

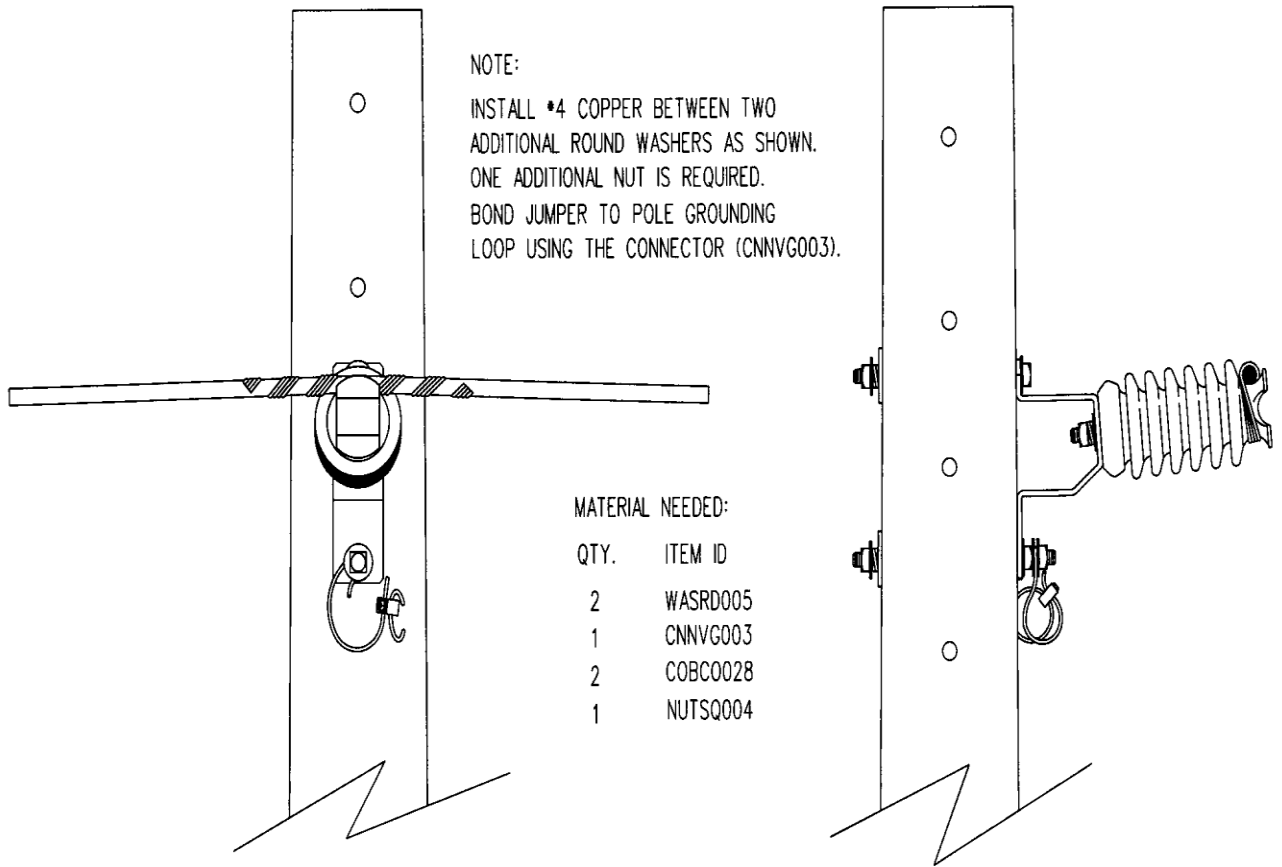


## GROUNDING

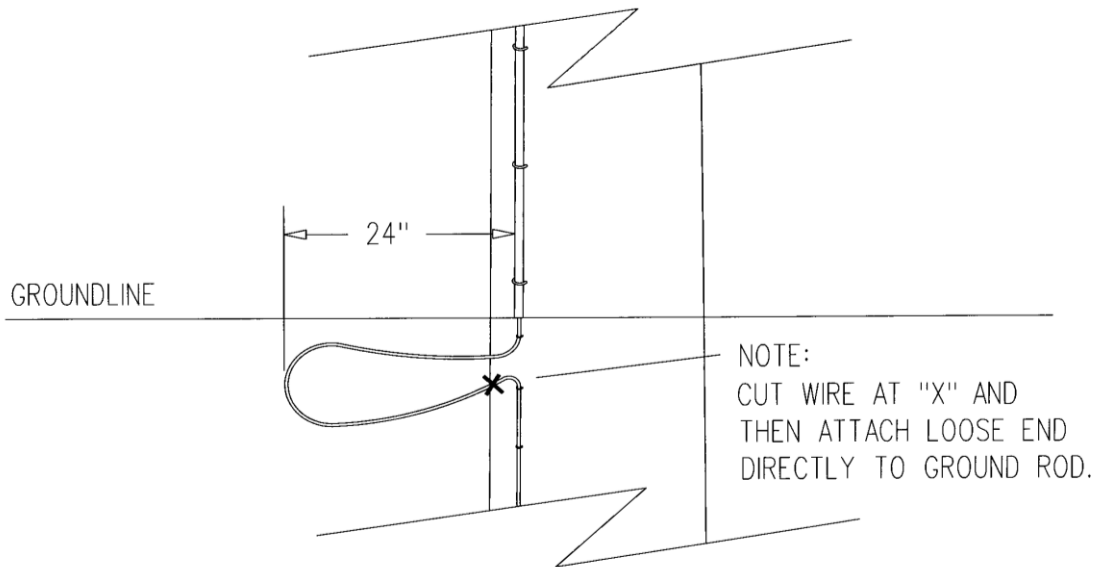
### INTRODUCTION

1. The staples on wood poles shall be 24 inches apart from the top of the pole to 8 feet above ground. Larger staples (STA PL 003) are to be used to attach the ground-wire guard to wood poles and shall be spaced every six inches. A two inch cable guard is to be used to shield the ground-wire on concrete poles that have an external pole ground.
2. ALL hardware on concrete poles shall be effectively grounded using #4 CU (See next page for grounding details). The additional material needed for grounding the hardware at each phase location is included with the pole plate. Insulator brackets, shield bracket if present, or hook disconnect switches installed on wood poles shall NOT be grounded.
3. When installing the #4 CW ground-wire on wood poles, a loop extending at least 2 feet from the pole surface shall be made near the ground-line of the pole (See next page for details). Once the pole has been set, the lower portion of this loop is to be cut, and the free end of the loop is to attach directly to the ground rod using the clamp (CLA GR 001). This will eliminate the #4 CU jumper from the ground-wire to the ground rod and the additional connector -- thus improving the grounding path.
4. The ground wire is to be located on the same side of the pole as the neutral conductor, and for horizontal construction shall be on opposite side of the pole from the B-phase conductor.
5. Three 8 foot copper-clad grounding rods are given with the equipment grounding plates. However, additional rods may be necessary to achieve a resistance to ground of 25 ohms or less. Chemically treating the ground surrounding the grounding electrode to achieve this value is not acceptable.
6. As a minimum, a non-equipment ground shall be installed on every distribution pole.
7. When installing an external pole ground on a concrete pole, if the ground loop cannot be found at groundline, the neutral ground loop shall be used.
8. G1W equipment grounds are to be used on poles with equipment that has grounding provisions: transformers, recloser, capacitors, and switches. Arrester stations also receive equipment grounds.

