



SERVICE ENTRANCE - OVERHEAD

Single & Three Phase
100, 200, & 320/400 Amp

10-01-18
ER 19-240-M
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USE: Arrangement of service equipment to supply electric energy to an overhead, outdoor, self contained meter installation.

PREVIOUS REVISION
04-01-17

ORIGINATED
03-94

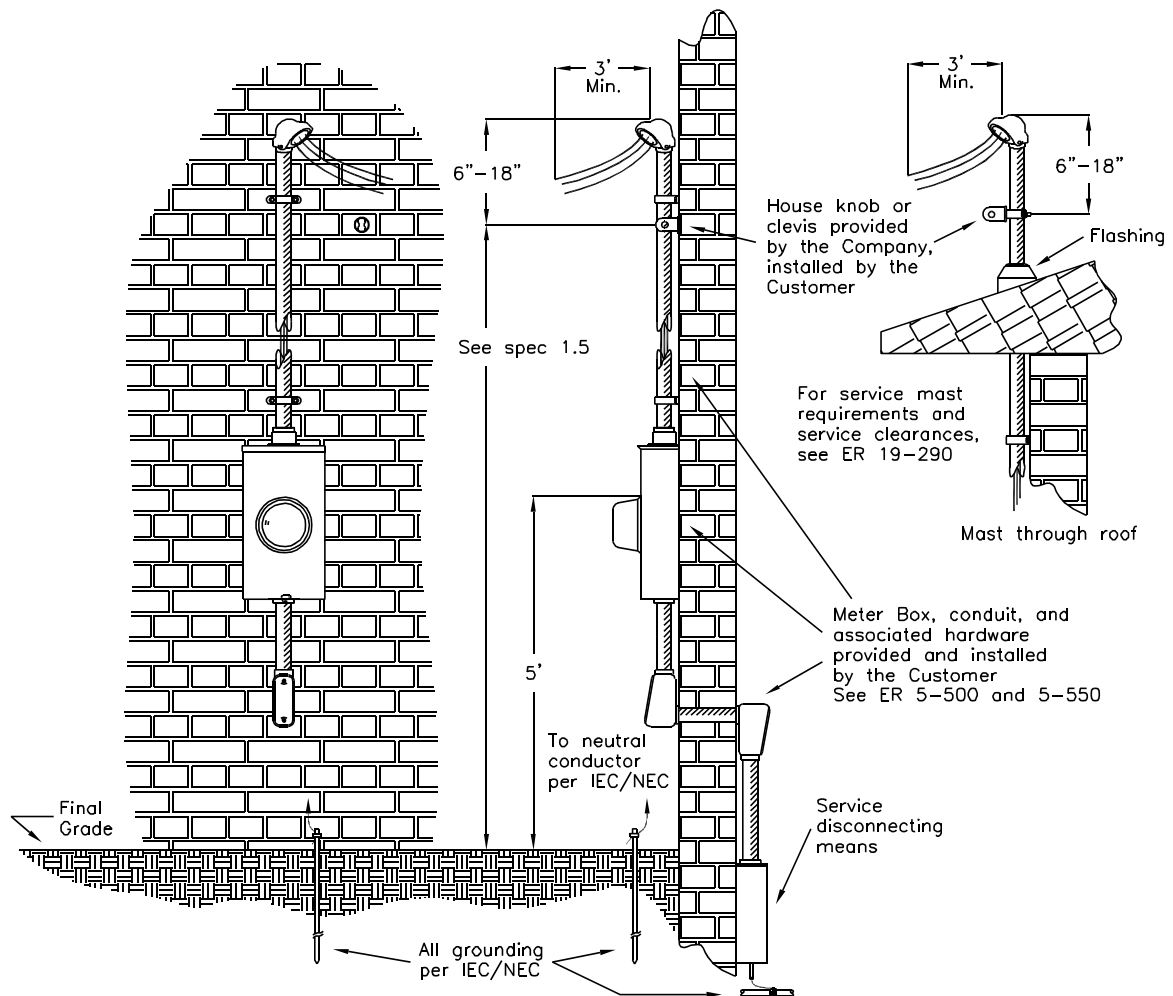
PREVIOUS NUMBER
ER 1-160-A(08-01-89) ER 19-730-A (11-15-94)
ER 19-740 (03-21-94) ER 19-745 (03-21-94)

LATEST REVISION: Updated Specifications to note Customer's responsibilities and identified typical wiring for 100/200 Amp Sockets. Added note about "Approved Meter Sockets".

