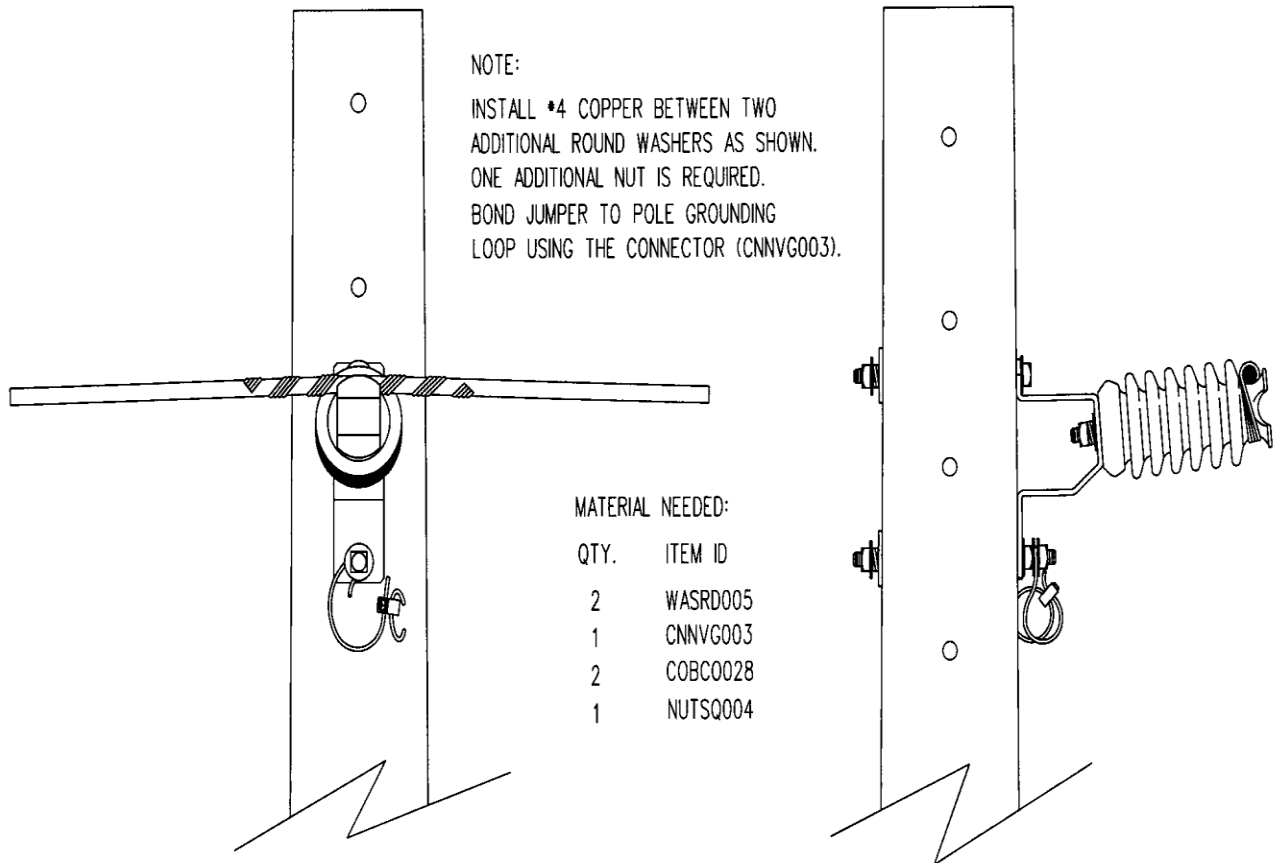


GROUNDING

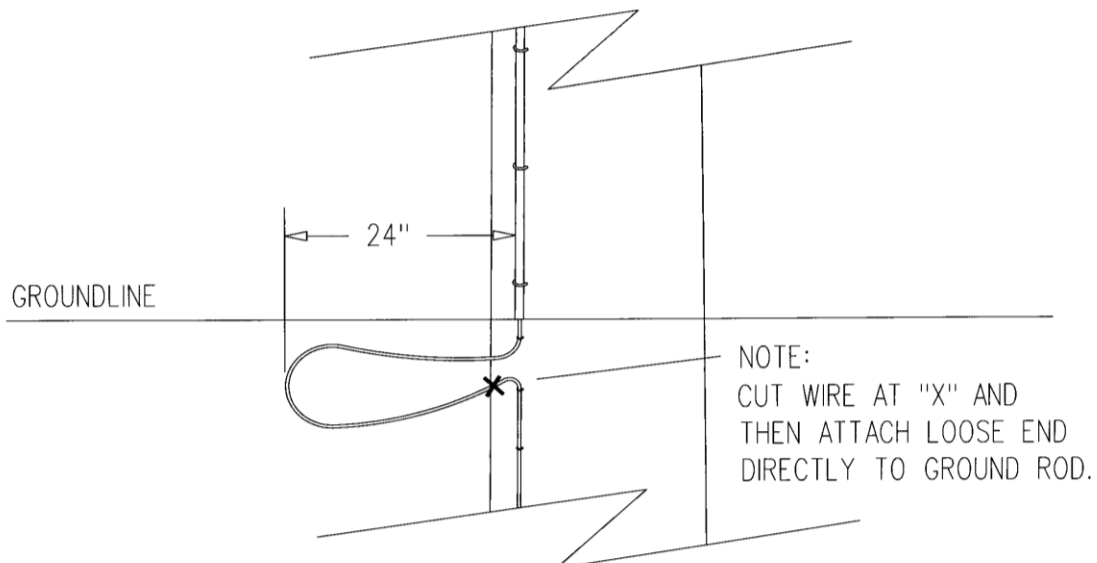
INTRODUCTION

1. The staples on wood poles shall be 12 inches apart from the top of the pole to the neutral.
2. The staples on wood poles shall be 24-36 inches apart from the neutral to the base of the pole.
3. Double staple the #4CU ground wire 12 inch above and 12 inch below the neutral. Cut the ground wire 3 inches below the top double staple.
4. Larger staples (STA PL 003) are to be used to attach the ground-wire guard to wood poles and shall be spaced every 8 inches. A two inch cable guard is to be used to shield the ground-wire on concrete poles that have an external pole ground.
5. 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.
6. 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.
7. 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.
8. 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.
9. As a minimum, a non-equipment ground shall be installed on every distribution pole.
10. 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.
11. 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

