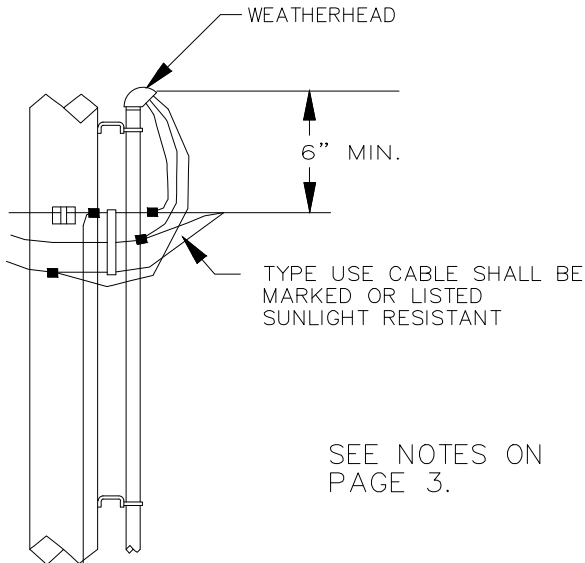


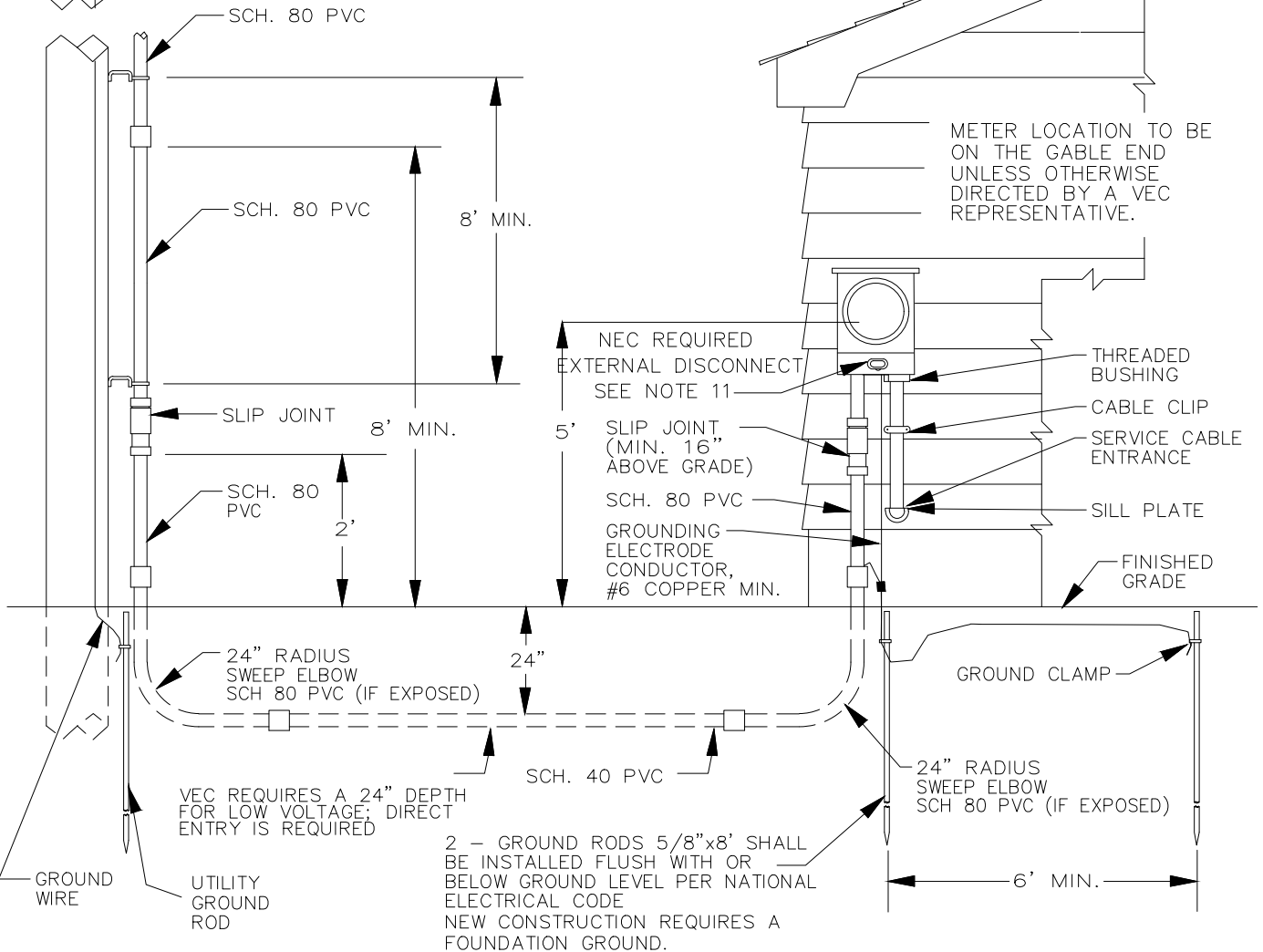
# UNDERGROUND SERVICE – SECONDARY




RESIDENTIAL SERVICES ONLY			
RATING	CABLE LENGTH*	TRIPLEX SIZE	CONDUIT
100 A	0–210 FT.	1/0	2 1/2"
	211–410 FT.	4/0	2 1/2"
150 A	0–275 FT.	4/0	2 1/2"
	276–435 FT.	350 MCM	3"
200 A	0–205 FT.	4/0	2 1/2"
	206–325 FT.	350 MCM	3"

\* Cable Length is the total of trench and riser lengths. This chart does not indicate that the cable can be pulled into conduits of these lengths. Pulling tension calculations are necessary to make that determination.

SEE NOTES ON PAGE 3.



REV	DATE	REVISION DESCRIPTION	DRN	CKD



VERMONT ELECTRIC CO-OP INC.

VERMONT ELECTRIC COOPERATIVE INC.

