



Maricopa County

Planning & Development Department

Department Directive

Department Directive:
DD-2012-13

Supersedes: DD-2000-85
DD-2001-20
DD-2004-11

Effective: Immediately

Initiator: TE

Director: *Jay Rich*

PURPOSE: To clarify and explain requirements for electrical services

REFERENCES:

2009 International Residential Code, Section E3601.2
2008 National Electrical Code, Articles 230 and 550
Arizona Administrative Code R4-30-302
Department Directive DD-2004-01

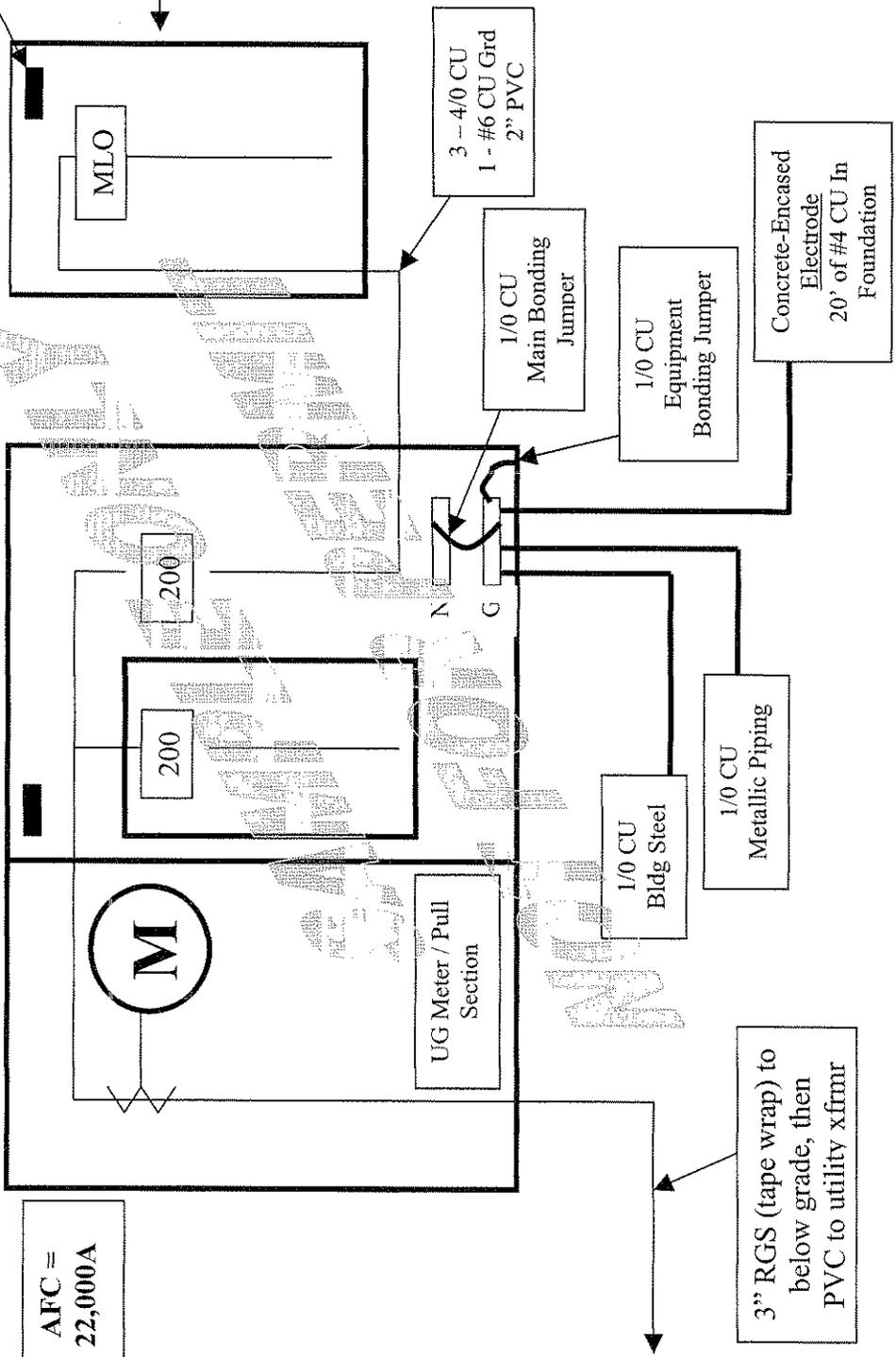
POLICY/PROCEDURE:

1. Only one electrical service is allowed per building or property unless otherwise approved by the Building Official. Section E3601.2 of the 2009 International Residential Code states "One- and two-family dwellings shall be supplied by only one service." **Note:** APS and SRP will allow electrical service to any property and/or a second electrical service as a commercial service, if approved by the Building Official.
2. No electrical service will be permitted on a property without an established principal permitted use. Department Directive DD-2004-01 (Electrical Service to Shared Wells) requires establishment of a principal permitted use in order to obtain electrical service for a shared well. For purposes of electrical service, the keeping of horses or a corral or fence do not constitute establishment of a principal permitted use that warrants an electrical service.
3. No permit will be approved for an electrical service sized greater than needed for the established principal permitted use unless otherwise approved by the Building Official.
4. Electrical service equipment must be installed on permitted buildings and not permanently located on poles or power pedestals except as follows:
 - a. Electrical service equipment, listed and labeled for use on mobile homes, modular housing or manufactured housing, which is factory installed, shall be located adjacent to the building per National Electrical Code Article 550.
 - b. An electrical service pedestal, which is listed and labeled as suitable for use as service equipment for other than a mobile home, rated for the use, designed to be free standing, and which is permanently mounted on a concrete pad may be used for electrical service if approved by the Building Official.
5. Applications for electrical service permits shall include application forms, site plans (if needed), and floor plans showing the location of the new electrical service and panel and including any electrical outlets, fixtures and equipment inside and outside the building. Applications that include more work than just the electrical service shall be processed as alteration permits.
6. For electrical services 400 amperes and over, applications for permit shall include an Electrical One Line Diagram and Electrical Load Calculations as shown on the attached examples. For electrical services over 600 amperes, those plans shall be sealed by an Arizona Professional Registrant. The Arizona Administrative Code R4-30-302 states "A registrant shall prepare and submit drawings and specifications for new electrical system or an addition or modification to an existing electrical system provided the service and associated electrical feeders exceeds 600 amperes 120/240 volts, single phase or 225 amperes 120/208 volts, three phase and the fault current exceeds 10,000 amperes."

New Panel "B" - 200Amp
 120/240V - 1PH - 3 Wire
 NEMA 1 Series Rated
 AFC = 18,560

New "SES" - 400 AMP
 120/240V - 1PH - 3 Wire NEMA 3R
 Series Rated System - 22K/10K AIC

AFC =
 22,000A



Typical Series
 Combination System
 Ratings Plaque

Sub-panel within
 same building
Isolated Neutral

3" RGS (tape wrap) to
 below grade, then
 PVC to utility xfmr

3 - 4/0 CU
 1 - #6 CU Grd
 2" PVC

1/0 CU
 Main Bonding
 Jumper

1/0 CU
 Equipment
 Bonding Jumper

Concrete-Encased
 Electrode
 20' of #4 CU In
 Foundation

1/0 CU
 Bldg Steel

1/0 CU
 Metallic Piping

NOTE

Submit load calculations along
 with one-line diagram

Installation or modification of
 Services of 600 amps or larger
 require one-line diagram and load
 calculations which are sealed by
 an Arizona Engineer.

Additional electrical plans or
 calculations may be required.

ELECTRICAL ONE-LINE DIAGRAM - Not To Scale

ELECTRICAL LOAD CALCULATIONS – Dwelling Unit

WATTS

Sq. Feet Livable _____ x 3watts	=	_____
Appliance Circuits (2 Min.) _____ x 1500w	=	<u>3,000 TYP</u>
Laundry Circuit	=	<u>1,500 TYP</u>
Ranges / Other Cooking Appliances	=	<u>8,000 TYP</u>
Fixed Appliances (Dishwasher, Etc)	=	_____
Water Heaters	=	_____
Clothes Dryers	=	<u>5,000 TYP</u>
 Sub-total of “Other Load”	 =	 _____
 1 st 10kVA of “Other Load” at 100%	 =	 <u>10,000</u>
Remainder at 40%	=	_____
 Total of “Other Load”	 =	 _____
 A/C or Heating Load at 100%	 =	 _____
Other motor loads (spa, pool, etc at 100%)	=	_____
Other buildings fed from this service (garage, barn, etc at 100%)	=	_____
 Total Calculated Load	 =	 _____
 Total watts divided by _____ volts	 =	 _____ Amps

Notes: The values given above are for this residential example only.
Actual loads for a given project must be entered.
Total amps of 400 or greater require the submittal of a one-line diagram
and may require an Arizona registered engineer’s seal.