

# Ohio Residential Plan Submittal Form (HVAC) 02/19/09

<b>Address of Project</b>	<b>City/Township</b>	<b>Project Description</b>		
<b>Contractor/DBA</b>	<b>Address</b>	<b>State License No</b>	<b>Phone No</b>	<b>Cell Phone No</b>
<b>Owner</b>	<b>Address</b>	<b>Phone No</b>		<b>Cell Phone No</b>
<b>HVAC Design</b>				
<b>Equipment Type/Size</b>	<b>Location of Equipment</b>	<b>Type of Fuel</b>		<b>Furnace Efficiency</b>

Provide additional details or drawings below

First Floor Plan

<b>HVAC Design</b>			
<b>Equipment Type/Size</b>	<b>Location of Equipment</b>	<b>Type of Fuel</b>	<b>Furnace Efficiency</b>

Provide additional details or drawings below

Second Floor Plan

As the legal owner/agent of the property above, I am performing the electrical/HVAC work described above.

\_\_\_\_\_ Date \_\_\_/\_\_\_/\_\_\_

**NOTE: Per section 106.1 the Residential Building Official may require additional drawings, technical data or documentation in order to verify compliance.**

## Building Department Only

<b>Residential Plans Examiner/Building Official</b>	<b>Date of Approval</b>	<b>Application/Permit No</b>