JOHNSON, VT

UNDERGROUND SERVICE – SECONDARY

DES: DRN: CB

CKD: SCALE: NONE

DATE: 07/10/2017

DWG. NO. 201 Page 1 of 2

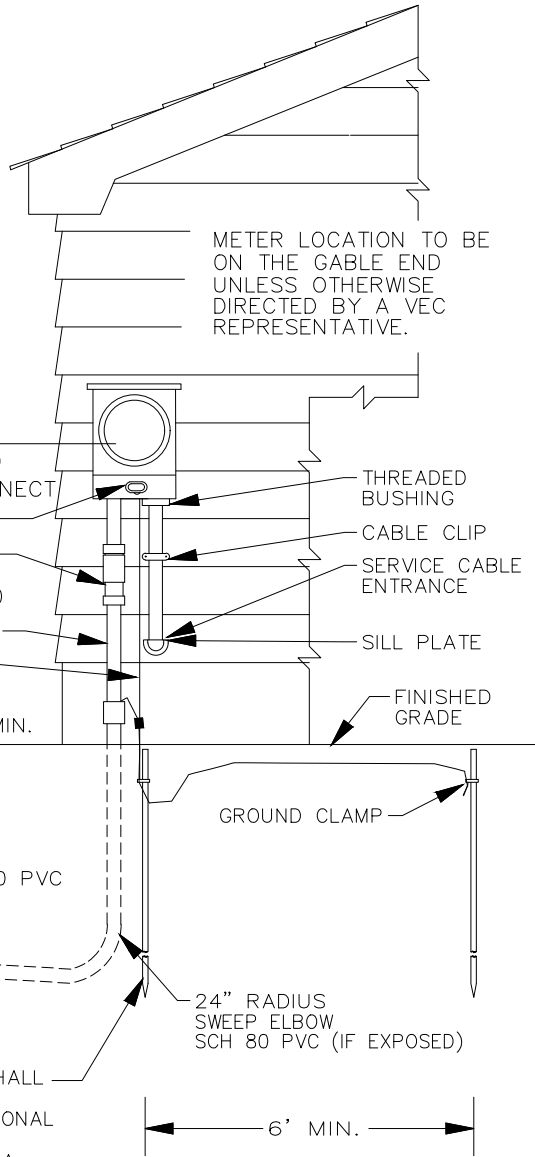
REV

## UNDERGROUND SERVICE

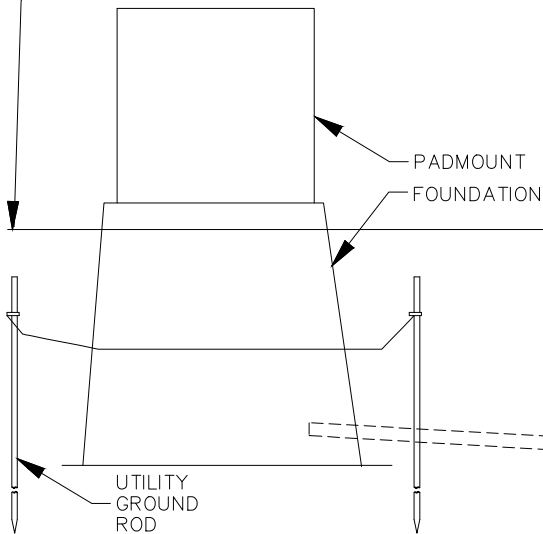
RESIDENTIAL SERVICES ONLY			
RATING	CABLE LENGTH*	TRIPLEX SIZE	CONDUIT
100 A	0-210 FT.	1/0	2 1/2"
	211-410 FT.	4/0	2 1/2"
	411-650 FT.	350 MCM	3"
150 A	0-275 FT.	4/0	2 1/2"
	276-435 FT.	350 MCM	3"
200 A	0-205 FT.	4/0	2 1/2"
	206-325 FT.	350 MCM	3"

\* Cable Length is the total of trench and riser lengths. This chart does not indicate that the cable can be pulled into conduits of these lengths. Pulling tension calculations are necessary to make that determination.

SEE NOTES ON THE NEXT PAGE.



VEC REQUIRES THAT THE TOP OF THE VAULT IS EXPOSED 4" ABOVE FINISH GRADE



NEC REQUIRED  
EXTERNAL DISCONNECT  
SEE NOTE 11

SLIP JOINT  
(MIN. 16"  
ABOVE GRADE)

SCH. 80 PVC

GROUNDING  
ELECTRODE  
CONDUCTOR,  
#6 COPPER MIN.

METER LOCATION TO BE ON THE CABLE END UNLESS OTHERWISE DIRECTED BY A VEC REPRESENTATIVE.

THREADED BUSHING

CABLE CLIP

SERVICE CABLE ENTRANCE

SILL PLATE

FINISHED GRADE

24" MIN.

SCH. 40 PVC

GROUND CLAMP

24" RADIUS SWEEP ELBOW  
SCH 80 PVC (IF EXPOSED)

2 - GROUND RODS 5/8"x8' SHALL BE INSTALLED FLUSH WITH OR BELOW GROUND LEVEL PER NATIONAL ELECTRICAL CODE  
NEW CONSTRUCTION REQUIRES A FOUNDATION GROUND.

6" MIN.

REV	DATE	REVISION DESCRIPTION	DRN	CKD



VERMONT ELECTRIC COOPERATIVE INC.

JOHNSON, VT

UNDERGROUND SERVICE

DES: DRN: CB  
CKD: SCALE: NONE  
DATE: 07/10/2017

DWG. NO. 201 Page 2 of 3

REV 1

## UNDERGROUND SERVICE - SECONDARY

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### Notes:

1. All wiring and materials shall conform to the requirements of the National Electric Code (NEC) and to any applicable local codes. Where conflict exists the more stringent code will apply. For member owned equipment, any requirements in excess of code specified minimums, are recommended not required.
2. This specification covers residential services. Commercial service equipment is under the jurisdiction of the electrical inspector. The cable sizes shown in the chart may not apply to commercial services.
3. Conduit conductors may be required for multi-conductor services and for conductors of 350 MCM or larger. Exercise care in limiting water entry.
4. The location of the conduit risers and the meter socket will be designated by a VEC representative. Any relocation shall be approved by a VEC representative.
5. Locate the riser conduit on the quarter of the pole away from normal traffic.
6. Residential 320 amp meter sockets, and all commercial meter sockets, shall have a manual bypass. The meter socket shall have a separate grounding electrode conductor connector. The connector shall be appropriately connected to the service neutral bus. The grounding electrode connection will normally be made in the meter socket. The service neutral, and not the grounding electrode conductor, shall extend from the meter socket to the main disconnect.
7. The grounding electrode conductor, to a driven ground, shall be a minimum of #6 copper. The conductor shall be adequately protected. The driven grounds shown shall be a minimum of 5/8" in diameter and 8' long.
8. Any steel conduit within 18" of the surface shall be bonded. Steel conduit is not required.
9. Any construction, at the pole, above ground level, shall be done by VEC. Exception: The member may install that portion of their equipment that can be reached while standing on the ground. Any trench near the base of the pole shall be immediately backfilled and properly tamped.
10. All gas valves shall be a minimum of 10 ft from electric meter equipment. For clearances less than 10 ft see NFPA 58.
11. The Service Disconnecting Means for one- and two-family dwelling units per the NEC section 230.85 must be located in a readily accessible outdoor location and be marked per the NEC requirements.
12. The chart shows the acceptable total cable length for given service amp ratings and conductors. The chart is based on a maximum 3% voltage drop in an aluminum underground service cable for a 120/240 volt service. For other voltages, cables or multiple cables consult an electrician.
13. A marker tape shall be installed, above the conduit, 12 inches below grade. Type USE cable shall be marked or listed sunlight resistant.
14. A side bus bar meter socket is required if 350MCM cable is used.
15. URD Service Risers, from a pole-mounted three-phase transformer bank, shall be limited to an 800 amp rating. Larger services shall be supplied by a padmounted transformer.
16. Member must provide sufficient cable to reach the transformer or secondary cable and to make connections.

# REQUIRED MATERIALS FOR MEMBER OWNED SECONDARIES

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**NOTE: Meter sockets shall be supplied with a breaker**

## **\_\_\_\_\_100-amp service – underground – meter on pole**

- 2" electrical PVC schedule 80 – 3 to 4 ten-foot lengths (depends on pole height)
- 2" weatherhead PVC
- 1/0 URD cable
- UL approved meter socket or meter socket & breaker
- 2" Hub
- 2" Steel locking ring
- 2" Bushing
- (2) 2" PVC male adaptors (1 top and & 1 bottom)
- 2" Slip joint/frost sleeve – PVC schedule 80
- 2" 90 degree elbow – PVC schedule 80

## **\_\_\_\_\_100-amp service – underground – meter on house**

- 2" electrical PVC schedule 80 – 3 to 4 ten-foot lengths (depends on pole height)
- 2" weatherhead PVC
- 1/0 URD cable
- 2" Slip joint/frost sleeve – PVC schedule 80
- 2" 90 degree elbow – PVC schedule 80

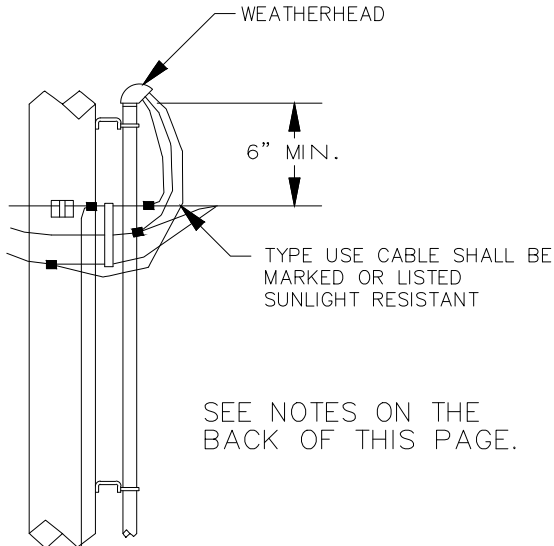
## **\_\_\_\_\_200-amp service – underground – meter on pole**

- 2" electrical PVC schedule 80 – 3 to 4 ten-foot lengths (depends on pole height)
- 2" weatherhead PVC
- 4/0 URD cable
- UL approved meter socket or meter socket & breaker
- 2" Hub
- 2" Steel locking ring
- 2" Bushing
- (2) 2" PVC male adaptors (1 top and & 1 bottom)
- 2" Slip joint/frost sleeve – PVC schedule 80
- 2" 90 degree elbow – PVC schedule 80