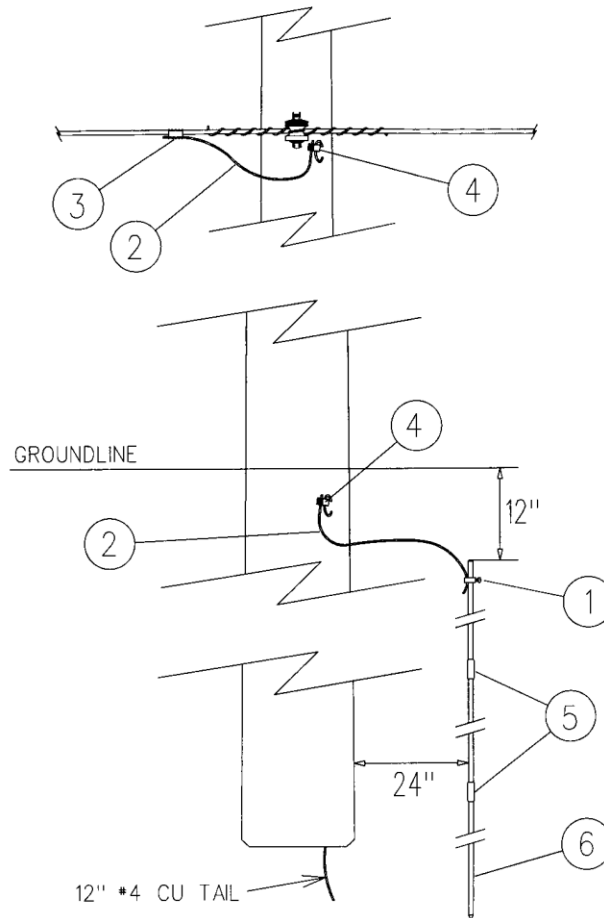


G1C

CONCRETE POLE – EQUIPMENT GROUND

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

BOLT PLATE: NONE



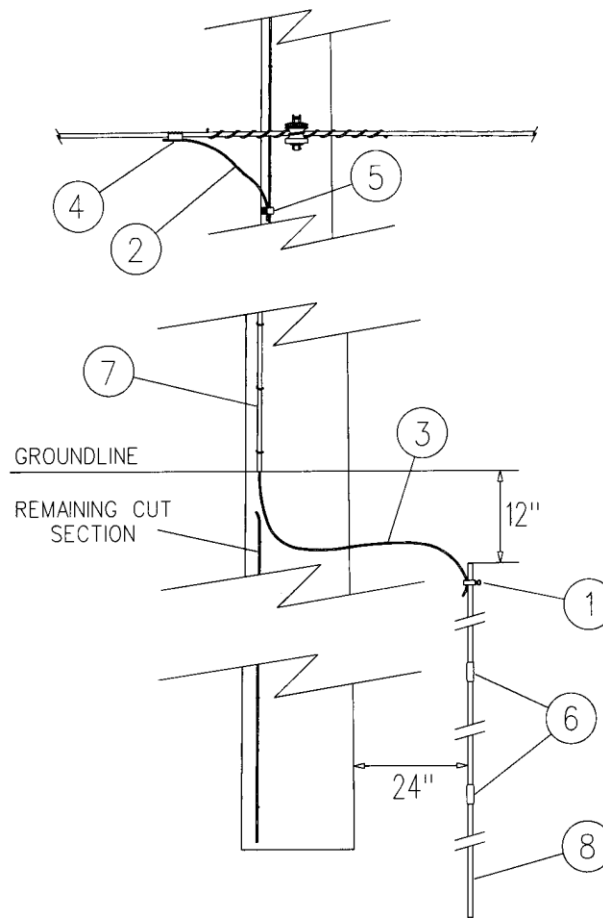
NO.	ITEM ID	QTY	DESCRIPTION
1	CLA GR 001	1	CLAMP, GROUND ROD, FOR 5/8 IN. ROD
2	COB CO 028	6	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	CNN CP ***	1	GENERAL CODE FOR AL. COMP. SIDE-BY CONNECTOR
4	CNN VG 003	2	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
5	CNN GR 002	2	COUPLING, GROUND ROD, FOR 5/8 IN. DIA. THREADLESS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