## GROUNDING DETAIL FOR HARDWARE INSTALLED ON CONCRETE POLE



## GROUND LOOP DETAIL FOR WOOD POLES

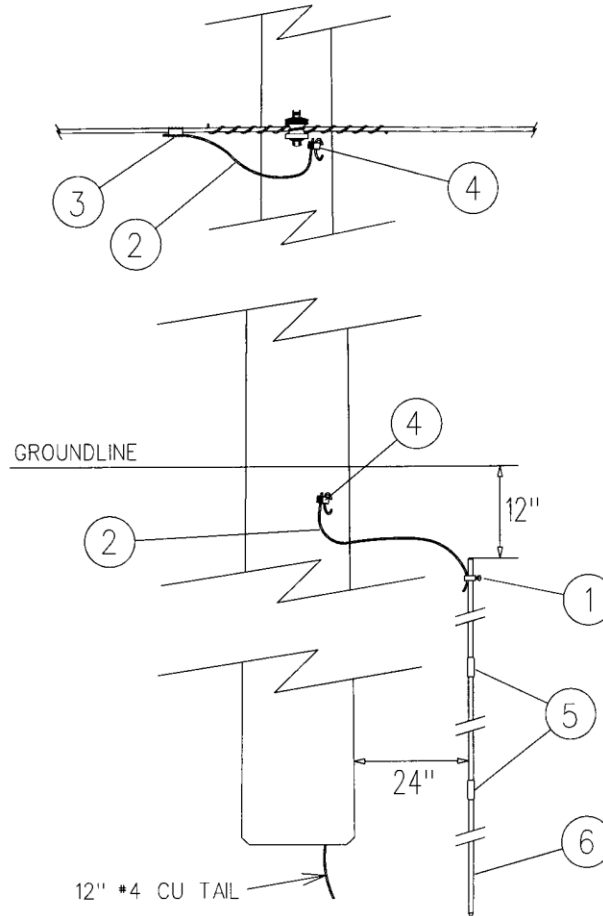


## G1C

### CONCRETE POLE – EQUIPMENT GROUND

OPTIONS: 6, 4, 2, 1/0, 2/0, 3/0, 4/0, 3#6

BOLT PLATE: NONE



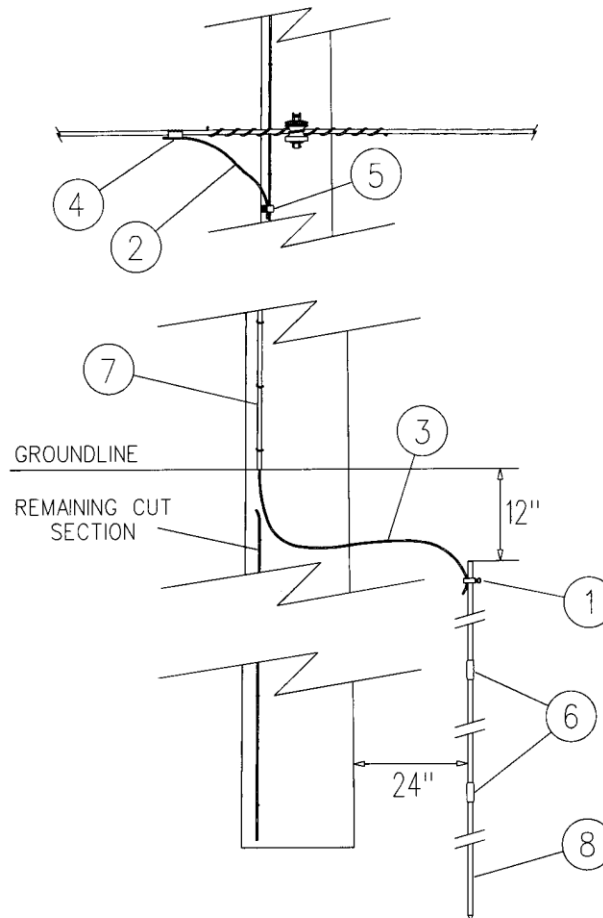
NO.	ITEM ID	QTY	DESCRIPTION
1	CLA GR 001	1	CLAMP, GROUND ROD, FOR 5/8 IN. ROD
2	COB CO 028	6	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	CNN CP ***	1	GENERAL CODE FOR AL. COMP. SIDE-BY CONNECTOR
4	CNN VG 003	2	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
5	CNN GR 002	2	COUPLING, GROUND ROD, FOR 5/8 IN. DIA. THREADLESS ROD
6	ROD GR 003	3	ROD, GROUND, 5/8 IN. DIA., 8 FT. LONG, THREADLESS

