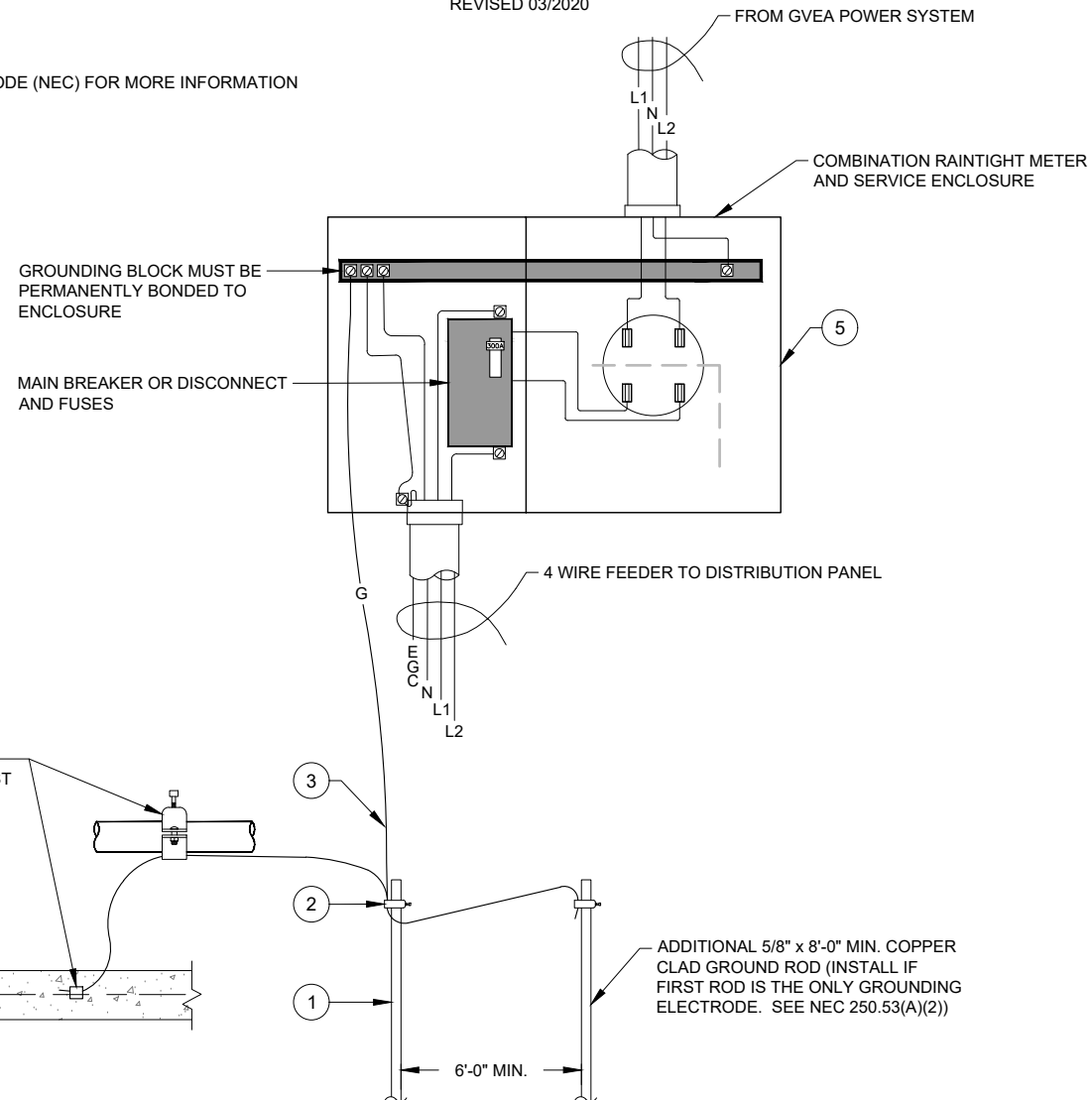


# Connection Detail - Meter Located On Building Being Served

REVISED 03/2020

NOTE: SEE NATIONAL ELECTRICAL CODE (NEC) FOR MORE INFORMATION



**LEGEND:**

EGC	Equipment Grounding Conductor	Green or Bare Wire
G	Grounding Electrode Conductor	Green or Bare Wire
L1,L2	Phases	Black Wires
N	Neutral	Bare Wire (in mast only) or Black Wire with White Tape Wrapped Around Ends