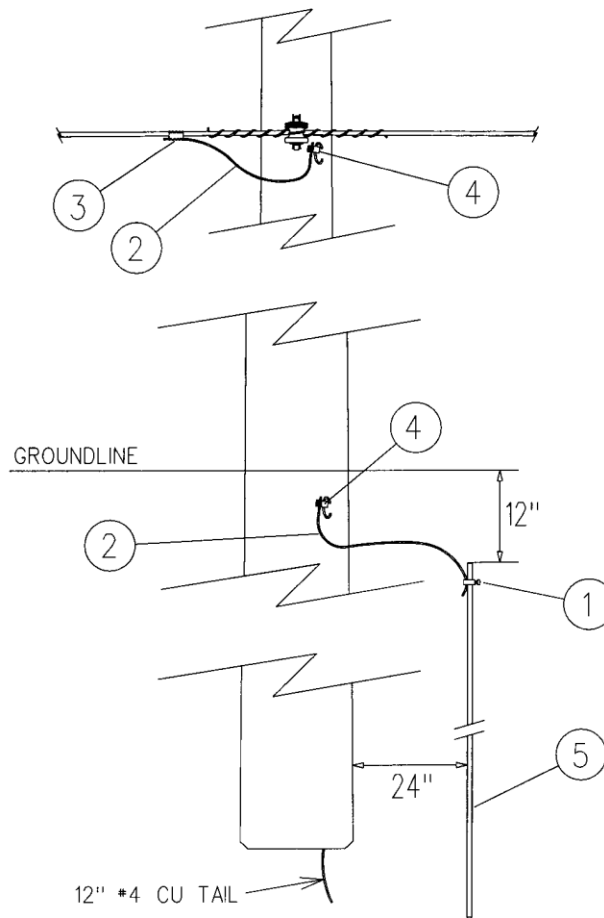
NO.	ITEM ID	QTY	DESCRIPTION
1	CLA GR 001	1	CLAMP, GROUND ROD, FOR 5/8 IN. ROD
2	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	COB CW 014	70	CONDUCTOR, COPPERWELD, #4 DSA
4	CNN CP ***	1	GENERAL CODE FOR AL. COMP. SIDE-BY CONNECTOR
5	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
6	CNN GR 002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



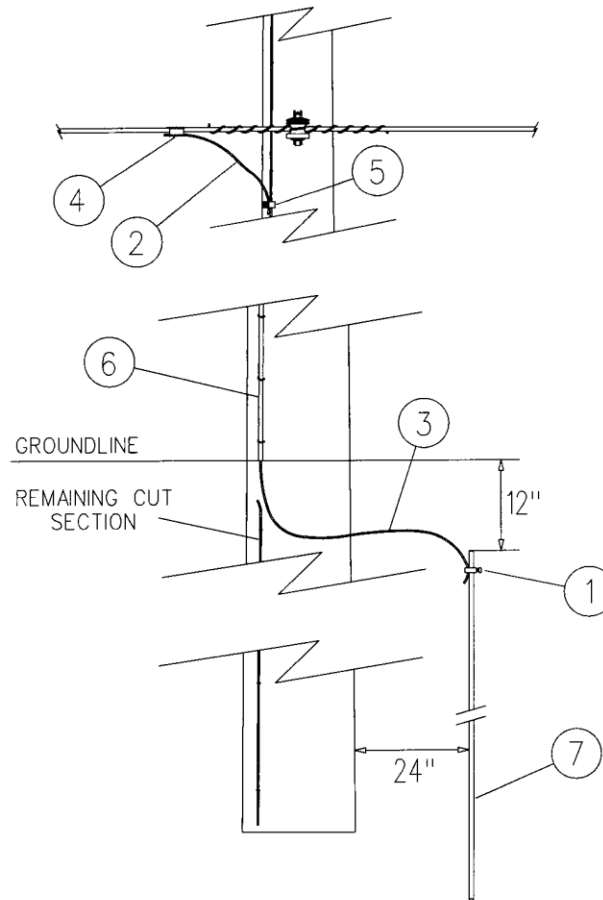
NO.	ITEM ID	QTY	DESCRIPTION
1	CLA GR 001	1	CLAMP, GROUND ROD, FOR 5/8 IN. ROD
2	COB CO 028	6	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	CNN CP ***	1	GENERAL CODE FOR AL. COMP. SIDE-BY CONNECTOR
4	CNN VG 003	2	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
5	ROD GR 003	1	ROD, GROUND, 5/8 IN. DIA., 8 FT. LONG, THREADLESS

