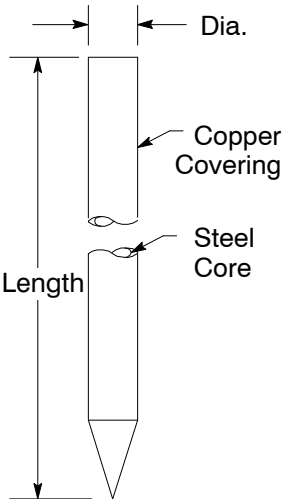
This document describes corrosion resistant ground rods and ground rod clamps.

References	Location	Document
Methods of Grounding Steel Transmission and Towers .....	TIL .....	012566
Method of Grounding Fences and Wire Trellises .....	TIL .....	020607
<u>Installation of Grounds on Wood Pole Transmission</u> 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.



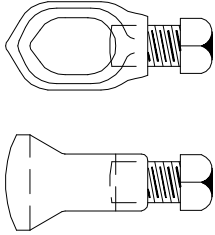
**Figure 1**  
**Ground Rod**

**Table 1 Conventional Ground Rods**

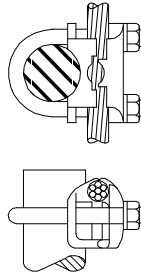
Dimensions		Minimum Copper Jacket Thickness (inches)	Code	Application	Mfr. <sup>1</sup>	Catalog Number
Dia.	Length					
5/8"	8'0"	0.010	187013	Normal Grounds for Pad-Mount and Pole Grounds	Nehring	NCC 588
					Galvan	6258
					Calpico	CP588
					Eritech	615880
3/4"	12'0"	0.010	010098	For Substation Grounds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

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

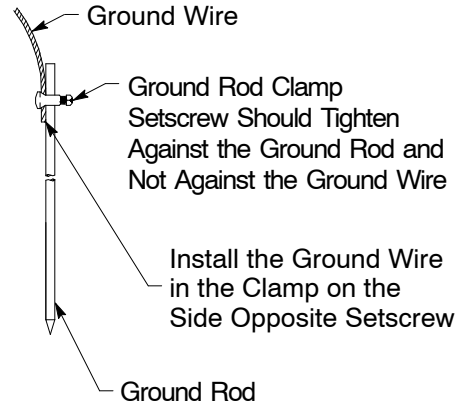
**Ground Rod Clamps**



**Figure 2  
Standard Clamp**



**Figure 3  
Clamp for Large Wire**



**Detail A  
Installation of Ground Rod**

**Table 2 Utility-Grade Ground Rod Clamps <sup>1</sup>**

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
				Galvan	JAB58HH
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
	Galvan	JAB34HH			
Figure 2	3/4"	4/0 and 250 kcmil	187024	Hubbell/Anderson	GC103-03
				Dossert	GNS-75
				Hubbell/Anderson	GC-111-3D
Figure 3	5/8" or 3/4"	300 to 500 kcmil	187020	Burndy	GAR6434
				Royal	2022(DQ)

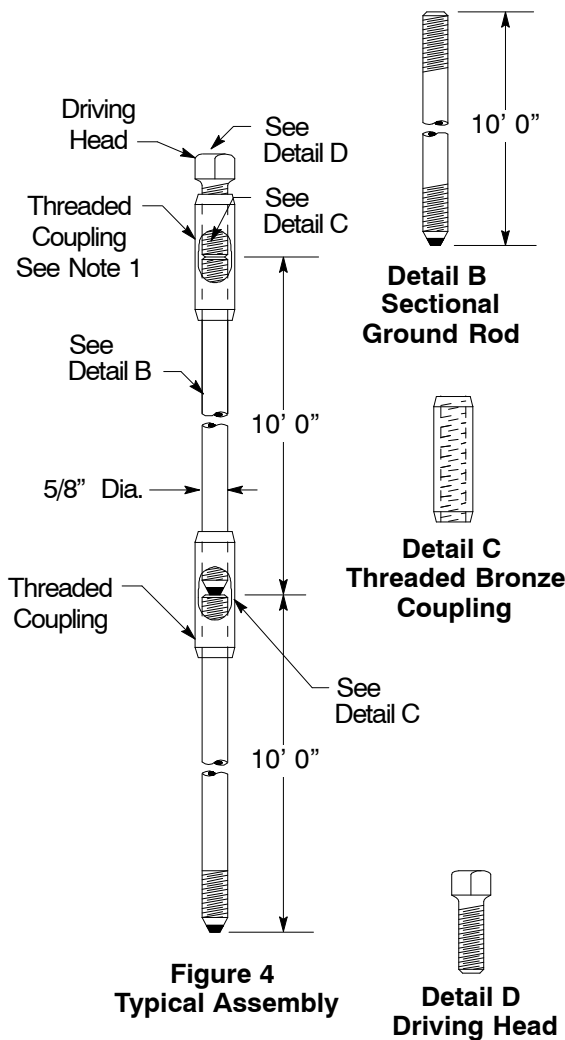
<sup>1</sup> The setscrew and clamp are to withstand approximately 35-40 foot-lbs. of torque on the setscrew head without cracking or breaking.

**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.