REFERENCE: Indiana Electrical Code / National Electrical Code (IEC/NEC), latest revision
ER 5-500, 5-550, 7-500, 13-230, 19-290, latest revision
UL 414, latest revision
ANSI C12.7, latest revision

SPECIFICATION:

TYPICAL OVERHEAD INSTALLATION



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1. GENERAL:

- 1.1 Residential electric and gas meters should both be located on the same side of the home within the front 1/3 to aid meter reading, testing and service, and to aid emergency response in the event of a fire or some other hazardous condition.
- 1.2 This installation is to conform with the Rules and Regulations of any recognized legal inspection service in effect in the community and satisfactory to the Company.
- 1.3 All wiring and equipment for the overhead service entrance shall be owned, installed and maintained by the Customer.
- 1.4 The meter installation shall be level and securely mounted to a substantial building, pole or other type mounting structure satisfactory to the Company.
- 1.5 The placement of the house knob or clevis shall be such that it provides proper clearances for the service drop. (see ER 19-290)
- 1.6 Bonding bushings and jumpers shall be used to maintain electrical continuity to service equipment enclosures when the entire concentric knockout is not removed.
- 1.7 The service disconnecting means shall be installed at a readily accessible location nearest the point of entrance of the service entrance conductors.
- 1.8 For grounding refer to ER 7-500 and the latest revision of IEC/NEC.



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1.9 Conduit & Conductor Recommendations:

Service Size	Service Entrance			
	Conduit (per IEC/NEC)	Service Entrance Conductors (See Notes below)		Grounding (Cu Only)
		Residential 1φ 3W 120/240V	All Other Services	
100 Amps	1 ½ or 2 Inch	#4 Cu	#3 Cu	#8
		#2 Al	#1 Al	
200 Amps	2 Inch	2/0 Cu	3/0 Cu	#4
	2 ½ Inch	4/0 Al	250 KCM Al	
320/400 Amps	3 Inch	400 KCM Cu	500 KCM Cu	1/0
	3 ½ Inch	600 KCM Al	700 KCM Al	

Note: Approved service entrance cable, with weather-proof fittings, may be used between socket and the general service disconnect, where permitted by local authority.

All recommendations for conductor sizes assume a 75°C temperature rating. Larger conductor sizes may be necessary if lower temperature ratings exist. Refer to IEC/NEC 310-16 for proper conductor sizes, in this case.

The following are the recommended insulation types, based on 75°C minimum temperature rating: RH, RHH, RHW, THHW, THW, THWN, THHN, XHHW, USE.

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- 1.10 All meter sockets shall meet the following specifications, unless otherwise stated below.
- 1.10.1 Meter sockets shall be designed for use with standard detachable type watt-hour meters.
 - 1.10.2 Sockets shall meet the requirements in AEIC, EEI, NEMA Standards for watt-hour meter sockets.
 - 1.10.3 Meter sockets shall have a swing style latch, which will accept padlock or wire style seal.
 - 1.10.4 Meter sockets shall be made of aluminum alloy or galvanized steel.
 - 1.10.5 Meter sockets shall be of the ringless type.
 - 1.10.6 Meter sockets shall be UL listed.
 - 1.10.7 Meter sockets shall be provided with concentric knockouts in the back, sides and bottom.
 - 1.10.8 All by-passes shall be of the manual, horn or lever type, so arranged that the meter socket cannot be sealed with the by-pass on.
 - 1.10.9 Meter sockets shall be provided with a grounding connector for a #6 conductor.
 - 1.10.10 Meter sockets shall be plainly marked with the manufacturer's name, catalog number and electrical ratings.