G3W

WOOD POLE – NON-EQUIPMENT GROUND

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

BOLT PLATE: NONE



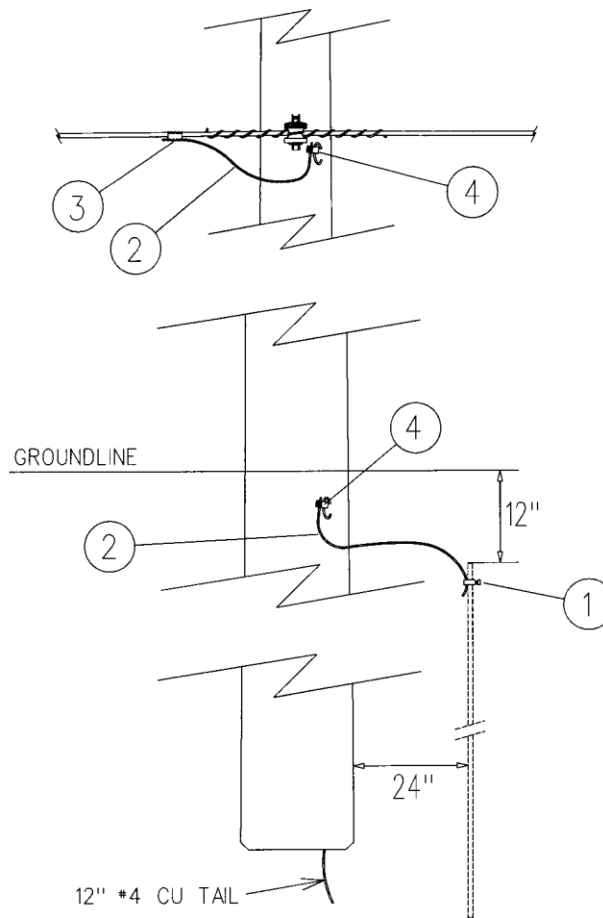
NO.	ITEM ID	QTY	DESCRIPTION
1	CLA GR 001	1	CLAMP, GROUND ROD, FOR 5/8 IN. ROD
2	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	COB CW 014	70	CONDUCTOR, COPPERWELD, #4 DSA
4	CNN CP ***	1	GENERAL CODE FOR AL. COMP. SIDE-BY CONNECTOR
5	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
6	GUA GW 001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



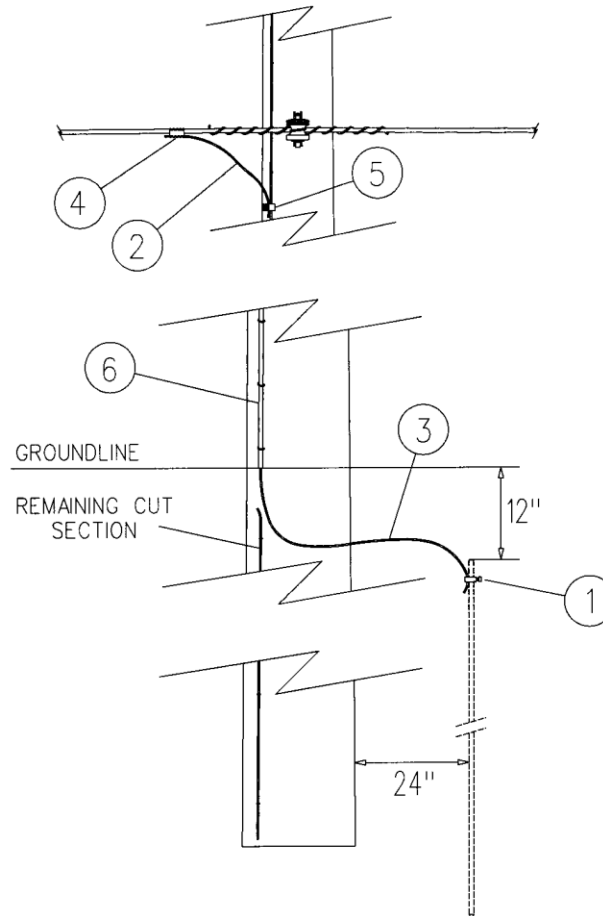
NO.	ITEM ID	QTY	DESCRIPTION
1	CLA GR 001	1	CLAMP, GROUND ROD, FOR 5/8 IN. ROD
2	COB CO 028	6	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	CNN CP ***	1	GENERAL CODE FOR AL. COMP. SIDE-BY CONNECTOR
4	CNN VG 003	2	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.