## G1W

### WOOD POLE – EQUIPMENT GROUND

OPTIONS: 6, 4, 2, 1/0, 2/0, 3/0, 4/0, 3#6

BOLT PLATE: NONE



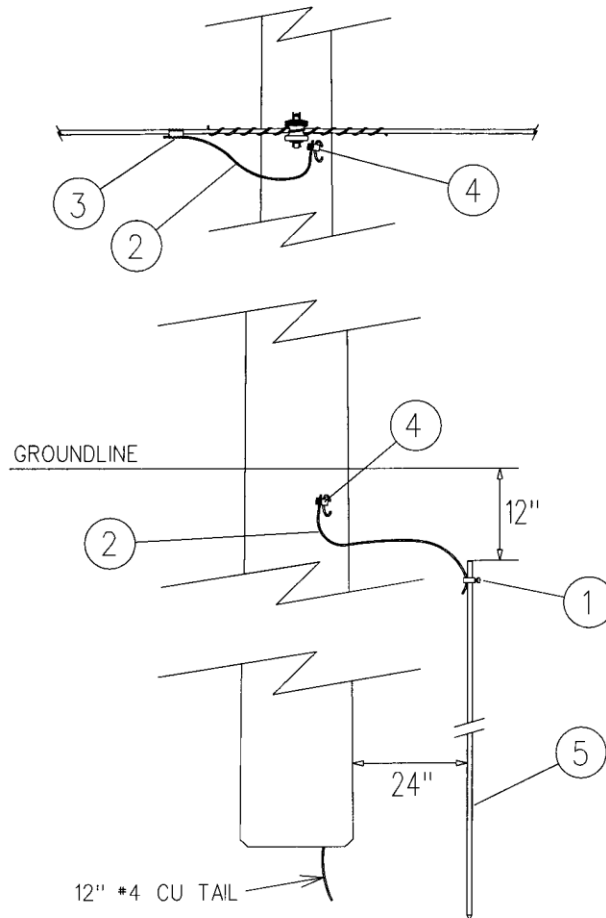
NO.	ITEM ID	QTY	DESCRIPTION
1	CLA GR 001	1	CLAMP, GROUND ROD, FOR 5/8 IN. ROD
2	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	COB CW 014	70	CONDUCTOR, COPPERWELD, #4 DSA
4	CNN CP ***	1	GENERAL CODE FOR AL. COMP. SIDE-BY CONNECTOR
5	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
6	CNN GR 002	2	COUPLING, GROUND ROD, FOR 5/8 IN. DIA. THREADLESS ROD
7	GUA GW 001	1	GUARD, GROUND WIRE, GREY PVC
8	ROD GR 003	3	ROD, GROUND, 5/8 IN. DIA., 8 FT. LONG, THREADLESS

## G3C

### CONCRETE POLE – NON-EQUIPMENT GROUND

OPTIONS: 6, 4, 2, 1/0, 2/0, 3/0, 4/0, 3#6

BOLT PLATE: NONE



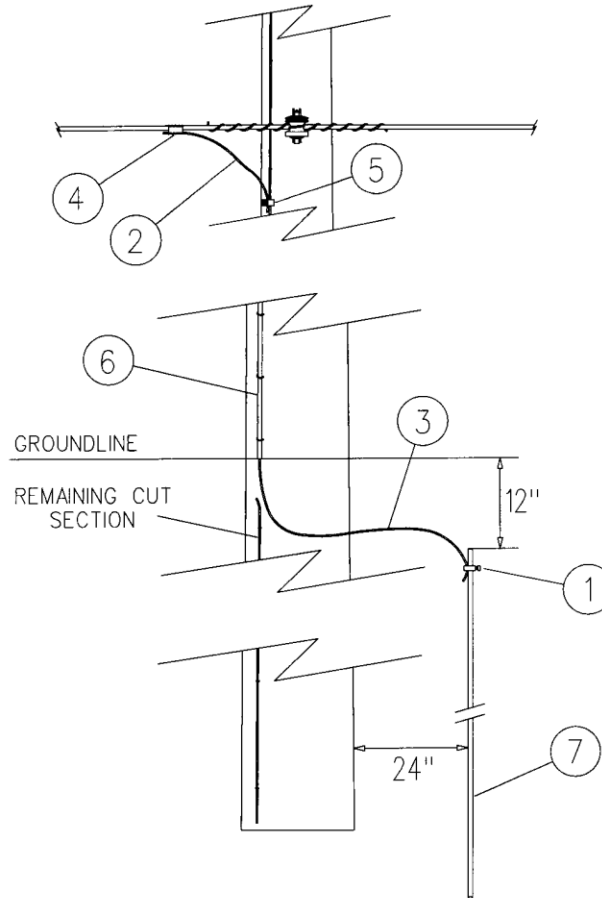
NO.	ITEM ID	QTY	DESCRIPTION
1	CLA GR 001	1	CLAMP, GROUND ROD, FOR 5/8 IN. ROD
2	COB CO 028	6	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	CNN CP ***	1	GENERAL CODE FOR AL. COMP. SIDE-BY CONNECTOR
4	CNN VG 003	2	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
5	ROD GR 003	1	ROD, GROUND, 5/8 IN. DIA., 8 FT. LONG, THREADLESS