2. **4 JAW - 100 & 200 AMP:**

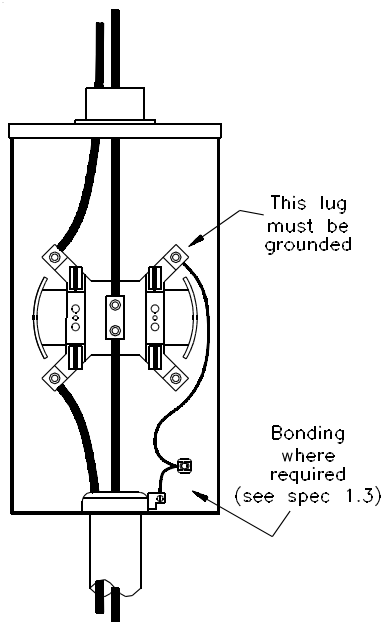
2.1 Used for the following services:

- 2.1.1 120 volt, 1 phase, 2 wire
- 2.1.2 120/240 volt, 1 phase, 3 wire

2.2 **Approved Sockets:**

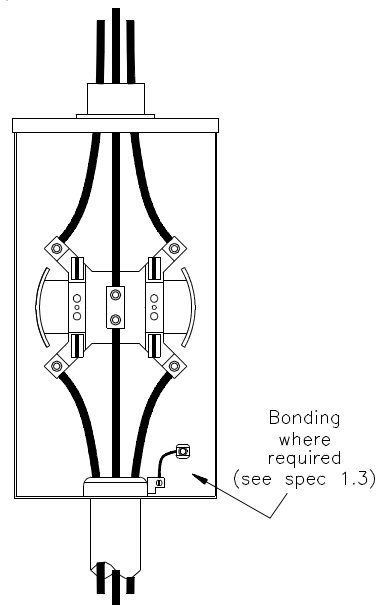
2.2.1 Any socket which meets the specifications in 1.10 above, and rated for 100 or 200 amps.

Typical wiring for 2 wire installation



100a, 120v, 1ph, 2w

Typical wiring for 3 wire installation



100/200a, 120/240v, 1ph, 3w

ONLY APPROVED METER SOCKETS AS NOTED IN THE SECTIONS BELOW WILL BE ALLOWED IN NIPSCO SERVICE TERRITORY.

3. Optional 4 JAW - 100 & 200 AMP Meter Socket:

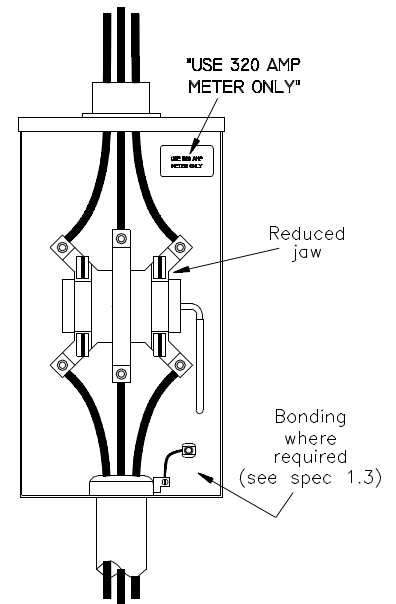
- 3.1.1 Optional Milbank Universal All-In-One Meter Main which has a disconnect and breaker positions built in.
- 3.1.2 Approved for use:

Milbank	Catalog Number
100 Amp	U5168-XTL-100-KK
200 Amp	U5168-XTL-200-KK

4. 4 JAW - 320/400 AMP:

- 4.1 Used for the following services:
120/240 volt, 1 phase, 3 wire
- 4.2 Approved Sockets:
 - 4.2.1 Sockets shall meet all specifications in 1.10 above.
 - 4.2.2 The right line side location of the 320 amp socket box shall be provided with a reduced jaw.
 - 4.2.3 Meter sockets shall be supplied with a label designating "Use 320 Amp Meter Only".
 - 4.2.4 Bypass shall be of the manual, jaw release, lever type.
 - 4.2.5 Approved for use:

Manufacturer	Catalog Number
Landis & Gyr	47604-01NI Type HQ-4SUT
Milbank	U1779-RRL
	U5890-X-2/200-BL (See Note 8.1)
	U5059-X-2/200-K3L (See Note 8.1)
Durham	UT-H4309



320/400a, 120/240v, 1ph, 3w

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5. 5 JAW - 200 AMP:

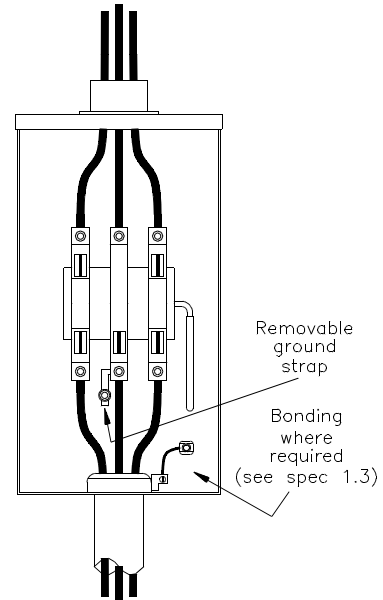
5.1 Used for the following services:

- 5.1.1 240 volt, 3 phase, 3 wire (B phase grounded)
- 5.1.2 120/208 volt, 1 phase, 3 wire (contact Local Operating Office for information)

5.2 Approved Sockets

- 5.2.1 Sockets shall meet all specifications in 1.10 above.
- 5.2.2 Sockets shall be provided with a removable ground strap on the fifth jaw.
- 5.2.3 Bypass shall be of the manual, jaw release, lever type.
- 5.2.4 Approved for use:

Manufacturer	Catalog Number
Landis & Gyr	40005-01QG
Milbank	U9550-RL
	U5168-XTL-200-KK-5T (See Note 8.2)
Durham	UT-H5203...



200a, 240v, 3ph, 3w

6. 7 JAW - 200 AMP:

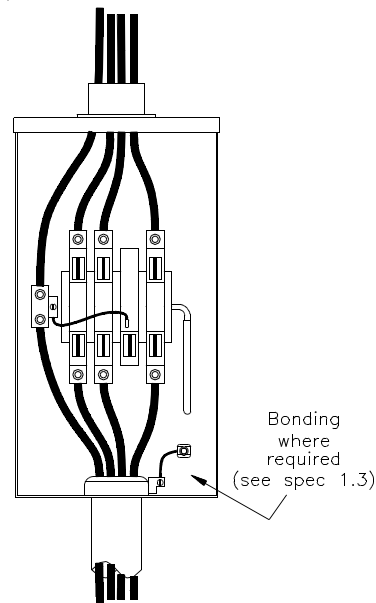
6.1 Used for the following services:

120/208 volt, 3 phase, 4 wire

6.2 Approved Sockets:

- 6.2.1 Sockets shall meet all specifications in 1.10 above.
- 6.2.2 Sockets shall be provided with a strap to connect the neutral to the socket ground jaw.
- 6.2.3 Bypass shall be of the manual, jaw release, lever type.
- 6.2.4 Approved for use:

Manufacturer	Catalog Number
Landis & Gyr	40007-01QG
Milbank	U9700-RRL
Durham	UT-H7203...



200a, 120/208v, 3ph, 4w

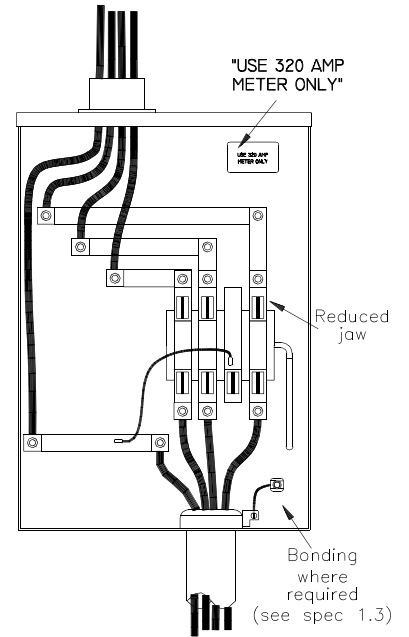
7. 7 JAW - 320/400 AMP:

7.1 Used for the following services:
120/208 volt, 3 phase, 4 wire

7.2 Approved Sockets:

- 7.2.1 Sockets shall meet all specifications in 1.10 above.
- 7.2.2 The right line side location of the 320 amp socket box shall be provided with a reduced jaw.
- 7.2.3 Meter sockets shall be supplied with a label designating "Use 320 Amp Meter Only".
- 7.2.4 Bypass shall be of the manual, jaw release, lever type.
- 7.2.5 Approved for use:

Manufacturer	Catalog Number
Landis & Gyr	44707-02
Milbank	U2594-X-K7



320/400a, 120/208v, 3ph, 4w

8. NOTES:

- 8.1 Optional socket for 120/240 volt, 1 phase, 3 wire, 320 Amp. Has 2-200 Amp main disconnects built in enclosure. Hubs ordered separately.
- 8.2 Optional socket for 120/208 volt, 1 phase, 3 wire 200 Amp. Has main disconnect and breaker positions built in enclosure. Hubs ordered separately.