SPECIAL APPLICATIONS

Table of Contents - Section 1200

PARAGRAPH/DRAWING		PAGE
1200.0	**SPECIAL APPLICATIONS FOR METERING AND SERVICE EQUIPMENT**	**1**
1200.1	GENERAL	1
1201.0	**TRAFFIC SIGNAL, INTERSECTION AND HIGHWAY SERVICE EQUIPMENT**	**2**
1201.1	METERED LOCATIONS	2
1201.2	UNMETERED LOCATIONS	2
1201.3	COMBINATION METERED AND UNMETERED LOCATIONS	3
1201.4	MAINTAINENCE AT INTERSECTIONS	3
1201.5	CONTROLLED ACCESS AREA FENCING REQUIREMENTS	3
1202.0	**UNMETERED SERVICE REQUIREMENTS**	**4**
1202.1	TYPICAL UNMETERED SERVICE	4, 5
1202.2	CUSTOMER-OWNED DUSK-TO-DAWN LIGHTING	6, 7

1200.0 SPECIAL APPLICATIONS

1200.1 GENERAL

The information and specifications included herein cover conductors and equipment connecting the APS electrical supply system to the Customer's premises. Subjects relative to this service are also presented for the mutual interest of the Customer and his representatives. **It is not a complete set of rules governing the installation of electrical wiring and equipment.**

These requirements are supplementary to and are not intended to conflict with the currently applicable National Electrical Safety Code, National Electrical Code, Municipal, County or State Codes, Ordinances or Regulations within the State of Arizona.

On new installations, or where changes necessitate relocating or replacing the service equipment, or when an installation has been disconnected by APS or the Fire Department because of fire or other damage, **APS shall not energize or restore service until the wiring has been approved and proper notification given to APS by the inspection authorities where such inspection is required.**

In areas where local inspection is not required, the service entrance including grounding and bonding shall be in accordance with APS requirements and the National Electrical Code. The above equipment shall be inspected and approved by an APS representative prior to service being energized.

1201.1 METERED LOCATIONS

A) Metering equipment shall be located in a readily accessible location outside of the “controlled access” area of highway crossings or intersections. (See Figure 1, Paragraph 1201.5)

B) If fencing is required around the front of the metering equipment, there shall be two gates, one in front with an APS lock and one in the rear with a Customer lock. (See Figure 2, Paragraph 1201.5)

C) Metering equipment shall be either:

1) a “EUSERC” and APS approved non-residential metering pedestal with safety test-bypass and the top and sides of the meter cover panel hinged. (Meter height tobe per Section 300, Paragraph 302.2)

- or -

2) a “EUSERC” and APS approved non-residential “all-in-one” safety test-bypass can, mounted to the outside of the control cabinet. (Meter height to be per Section 300, Paragraph 302.2) The conduit riser shall be a minimum 2-1/2 inch rigid steel or Sch 80 PVC and shall be installed on the exterior of the control cabinet.

- or -

3) a “EUSERC” and APS approved non-residential “all-in-one” safety test-bypass can, mounted to the traffic signal pole. (Meter height to be per Section 300, Paragraph 302.2) Meter shall not face traffic. Conduit riser shall be a minimum 2-1/2 inch rigid steel or Sch 80 PVC and shall be installed on the exterior of the pole.

D) APS shall supply 120/240 Volt, 1ø 3 Wire service as it’s standard service.

E) APS shall approve the meter location and shall instruct the Customer where the “source” of service will be.

F) The Customer shall install conduit system to APS requirements. (See Sections 500 and 600)

G) APS shall pull service conductors from the “source” all the way to the metering equipment.

H) Each location shall be identified with a permanent address tag per Section 300, Paragraph 302.1.

1201.2 UN-METERED LOCATIONS

A) The APS “point-of-service” shall be an APS supplied, Customer installed J-Box. (See Paragraph 1202.1-1,2)

B) APS shall specify J-Box type and location.

C) The Customer shall install conduit system to J-Box, and pull wires from control cabinet to the J-Box.

D) APS shall make the connections in the J-Box.

E) If J-Box “source” will be a transition pole, Customer shall extend conduit to pole location and install an approved sweep, extend conduit a minimum of 6 inches above finished grade and cap it. (See Section 500, Paragraph 502.12-1,2)

F) Standard service voltage provided shall be 120/240 Volt, 1ø 3 Wire. A 240/480 Volt 1ø 3 Wire is available for “non-standard” applications, **un-metered service only.**

G) Each location shall be identified with a permanent address tag per Section 300, Paragraph 302.1. (Attached to controller cabinet.)