**WIRE/CONDUIT SIZE TABLE**

WIRE SHALL BE COPPER

SERVICE SIZE	MINIMUM WIRE SIZE (XHHW OR RHW)	MINIMUM CONDUIT WIRE (RMC OR IMC)	MINIMUM GROUNDING ELECTRODE CONDUCTOR SIZE	MINIMUM EQUIPMENT GROUNDING CONDUCTOR SIZE
100 Amp	#2 Copper	1 1/4" *	#4 Copper	#8 Copper
200 Amp	#3/0 Copper	2"	#4 Copper	#6 Copper
300 Amp	300 kcmil Copper	2"	#2 Copper	#4 Copper

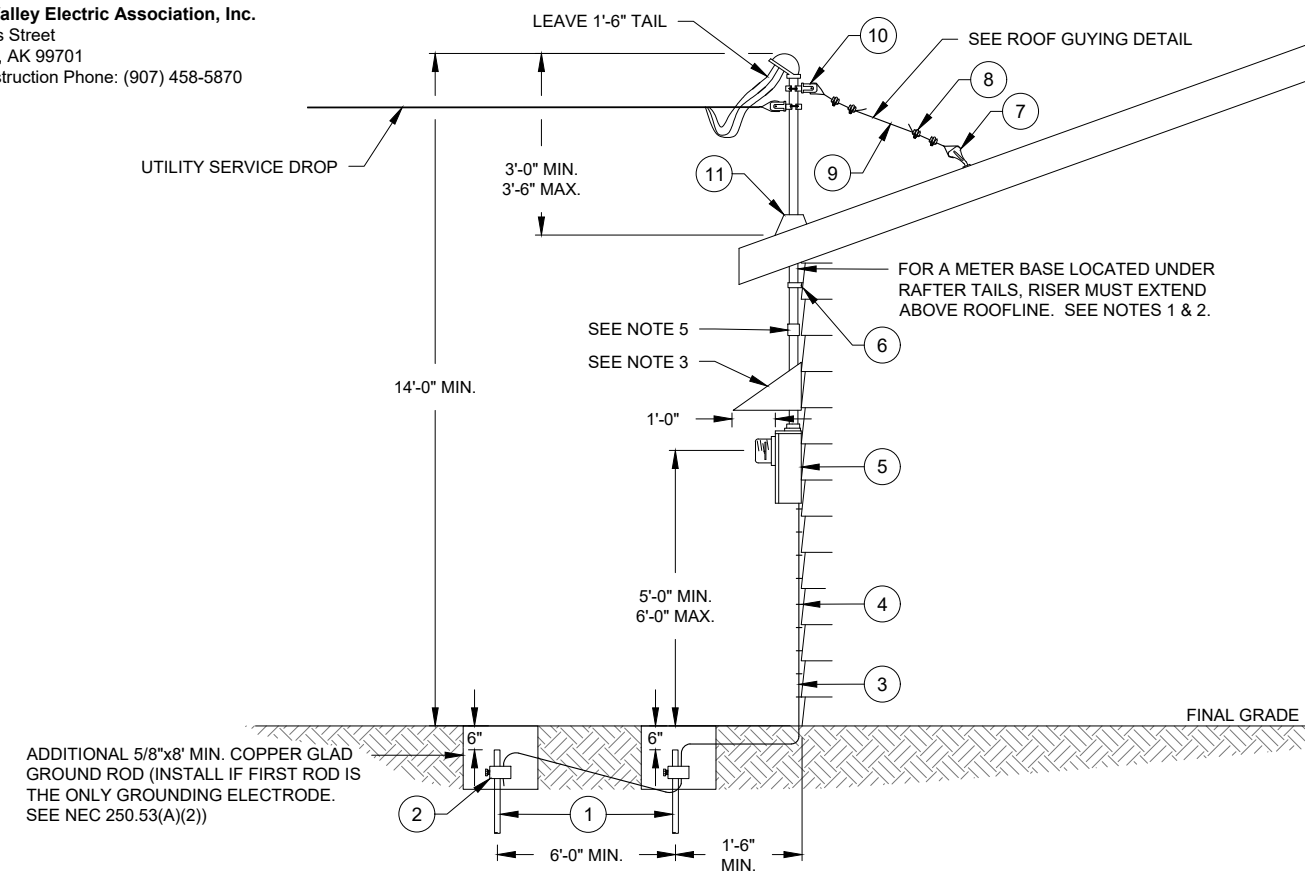
\*See instructions for item #5 regarding masts above roof line.