## G3W

### WOOD POLE – NON-EQUIPMENT GROUND

OPTIONS: 6, 4, 2, 1/0, 2/0, 3/0, 4/0, 3#6

BOLT PLATE: NONE



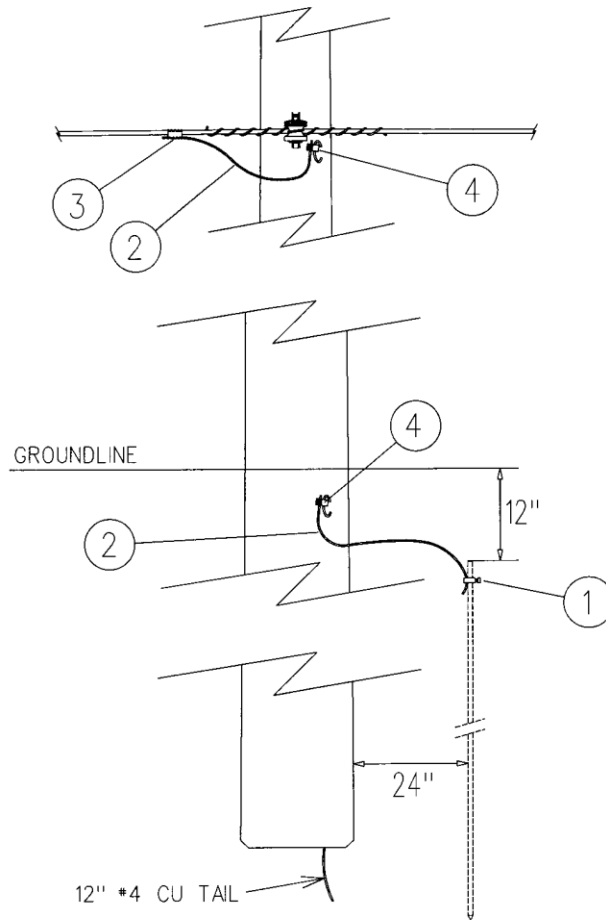
NO.	ITEM ID	QTY	DESCRIPTION
1	CLA GR 001	1	CLAMP, GROUND ROD, FOR 5/8 IN. ROD
2	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	COB CW 014	70	CONDUCTOR, COPPERWELD, #4 DSA
4	CNN CP ***	1	GENERAL CODE FOR AL. COMP. SIDE-BY CONNECTOR
5	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
6	GUA GW 001	1	GUARD, GROUND WIRE, GREY PVC
7	ROD GR 003	1	ROD, GROUND, 5/8 IN. DIA., 8 FT. LONG, THREADLESS

## G4C

### CONCRETE POLE – GROUND USING EXISTING ROD

OPTIONS 6, 4, 2, 1/0, 2/0, 3/0, 4/0, 3#6

BOLT PLATE: NONE



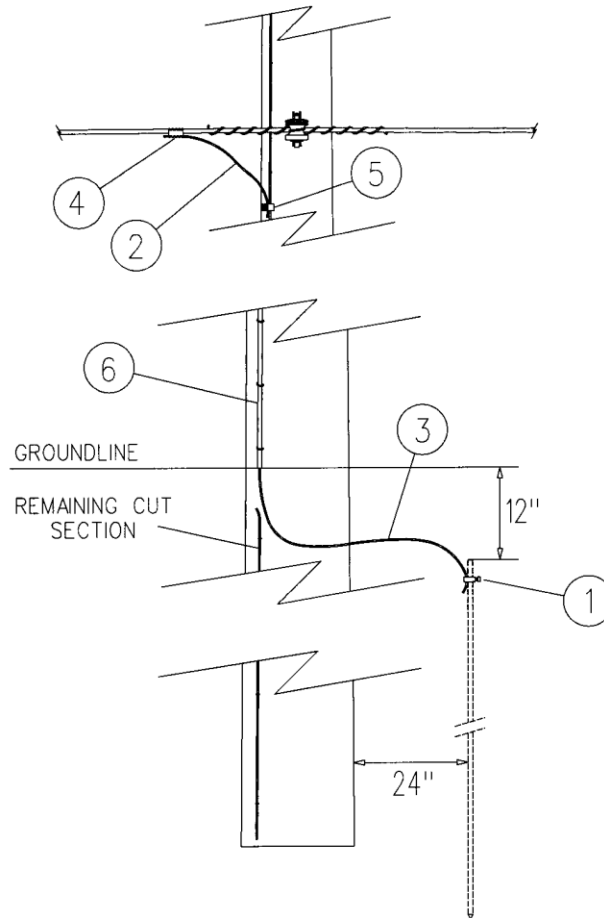
NO.	ITEM ID	QTY	DESCRIPTION
1	CLA GR 001	1	CLAMP, GROUND ROD, FOR 5/8 IN. ROD
2	COB CO 028	6	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	CNN CP ***	1	GENERAL CODE FOR AL. COMP. SIDE-BY CONNECTOR
4	CNN VG 003	2	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.