1201.3 COMBINATION METERED/UN-METERED LOCATIONS:

A) Metered and un-metered services **shall not occupy the same conduit or meter can.**

B) The APS “point-of-service” for the un-metered service shall be an APS supplied, Customer installed J-Box. For the metered service, the “point-of-service” shall be the meter can or pedestal.

C) APS shall specify J-Box type and location.

D) Two separate conduit systems shall be installed by the Customer. One from the J-Box to the meter can for the metered service and one from the J-Box to the control cabinet/disconnect for the un-metered service.

E) APS shall install wire from the J-Box to the meter can for the metered service.

F) The Customer shall install wire from the J-Box to the control cabinet/disconnect for the unmetered service.

G) Meter locations and equipment shall meet all requirements listed in Paragraphs 1201.1 and 1201.2.

1201.4 MAINTENANCE AT INTERSECTIONS

A) APS shall notify ADOT, appropriate local City personnel and local Police Department before any outages at intersections.

B) The Customer shall notify APS of any changes to load at un-metered locations that will affect flat-rated billing.

1201.5 CONTROLLED ACCESS AREA FENCING REQUIREMENTS

FIGURE 1

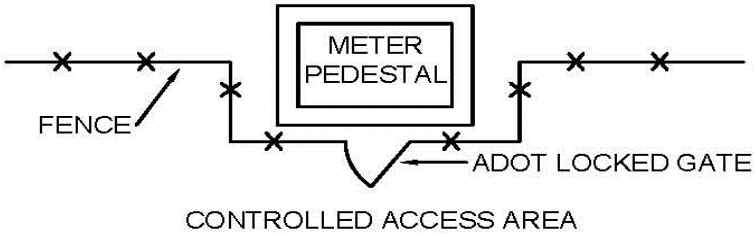
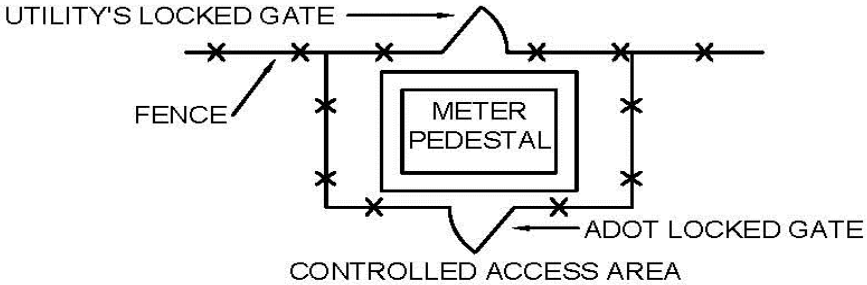
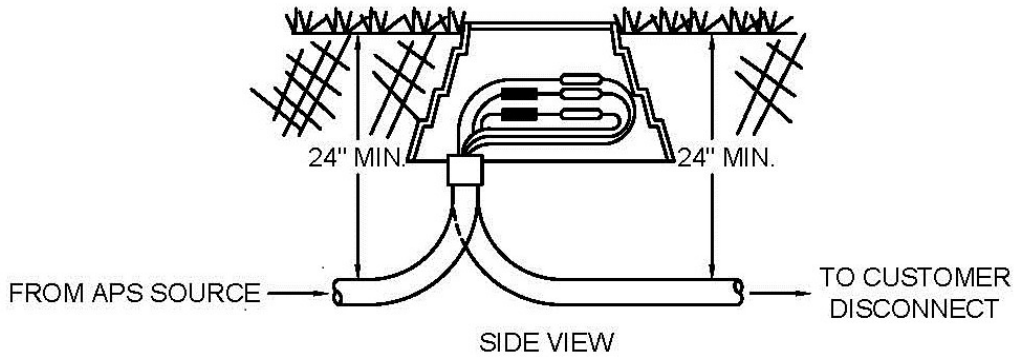


FIGURE 2

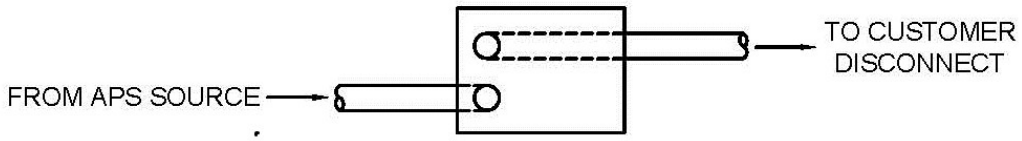


1202.0 UN-METERED SERVICE REQUIREMENTS

1202.1 TYPICAL UN-METERED SERVICE (For metered installations, see Section 500 Paragraph 506.7)
15 AMP MAXIMUM, 120V 1ø 2 WIRE OR 120/240V 1ø 3 WIRE, CONSTANT LOAD:



SIDE VIEW



TOP VIEW

NOTES:

1. Installation shall be per NEC and approved by local jurisdiction having authority.
2. Customer disconnect is required per NEC, also requires permanent ID tag.
3. Installation shall be an all conduit system with a minimum size 1 inch conduit. A 12" radius sweep is acceptable for 1" conduit.
4. See Section 500, Paragraph 502.0 for requirements for conduit system.
5. See Section 500, Paragraph 501.4 regarding coating required on steel conduit below grade.
6. Before digging or driving ground rod, be sure to call Blue Stake to get location of underground facilities. (See Section 100, Paragraph 100.12)
7. 5/8" x 8' ground rods to be installed at customer disconnect location. Rod must be 8' in the ground.
8. A #6 minimum copper ground wire is to be required for the ground rod connection.
9. Access shall be provided to J-box, with a minimum of 3 feet working clearance required in front of at least two adjacent sides of box.

1202.1-2 TYPICAL UNMETERED SERVICE (For metered installations, see Section 500, Paragraph 506.7)

15 AMP MAXIMUM, 120V 1ø 2 WIRE OR 120/240V 1ø 3 WIRE, CONSTANT LOAD:

10. Customer to extend conduit to an APS supplied, Customer installed J-box. APS shall specify J-box type and location. Customer to install J-box per APS specifications. (See local representative)
11. J-boxes shall not be installed in areas exposed to vehicular traffic.
12. Customer to install conductors to APS J-box. APS to terminate service in box.
13. APS provided and installed fuses shall be required at J-box terminations. APS “Point-of-Delivery” shall be the fused connection in the J-box.
14. For conduit system design between the J-box and the APS source, see Section 500 Paragraph 502.12-1 and 502.12-2