## **\_\_\_\_\_200-amp service – underground – meter on house**

- 2" electrical PVC schedule 80 – 3 to 4 ten-foot lengths (depends on pole height)
- 2" weatherhead PVC
- 4/0 URD cable
- 2" Slip joint/frost sleeve – PVC schedule 80
- 2" 90 degree elbow – PVC schedule 80

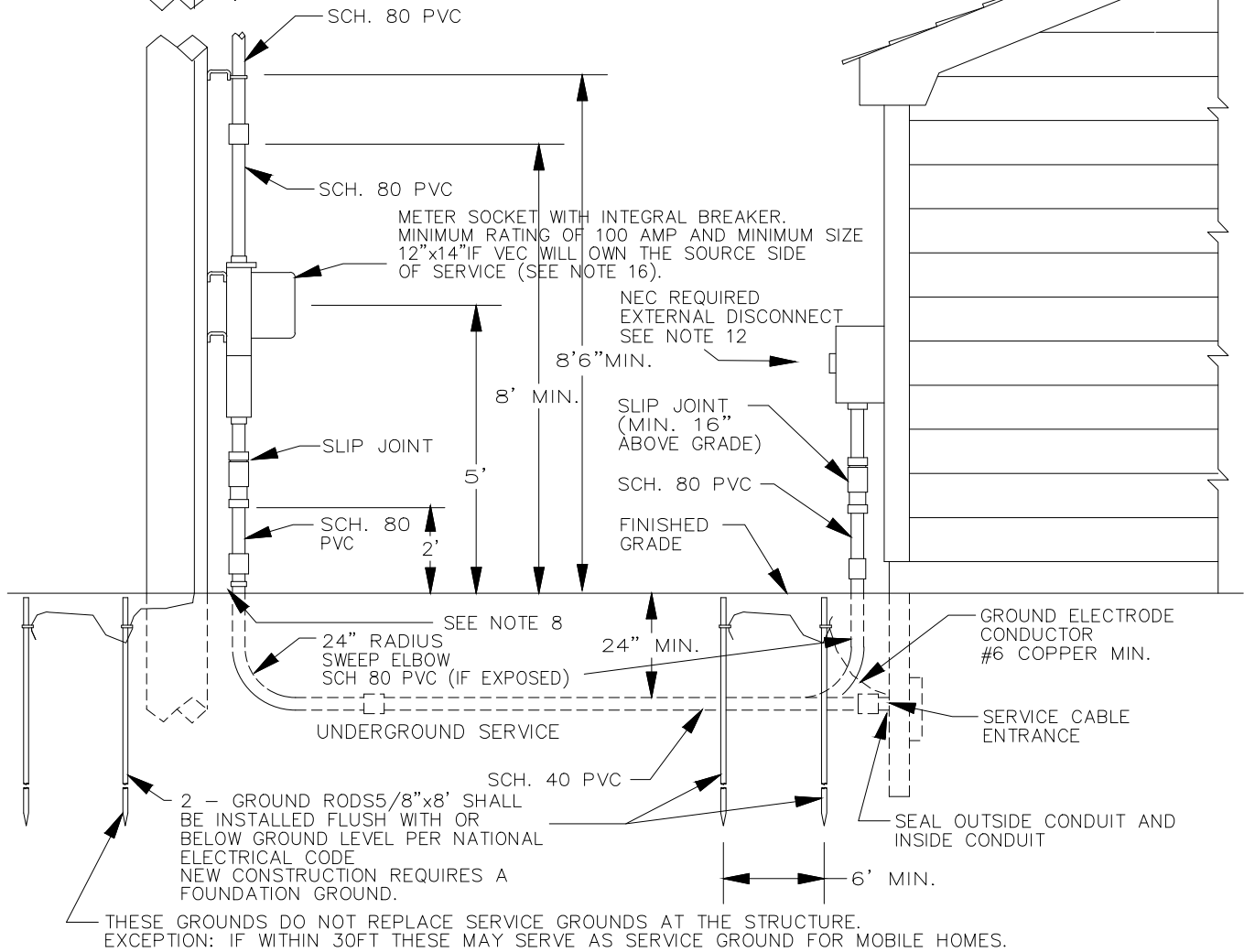
# POLE METERING




RESIDENTIAL SERVICES ONLY			
RATING	CABLE LENGTH*	TRIPLEX SIZE	CONDUIT
100 A	0-210 FT.	1/0	2 1/2"
	211-410 FT.	4/0	2 1/2"
	411-650 FT.	350 MCM	3"
150 A	0-275 FT.	4/0	2 1/2"
	276-435 FT.	350 MCM	3"
200 A	0-205 FT.	4/0	2 1/2"
	206-325 FT.	350 MCM	3"

\* Cable Length is the total of trench and riser lengths. This chart does not indicate that the cable can be pulled into conduits of these lengths. Pulling tension calculations are necessary to make that determination.