## G4W

### WOOD POLE – GROUND USING EXISTING ROD

OPTIONS: 6, 4, 2, 1/0, 2/0, 3/0, 4/0, 3#6

BOLT PLATE: NONE



NO.	ITEM ID	QTY	DESCRIPTION
1	CLA GR 001	1	CLAMP, GROUND ROD, FOR 5/8 IN. ROD
2	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	COB CW 014	70	CONDUCTOR, COPPERWELD, #4 DSA
4	CNN CP ***	1	GENERAL CODE FOR AL. COMP. SIDE-BY CONNECTOR
5	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
6	GUA GW 001	1	GUARD, GROUND WIRE, GREY PVC

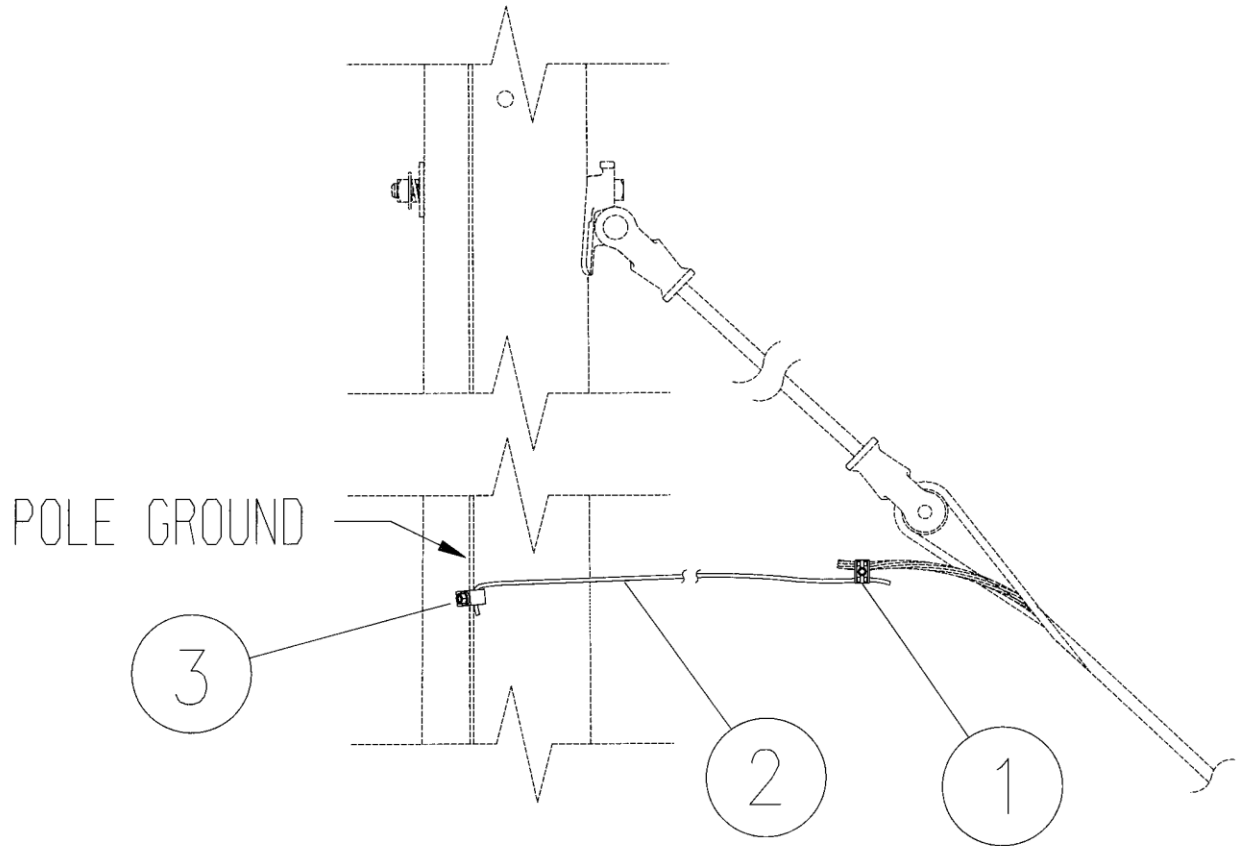


**G6**

**GUY BOND – INSULATED**

OPTIONS: NONE

BOLT PLATE: NONE



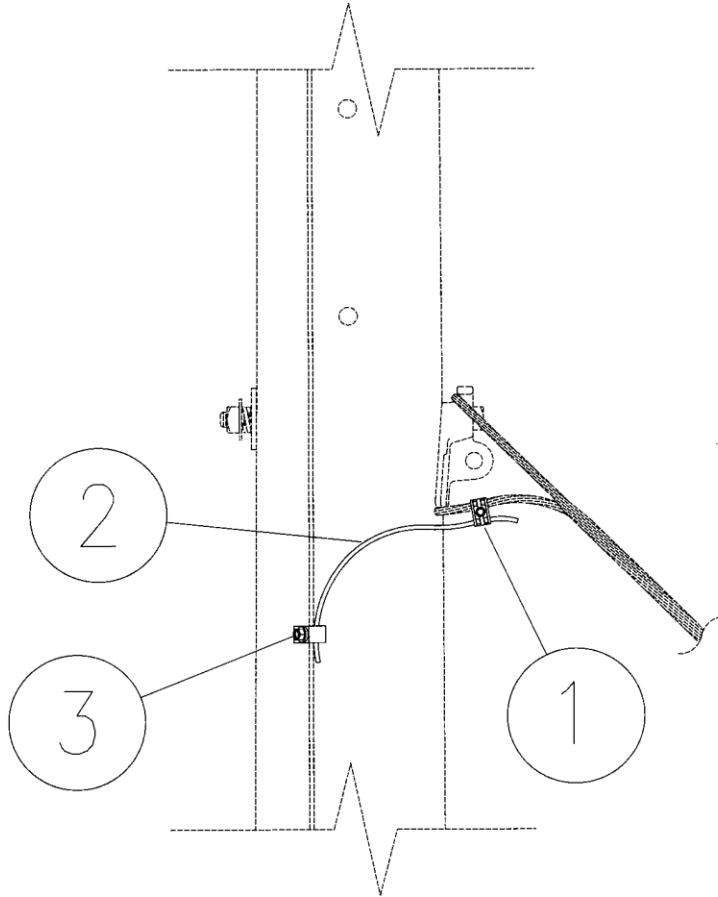
NO.	ITEM ID	QTY	DESCRIPTION
1	CLA PJ 001	1	CLAMP, PARALLEL JUMPER
2	COB CO 028	10	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.