FIGURE 1 - POLE MOUNTED

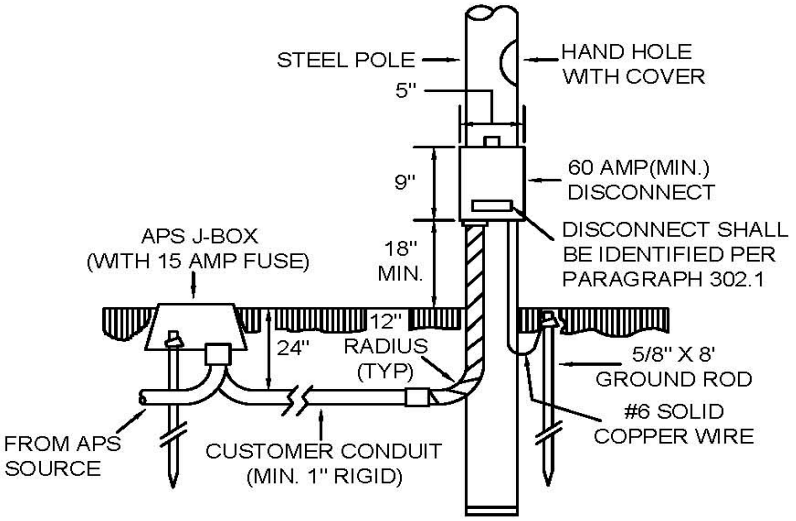


FIGURE 2 - STAKE MOUNTED

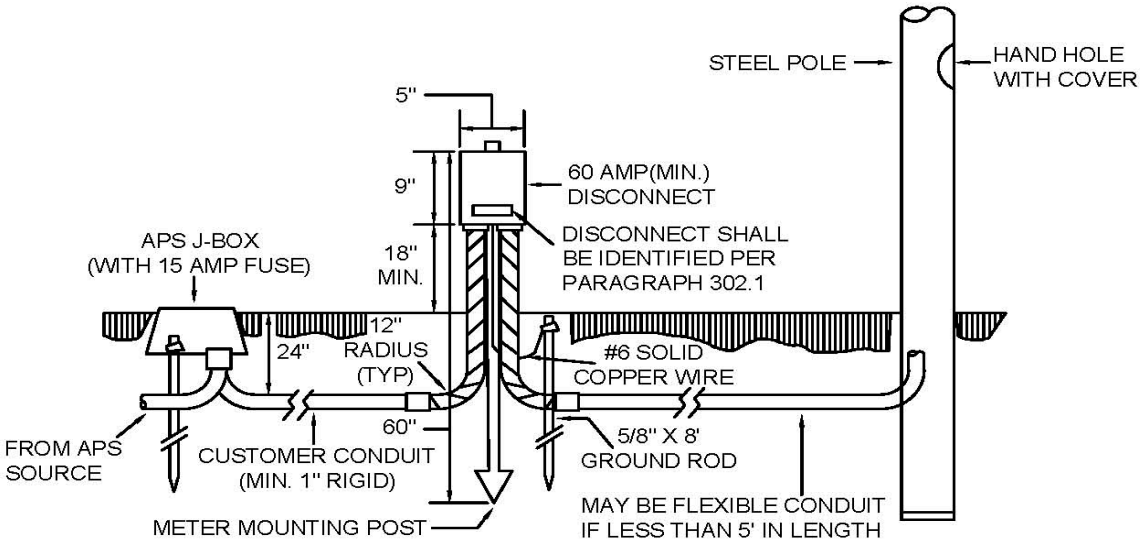
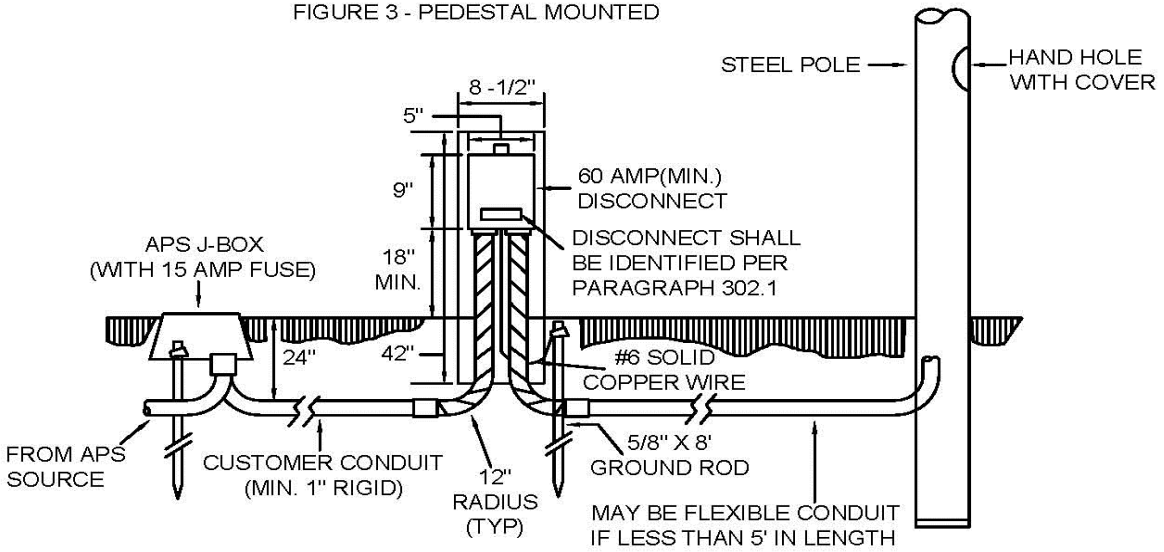


FIGURE 3 - PEDESTAL MOUNTED



NOTES:

1. Pole location must be accessible to Company maintenance vehicles
2. Customers shall install service disconnect with over-current protection. The disconnect may serve more than one fixture or pole.
3. Customer shall install 5/8 inch by 8 foot copper clad ground rod and connect to the service disconnect with a #6 solid copper conductor.
4. Customer shall bond all non current carrying parts at the service entrance.
5. Company shall install conductors to the utility junction box 15amp maximum fuses.
6. Customer to provide and install all materials beyond the utility junction box.
7. Installation requires city or county inspection and clearance prior to Company connections.
8. Minimum 1" galvanized steel riser with 12 inch radius sweep required. (Rigid or IMC) See Section 500, Paragraph 501.4 regarding coating requirements on steel conduit below grade. See also Paragraph 502.0 for additional requirements for conduit, and Section 600 for Trenching Requirements.
9. Before digging or driving ground rod, be sure to call Blue Stake to get underground facilities located. (See Section 100, Paragraph 100.12)
10. Fixture requirements: Luminaire Style – any meeting the following requirements:
    Voltage: 120 or 240 Volt1 Phase
    Ballast: Lag or High Reactance, normal Power Factor

LOW PRESSURE SODIUM	**HIGH PRESSURE SODIUM**
55 WATT – 8,000 LUMENS	70 WATT – 5,800 LUMENS
90 WATT – 13,500 LUMENS	100 WATT – 9,500 LUMENS
135 WATT – 22,500 LUMENS	150 WATT - 15,000 LUMENS
180 WATT – 33,000 LUMENS	250 WATT – 30,000 LUMENS
	400 WATT – 50,000 LUMENS

11. Fixtures and fixture height must meet local city ordinances and state " Dark Sky" ordinance requirements
12. A Junction box is requires at each point of service.