G4W

WOOD POLE – GROUND USING EXISTING ROD

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

BOLT PLATE: NONE

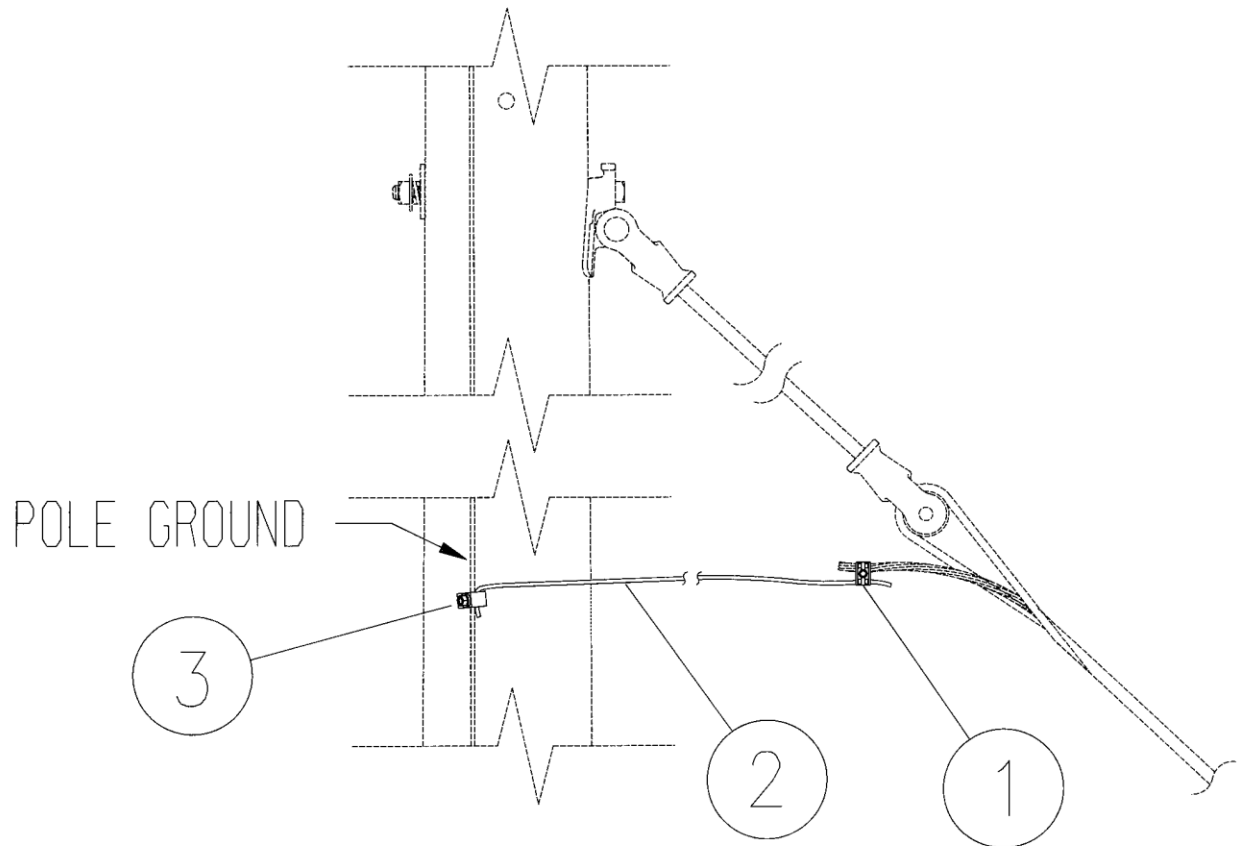


NO.	ITEM ID	QTY	DESCRIPTION
1	CLA GR 001	1	CLAMP, GROUND ROD, FOR 5/8 IN. ROD
2	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	COB CW 014	70	CONDUCTOR, COPPERWELD, #4 DSA
4	CNN CP ***	1	GENERAL CODE FOR AL. COMP. SIDE-BY CONNECTOR
5	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
6	GUA GW 001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