**G7**

**GUY BOND – NON-INSULATED**

OPTIONS: NONE

BOLT PLATE: NONE



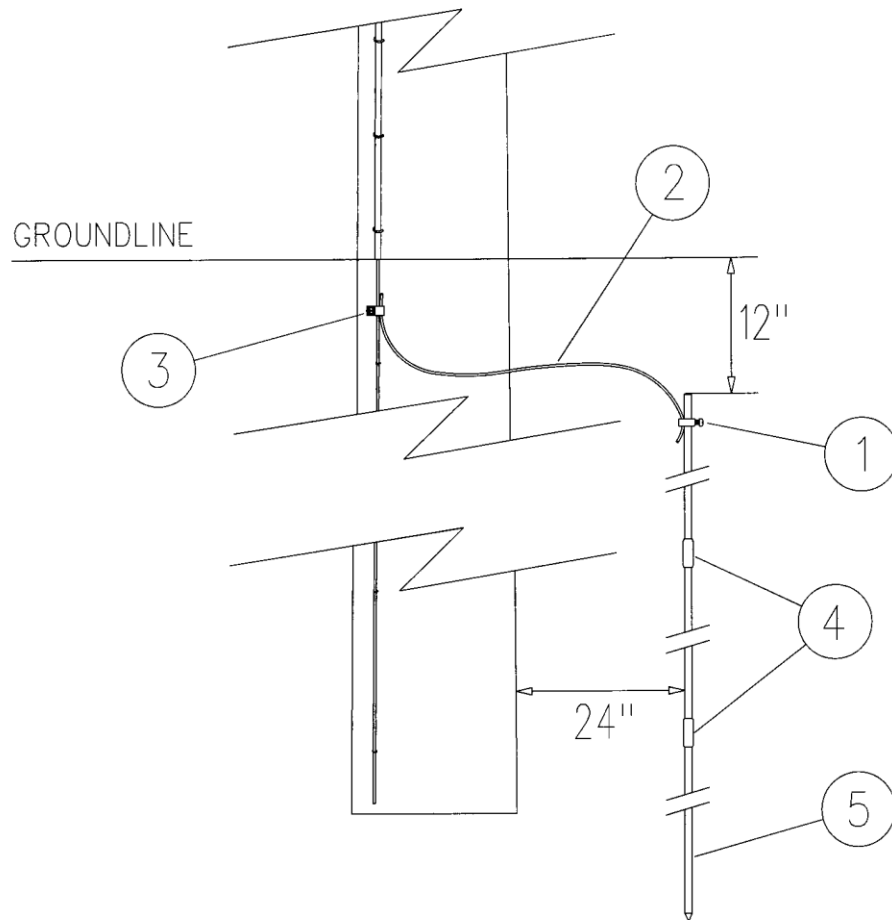
NO.	ITEM ID	QTY	DESCRIPTION
1	CLA PJ 001	1	CLAMP, PARALLEL JUMPER
2	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.

# G8

## ROD FOR EXISTING POLE GROUND

OPTIONS: NONE

BOLT PLATE: NONE



**NOTE:** EXISTING GROUND-WIRE SHOULD BE CUT AND ATTACHED DIRECTLY TO THE GROUND ROD IF POSSIBLE. IF THIS CANNOT BE DONE, BUILD AS SHOWN.

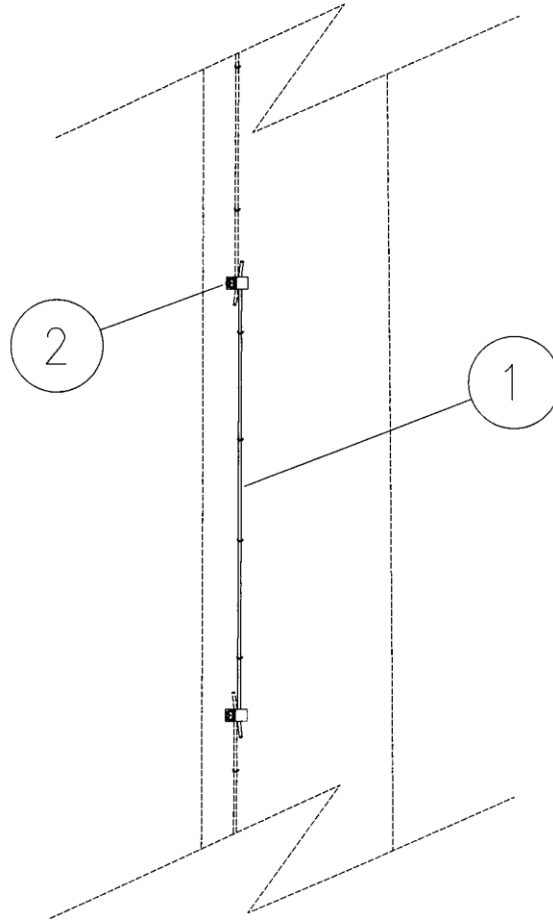
NO.	ITEM ID	QTY	DESCRIPTION
1	CLA GR 001	1	CLAMP, GROUND ROD, FOR 5/8 IN. ROD
2	COB CO 028	4	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
4	CNN GR 002	2	COUPLING, GROUND ROD, FOR 5/8 IN. DIA. THREADLESS ROD
5	ROD GR 003	3	ROD, GROUND, 5/8 IN. DIA., 8 FT. LONG, THREADLESS

**G9**

**POLE GROUND REPAIR**

OPTIONS: NONE

BOLT PLATE: NONE



NO.	ITEM ID	QTY	DESCRIPTION
1	COB CW 014	5	CONDUCTOR, COPPERWELD, #4 DSA
2	CNN VG 003	2	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.