SEE NOTES ON THE BACK OF THIS PAGE.



REV	DATE	REVISION DESCRIPTION	DRN	CKD

	VERMONT ELECTRIC COOPERATIVE INC.	
	JOHNSON, VT	
POLE METERING		
DES: DRN: CB	CKD: SCALE: NONE	DWG. NO. 202 Page 1
DATE: 07/10/2017		REV <span style="border: 1px solid black; padding: 2px;">1</span>

# POLE METERING

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## Notes:

1. All wiring and materials shall conform to the requirements of the National Electric Code (NEC) and to any applicable local codes. Where conflict exists the more stringent code will apply. For member owned equipment, any requirements in excess of code specified minimums, are recommended not required.
2. This specification covers residential services. Commercial service equipment is under the jurisdiction of the electrical inspector. The cable sizes shown in the chart may not apply to commercial services.
3. The location of the conduit risers and the meter socket will be designated by a VEC representative. Any relocation shall be approved by a VEC representative.
4. Locate the riser conduit at the pole shall be designated by a VEC representative.
5. All meter sockets on services requiring large capacity (greater than 200amps) shall have a manual bypass with locking jaw device.
6. The grounding electrode conductor, from the main disconnect, to a driven ground, shall be a minimum of #6 copper. The conductor shall be adequately protected. The driven grounds shown shall be a minimum of 5/8" in diameter and 8' long.
7. Any steel conduit within 18" of the surface shall be bonded. Steel conduit is not required.
8. Any construction, at the pole, above ground level, shall be done by VEC. Exception: The member may install that portion of their equipment that can be reached while standing on the ground. Any trench near the base of the pole shall be immediately backfilled and properly tamped. Any construction, at the pole, required by the member will be approved by a VEC representative.
9. For primary depths shallower than 36" may be allowed where obstructions such as ledge are encountered. Any portion of conduit shallower than 24" shall be covered by a minimum 6" concrete cap. Contact VEC for additional requirements for conduit buried near underground facilities, under driveways or roadways, or, for depths shallower than 12".
10. For secondary, depths shall be a minimum of 24"
11. All gas valves shall be a minimum of 10 ft from electric meter equipment. For clearances less than 10 ft see NFPA 58.
12. The Service Disconnecting Means for one and two family dwelling units per the NEC section 230.85 must be located in a readily accessible outdoor location and be marked per the NEC requirements.
13. The chart shows the acceptable total cable length for given service amp ratings and conductors. The chart is based on a maximum 3% voltage drop in an aluminum underground service cable for a 120/240 volt service. For other voltages, cables or multiple cables VEC. The chart is a recommendation, rather than a requirement, in the case of pole metering. However, failure to follow these recommendations can cause damage or malfunction of the customer's equipment. VEC does not accept any liability for loss or damage incurred as a result of said failure and the customer proceeds at his/her own risk. The conduit attached to the pole shall meet the chart's size for the cable chosen by the customer. The cable size shall, at a minimum, meet the capacity of the customer's disconnect.
14. A marker tape shall be installed, above the conduit, 12 inches below grade. Type USE cable shall be listed or marked sunlight resistant.
15. The decision to allow pole metering is solely at the VEC's discretion. The pole shall be in a location that is protected from pedestrian and vehicular traffic. The pole shall be in a location that is convenient for meter reading. The pole shall not be encumbered with equipment, primary taps or other risers, that make future pole replacements difficult. Pole metering is not available for members with multiple service rates, or, for members with time-of-day rates controlled by a relay in the meter.
16. VEC requires that the member install an integral breaker/meter socket. The purpose of the breaker is to allow the member to maintain their underground service without an expensive linecrew visit.