**Golden Valley Electric Association, Inc.**  
758 Illinois Street  
Fairbanks, AK 99701  
New Construction Phone: (907) 458-5870

# Construction Guide For Overhead Residential Service - Meter On House (Type A)

REVISED 07/2020



**NOTES:**

- In addition to the requirements of NEC 230.9, service drop conductors shall be a minimum of 3'-0" from any door, opening window, gable vent, or other building opening. The service drop conductors may be less than 3'-0" when installed above a gable vent or non-opening window per the Exception to NEC230.9(A)
- All service entrance masts that extend above the roof line shall be a minimum 2" rigid metal conduit (RMC) or intermediate metal conduit (IMC) and shall be guyed using minimum 1/8" aircraft cable and approved clamps. See Roof Guy Detail.
- If roof overhang is less than 2'-0", provide suitable protection for meter from ice and snow. Protection by overhanging roof is preferred. An acceptable alternative is a protective hood made of 18 gauge (minimum) galvanized steel, fastened at the roof edge or wall, and extending out a minimum of 12" off the front of the meter enclosure and 6" on each side of the service equipment. Installation must meet all relevant code requirements.
- The information in this handout provides general guidelines for the installation of service entrance equipment to meet the requirements of GVEA. It is the owner's responsibility to make sure that the service is also installed to meet all applicable city, borough, and State of Alaska codes, as well as the National Electrical Code (NEC) and National Electrical Safety Code (NESC).
- Couplings in the conduit must be below roof line.
- Telephone drop may not be attached to mast. See NEC 230.28.
- See NEC 230.24 for required clearances over roof.

**MATERIAL LIST**

ITEM	QTY	DESCRIPTION	TYP. CATALOG #
1	2	GROUND ROD - 5/8"x8'	Blackburn 6258
2	2	GROUND ROD CLAMP	Blackburn G5
3	**	#4AWG OR #2AWG CU WIRE	*
4	**	COPPERCLAD STAPLE	Joslyn J6652(E)
5	1	SERVICE ASSEMBLY	*
6	2	CONDUIT STRAPS (RMC OR IMC)	Blackburn 16-416
7	1	THIMBLE EYEBOLT - 5/8"	Joslyn J8151(E)
8	4	CROSBY CLAMP - 3/16"	Campbell 316CC
9	8	GUY CABLE - 1/8"	Campbell 18AC
10	1	MAST CLAMP	Joslyn J0588(E)
11	1	ROOF FLASHING AND SEAL	Blackburn NF2

\*See instruction on following pages.

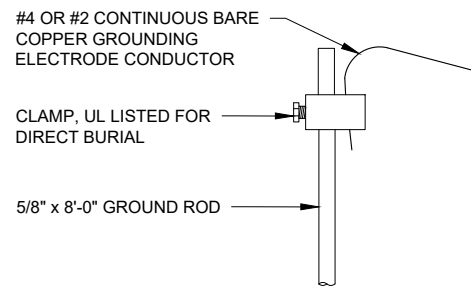
\*\*Quantity/Length determined by installation requirements.

