

RESIDENTIAL ELECTRICAL PLAN

Drawings must be neat, organized and legible (min 1/8" lettering)
Specify each scale used;

- Detail 3/4" = 1'

Construction drawings shall be drawn upon suitable material and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed, R106.1.1

Electrical work shall comply with the 2006 IRC chapters 33-42 (based on 2005 NEC)

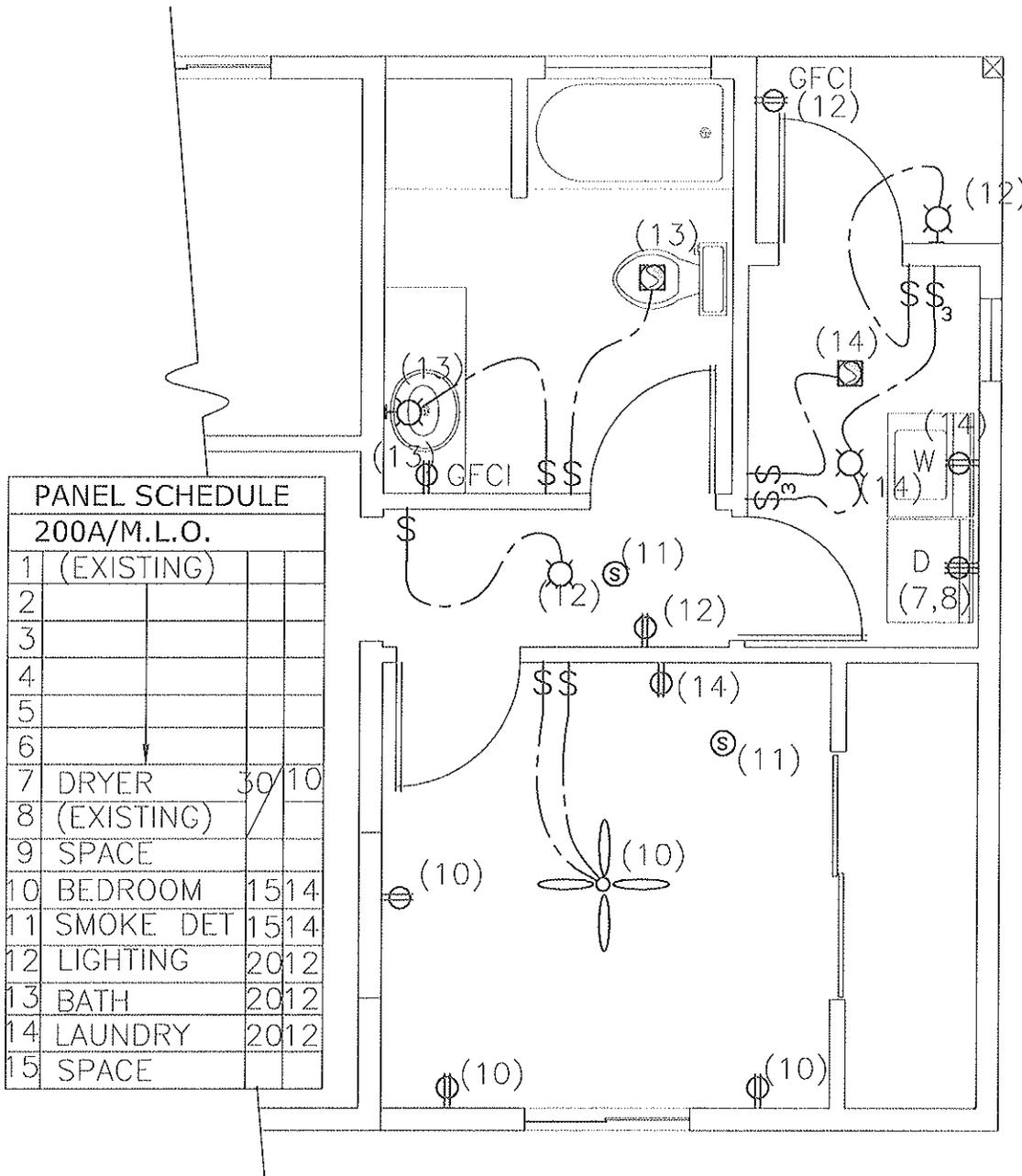
- Provide an electrical riser diagram with grounding method and bonding to metallic piping; E3303 and E3507. Show and underground service entrance on the riser diagram
- Gas lines shall not be used as the primary grounding method; E3508
- Provide riser diagrams for sub-panels with feeder conductors, conduit sizes and over-current protection with appropriate correction factors; E3605.5
- Electrical drops over buildings must meet service standards; E3504.2
- Provide electrical load calculations for determining the service panel size; E3502.2
- Provide feeder load calculations for sub-panels (40% demand factor may not be applied); E3604.3
- Provide a panel schedule: panel size, circuit numbers, ampacity and wire sizes; E3304.11, E3606.2
- Use table E3602.13 for sizing 15, 20 & 30 AMP branch circuit conductors
- Use table E3605.1 (60 degree C column) for sizing branch circuits and conductors rated <100 amps
- For single-family dwellings, the service shall not be rated less than 100 amperes; E3502.1
- Accessory structures with electricity shall have no less than 60 amperes; E3502.1
- Show the location of the panel with a 30"W x 36"D clear working space; E3305.2, E3501.6.2
- Provide a readily accessible service disconnect for each dwelling unit (no more than 6 switches); E3501.6.2, E3501.7