G6**GUY BOND – INSULATED**

OPTIONS: NONE

BOLT PLATE: NONE



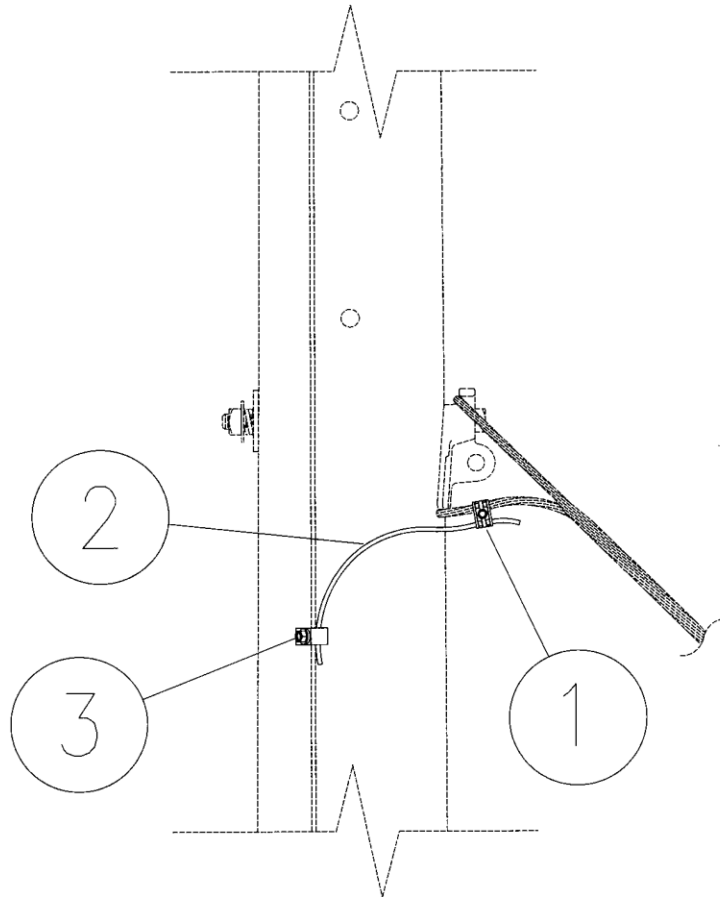
NO.	ITEM ID	QTY	DESCRIPTION
1	CNN CP 002	1	CONNECTOR, #2, 6-2 MAIN, 2-1/0 TAP, ALUMINUM COMPRESSION, PARALLEL TAP,
2	COB CO 028	10	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.