# Instructions by Item Number

REVISED 03/2020

- ① **GROUND ROD**  
Shall be 5/8" x 8'-0" listed copper-clad. Locate at least 1'-6" from foundation or basement of building and out from under eaves. See National Electrical Code, Article 250 for more information.

Drive rod 6" below ground level into undisturbed earth. Leave exposed for inspection. In winter, cover to prevent snow from filling hole.



- ② **GROUND ROD CLAMP**  
Use bronze or stainless steel clamp listed for direct burial.
- ③ **#4AWG OR #2AWG SOLID OR STRANDED BARE COPPER WIRE**

Connect continuous grounding electrode conductor to grounding block at disconnect, then ground to minimum 5/8" x 8'-0" ground rod and, if available, connect to nearest continuous metallic cold water system. Attached with UL listed grounding connectors.

- ④ **STAPLE, Copper Clad**  
Staple Ground Wire every 6".

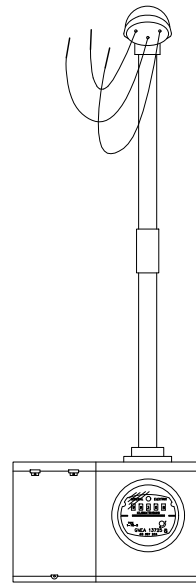


- ⑤ **SERVICE ASSEMBLY - (Member's service equipment)**  
Preassembled with Mast, Breaker, and Conductors See "Construction Guide for Overhead Residential Service Assembly" for details.

- Prior to wiring a building or performing any electrical construction for a new service, the member shall request approval from GVEA for the location of member's service equipment, including meter(s).
- The location of the member's service equipment shall be determined by working with GVEA's Construction Services Representative.
- The member's service equipment shall be level, plumb, and located outside on the member's structure. The member's service equipment must be firmly supported and be in a location free from vibration, mechanical damage, and accumulating or falling ice. The meter must be accessible for reading, testing, and replacement.
- GVEA does not permit the installation of the member's service equipment on GVEA facilities. Member's service equipment is not allowed to be installed on mobile structures.

- ⑤ **SERVICE ASSEMBLY (CONTINUED)**

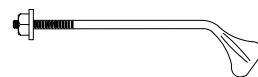
- Horizontal centerline of the meter shall be between 5'-0" and 6'-0" above the finished grade immediately in front of the meter.
- The distance between the vertical center line of the meter and any wall or obstruction shall be greater than 7".
- Member must provide and maintain a minimum 4'-0" wide path and debris free clearing between the member's service entrance mast and GVEA's pole for access to GVEA's service drop conductors. Remove any overhanging limbs or trees.
- All service conduit extending above the roof must be minimum 2" rigid (RMC or IMC) conduit and must be guyed.
- Meter socket for a 300A self-contained service must have a lever bypass and the upper right-hand jaw must be reduced or have an anti-inversion clip installed to prevent the insertion of a 200A meter.



- ⑥ **CONDUIT STRAPS**  
Strap must be listed for use with conduit installed. Install with screws appropriate for the material to which it is being fastened.



- ⑦ **GALVANIZED THIMBLE EYEBOLT**  
Install with adequate weather seal, square washers, and square nut (min. 5/8" dia).

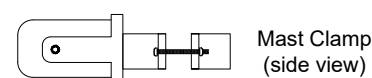


- ⑧ **CROSBY CLAMP**



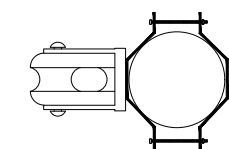
"Crosby" Clamp must be installed on 1/8" aircraft guy cable with loop over tail.

- ⑨ **GUY CABLE**  
Must be 1/8" aircraft cable (minimum). Must be in line with service drop.