- Panel boards may not be located in clothes closets or bathrooms; E3305.4
- Show locations of smoke detectors in every sleeping room and hallways leading to. All smoke detectors must be interconnected with a power source from the building wiring and shall be equipped with battery backup. When ceiling finish materials are not removed, existing bedrooms may be equipped with battery operated smoke detectors; R313
- Smoke detectors are required in existing buildings when interior alterations occur; R313.2.1
- Designate the circuit number for each light fixture, receptacle, appliance and equipment disconnect; E3603.5
- Cables shall be protected with conduit where subject to physical damage; E3702.3.2
- Indicate location of all mechanical equipment disconnect switches; E4001.5
- At least one wall switch controlled light or outlet must be provided in bathrooms, hallways, stairways, attached garages, outdoor entrances or exits and all habitable rooms; E3803.3
- Lights installed over a shower or bathtub must be approved for use in wet area; E3903.8
- Light fixtures in clothes closets shall be installed in accordance with E3903.11
- Show receptacle outlets at wall spaces 2' or more so that no point along the wall (excluding door openings) is more than 6' from a receptacle outlet; E3801.2
- Show receptacle outlets at each kitchen counter space wider than 12" so that no point along the wall line is more than 24" from a receptacle outlet; E3801.4.1
- Kitchens and dining rooms require two or more 20 AMP small appliance circuits. Such circuits shall be GFCI protected and shall not serve other rooms except breakfast areas, pantries, etc.; E3801.3
- Island or peninsula counter tops with a long dimension of 24" and a short dimension of 12" or greater shall have at least one receptacle; E3801.4.2
- Laundry rooms require at least one 20 AMP circuit that shall not serve any other outlets; E3603.3, E3801.8
- Bathrooms require a separate 20 AMP circuit with receptacles within 3' of the basin; E3801.6
- Exterior outlets at grade level shall be provided at both the front and back of the dwelling; E3801.7 and be GFCI protected; E3802.3
- Convenience receptacles and light switches/fixtures shall be provided within 25' of mechanical equipment; E3801.11, E3803.4
- Hallways of 10' or more in length require a receptacle; E3801.10
- Attached garages require at least one GFCI receptacle; E3801.9, E3802.2
- Outlet boxes must be UL listed and approved, ceiling fans require boxes listed for such use; E4001.6

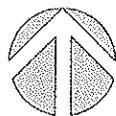
- GFCI protection required in bathrooms, kitchens unfinished basements, garages/carports, exterior receptacles and within 6' of a wet bar or sink; E3802
- Bedroom outlets shall be arc-fault protected (receptacles, lights and smoke detectors); E3802.12
- Transformers (Class 1, 2 & 3) may not be located in clothes closets or attics; E4202.3 Amended

GENERAL NOTES:

1. ALL ELECTRICAL WORK SHALL COMPLY WITH 2006 IRC
2. ALL BEDROOM OUTLETS SHALL BE ARC-FAULT PROTECTED
3. ONLY APPROVED BOXES SHALL BE USED FOR CEILING FANS
4. WEATHER PROOF COVERS SHALL BE INSTALLED ON EXTERIOR RECEPTACLES
5. FCO FIXTURE SHALL BE USED UNDER PATIO COVER
6. RUN NEW WIRING FOR DRYER LOCATION TO EXISTING CIRCUIT
7. EACH BEDROOM SHALL BE REQUIRED TO HAVE A SMOKE DETECTOR INTERCONNECTED WHERE POSSIBLE.



PANEL SCHEDULE		
200A/M.L.O.		
1	(EXISTING)	
2		
3		
4		
5		
6		
7	DRYER	30/10
8	(EXISTING)	
9	SPACE	
10	BEDROOM	15/14
11	SMOKE DET	15/14
12	LIGHTING	20/12
13	BATH	20/12
14	LAUNDRY	20/12
15	SPACE	



ELECTRICAL PLAN

2006 IRC

SCALE: 1/4" = 1'-0"

Appendix B Electrical Load Calculation Worksheet

OPTIONAL CALCULATION – EXISTING DWELLING UNIT
NEC SECTION 220.83

For a dwelling unit having the total connected load served by a single 3-wire, 120/240 volt set of service entrance or feeder conductors with an ampacity of 100 or greater.

LIVABLE SQUARE FOOTAGE _____ SF @ 3 =	_____ VA
SMALL APPLIANCE CIRCUITS (2 minimum) _____ @ 1500 =	_____
LAUNDRY CIRCUIT (Required in new dwelling: 1500) =	_____
ELECTRIC DRYER (Nameplate rating or 5,000) =	_____
ELECTRIC RANGE (Nameplate rating or 12,000) =	_____
COOKTOP & OVEN (Nameplate rating or 6,000 each) =	_____
MICROWAVE OVEN (Dedicated circuit: 1200) =	_____
DISHWASHER (W or W/ Disposer on circuit: 1500) =	_____
DISPOSER (Separate dedicated circuit: 720) =	_____
ELECTRIC WATER HEATER (Nameplate or 4,500) =	_____
OTHER _____	_____
SUBTOTAL =	_____ VA
FIRST 8 KVA @100% =	_____ 8,0000
REMAINDER @ 40% =	_____
SUBTOTAL =	_____ VA
DIVIDED BY 240 V =	_____ AMPS
AIR CONDITIONING =	_____ AMPS
TOTAL =	_____ AMPS
REQUIRED SERVICE	_____ AMPS