G7

GUY BOND – NON-INSULATED

OPTIONS: NONE

BOLT PLATE: NONE

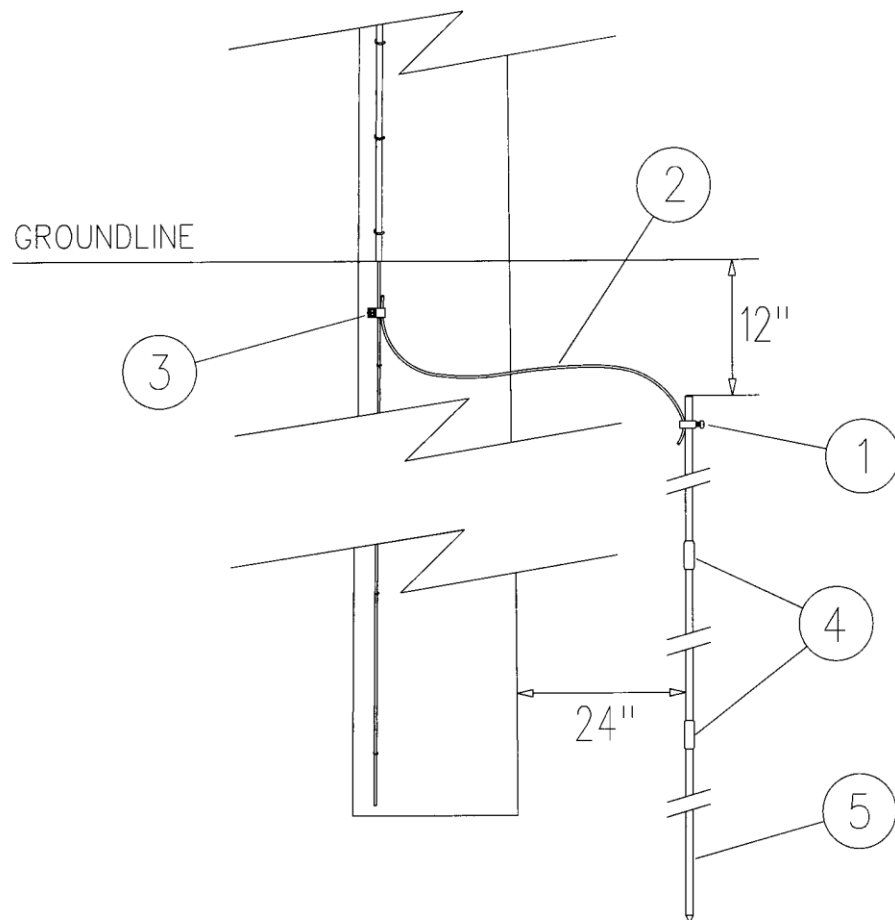


NO.	ITEM ID	QTY	DESCRIPTION
1	CNN CP 002	1	CONNECTOR, #2, 6-2 MAIN, 2-1/0 TAP, ALUMINUM COMPRESSION, PARALLEL TAP,
2	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
3	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.

G8**ROD FOR EXISTING POLE GROUND**

OPTIONS: NONE

BOLT PLATE: NONE



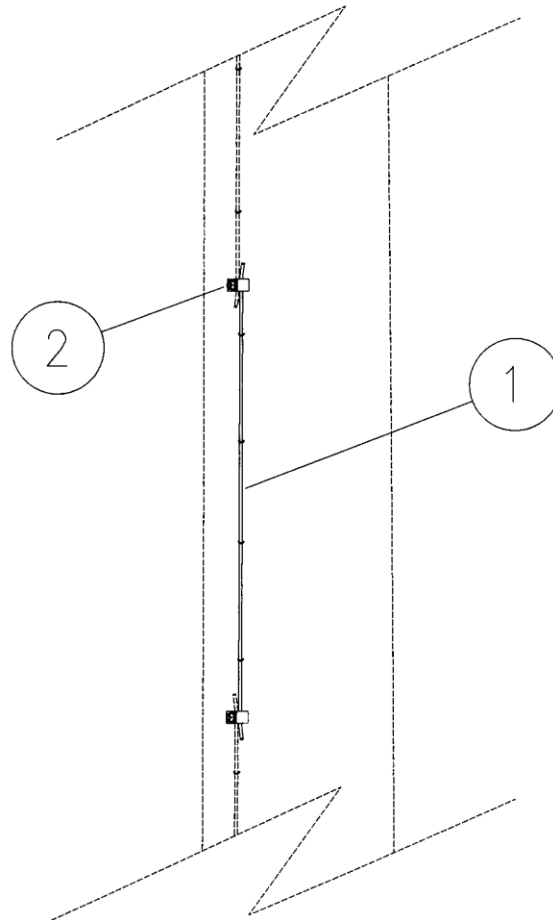
NOTE: EXISTING GROUND-WIRE SHOULD BE CUT AND ATTACHED DIRECTLY TO THE GROUND ROD IF POSSIBLE. IF THIS CANNOT BE DONE, BUILD AS SHOWN.

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.