Mast Clamp (side view)

- ⑩ **MAST CLAMP**

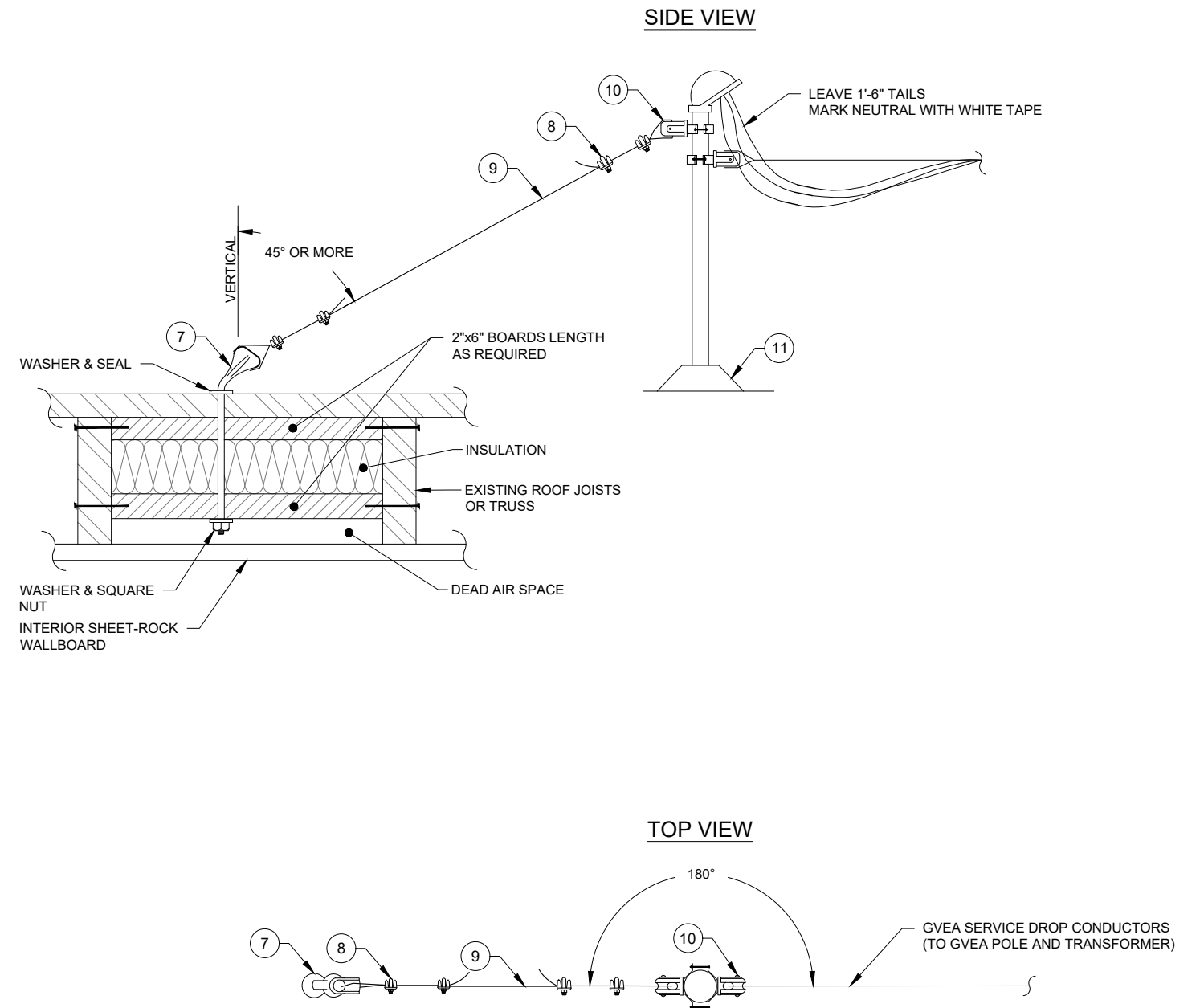


Mast Clamp (top view)

- ⑪ **ROOF FLASHING AND SEAL**

# Roof Guying Detail

REVISED 03/2020



**NOTE:**

All service entrance masts extending above the roof must be minimum 2" rigid (RMC or IMC) conduit and must be guyed. Roof guy line must be minimum 1/8" stainless steel wire (aircraft cable) with approved clamps.