# Ohio Residential Plan Submittal Form

## Referenced Code Text

Revised 02/19/09

<b>ELECTRICAL</b>	<b>MECHANICAL</b>																	
<p><b>NEC 110.3 (B)</b> All electrical equipment shall be installed and used in accordance with the listing requirements and manufacturer's instructions.</p>	<p><b>M1401.1</b> Heating and cooling equipment and appliances shall be installed in accordance with the manufacturer's installation instructions and the requirement's of the Residential Code.</p>																	
<b>Service</b>	<b>Sizing</b>																	
<p style="text-align: center;"><b>Size of Service in Amperes:</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Copper</th> <th style="text-align: center;">Aluminum</th> <th style="text-align: center;">Service Rating</th> <th rowspan="4" style="vertical-align: top;"> <b>NEC 310-15 (B)(6)</b> Conductor Sizes 120/240 VOLT 3-Wire, Single-Phase, Dwelling Services/ Main Feeders <u>only</u> </th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">4 AWG</td> <td style="text-align: center;">2 AWG</td> <td style="text-align: center;">100 Amps</td> </tr> <tr> <td></td> <td style="text-align: center;">1 AWG</td> <td style="text-align: center;">2/0 AWG</td> <td style="text-align: center;">150 Amps</td> </tr> <tr> <td></td> <td style="text-align: center;">2/0 AWG</td> <td style="text-align: center;">4/0 AWG</td> <td style="text-align: center;">200 Amps</td> </tr> </tbody> </table>		Copper	Aluminum	Service Rating	<b>NEC 310-15 (B)(6)</b> Conductor Sizes 120/240 VOLT 3-Wire, Single-Phase, Dwelling Services/ Main Feeders <u>only</u>		4 AWG	2 AWG	100 Amps		1 AWG	2/0 AWG	150 Amps		2/0 AWG	4/0 AWG	200 Amps	<p><b>M1401. 3</b> Heating and cooling equipment shall be sized based on building loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies.</p>
	Copper	Aluminum	Service Rating	<b>NEC 310-15 (B)(6)</b> Conductor Sizes 120/240 VOLT 3-Wire, Single-Phase, Dwelling Services/ Main Feeders <u>only</u>														
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<p><b>NEC 250.50</b> All grounding electrodes that are present at each building or structure served shall be bonded together to form the grounding electrode system. Conductor size per NEC 250.66.</p> <p><b>NEC 250.52</b> Some Permitted Electrodes include:</p> <ol style="list-style-type: none"> <li>1. Metal underground water pipe in direct contact with earth for 10 feet or more</li> <li>2. Metal frame of the building</li> <li>3. Concrete-encased electrode</li> <li>4. Rod, pipe &amp; plate electrodes</li> </ol>	<p style="text-align: center;"><b>Gages of Metal Ducts &amp; Plenums Used for Htg/Cooling</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Types of Ducts</th> <th style="text-align: center;">Size (inches)</th> <th style="text-align: center;">Minimum Thickness (inch)</th> <th style="text-align: center;">Equiv. Galvanized Sheet Gage</th> <th style="text-align: center;">Approx. Aluminum B &amp; S Gage</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Round Ducts &amp; Enclosed Rectangular</td> <td style="text-align: center;">14 or less over 14</td> <td style="text-align: center;">0.013 0.016</td> <td style="text-align: center;">30 28</td> <td style="text-align: center;">26 24</td> </tr> <tr> <td style="text-align: center;">Exposed Rectangular Ducts</td> <td style="text-align: center;">14 or less over 14</td> <td style="text-align: center;">0.016 0.019</td> <td style="text-align: center;">28 26</td> <td style="text-align: center;">24 22</td> </tr> </tbody> </table>	Types of Ducts	Size (inches)	Minimum Thickness (inch)	Equiv. Galvanized Sheet Gage	Approx. Aluminum B & S Gage	Round Ducts & Enclosed Rectangular	14 or less over 14	0.013 0.016	30 28	26 24	Exposed Rectangular Ducts	14 or less over 14	0.016 0.019	28 26	24 22		
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<b>General Circuitry</b>	<b>Access &amp; Installation</b>																	
<p><b>NEC 210.11</b> and <b>422.12</b> In addition to the branch circuits installed to supply general illumination and receptacle outlets in dwelling units, the following minimum requirements apply: Two 20-amp circuits for the kitchen receptacles, One 20-amp circuit for the laundry receptacles, One 20-amp circuit for the bathroom receptacles and One separate, individual branch circuit for central heating equipment</p>	<p><b>M1401.2</b> Heating and cooling equipment shall be located with respect to building construction and other equipment to permit maintenance, servicing and replacement. Clearances shall be maintained to permit cleaning of heating and cooling surfaces; replacement of filters, blowers, motors, controls and vent connections; lubrication of moving parts; and adjustments</p>																	
<p><b>NEC 210.52 (B) (3)</b> Receptacles installed in the kitchen to serve countertop surfaces shall be supplied by not less than two separate small appliance branch circuits.</p>	<p><b>M1601.3.2</b> Metal ducts shall be supported by 0.5-inch (12.7 mm) wide 18-gage metal straps or 12-gage galvanized wire at intervals not exceeding 10 feet (3048 mm) or other approved means. Nonmetallic ducts shall be supported in accordance with manufacturer's installation instructions.</p>																	
<p><b>NEC 210.52 (A) (1)</b> Generally, receptacle outlets in habitable rooms shall be installed so that no point measured horizontally along the floor line in any wall space is more than 6' from a receptacle outlet. A receptacle shall be installed in each wall space 2 feet or more in width.</p>	<p><b>M1401.4</b> Equipment installed outdoors shall be listed and labeled for outdoor installation.. Supports and foundations shall prevent excessive vibration, settlement or movement of equipment. Supports and foundations shall be level and conform to manufacturer's installation instructions.</p>																	
<p><b>NEC 210.52 (C)(1)</b> At kitchen countertops, receptacle outlets shall be installed so that no point along the wall line is more than 24 inch measured horizontally from a receptacle outlet in that space. Countertop spaces separated by range tops, sinks or refrigerators are separate spaces.</p>	<b>Electrical Continued</b>																	
<p><b>NEC 210.52 (E)(1) &amp; 406.8 (B)</b> At least one receptacle, accessible while standing at grade level and no more than 6.5' above grade, shall be installed at the front and back of a dwelling. Receptacles installed in wet locations shall have an enclosure that is weatherproof whether or not the attachment plug cap is inserted. All 15 and 20 ampere, 125 and 240 volt non-locking type receptacles shall be listed weather-resistant type.</p>	<p><b>NEC 410.16</b> Luminaries in clothes closets: Luminaries types not permitted: Incandescent fixtures with open or partially enclosed lamps and pendent luminaries or lamp holders shall not be permitted.</p> <p>Minimum clearances required from fixture to leading edge of closet shelf:</p> <ol style="list-style-type: none"> <li>a) 12 inches for incandescent luminaries' surface mounted.</li> <li>b) 6 inches for incandescent luminaries recessed with completely enclosed lamps.</li> <li>c) 6 inches for surface or recessed fluorescent luminaries.</li> <li>d) Surface mounted fluorescent or LED luminaries shall be permitted to be installed within the storage space where identified for this use.</li> </ol>																	
<p><b>NEC 210.12 (B)</b> All 120 volt single phase, 15 and 20 ampere branch circuit supplying outlets installed in dwelling unit family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, or similar rooms or areas shall be protected by a listed arc-fault circuit interrupter, combination type installed to provide protection of the branch circuit.</p>	<p><b>NEC 406.11</b> In all areas specified in article 210.52, all 125 volt, 15 and 20 ampere receptacles shall be listed as tamper-resistant receptacle</p>																	
<p><b>NEC 210.8</b> Ground-fault circuit-interrupter (GFCI) protection shall be provided for all 125-volt, 15 and 20 amp receptacle outlets installed outdoors, in boathouses, garages, unfinished accessory buildings, crawl spaces at or below grade level, unfinished basements, bathrooms, at kitchen countertops and within 6' of the outside edge of the sink in laundry rooms, utility rooms, and at wet-bars.</p>	<p><b>RCO 303.6</b> Stairway Illumination</p> <p>All interior and exterior stairways shall be provided with means to illuminate the stairs, including the landings and the treads. Interior stairways shall be provided with artificial light source located in the immediate vicinity of each landing of the stairway.</p>																	
<p><b>NEC 210.63</b> A 125-Volt 15 or 20 ampere-rated receptacle outlet shall be installed at an accessible location for the servicing of the heating, air conditioning and refrigeration equipment. The receptacle shall be located on the same level and within (25ft) of the equipment.</p>																		
<p><b>NEC 680.71, 680.73, 680.74</b> Hydro massage baths tubs and their associated electrical components shall be on an individual branch circuit(s) and protected by a readily accessible ground fault circuit interrupter. All 125-Volt receptacles not exceeding 30 amps and located with-in (6ft) measured horizontally from the inside walls of the hydro massage tub shall be protected by ground-fault circuit interrupter(s). Hydro massage bath tub electrical equipment shall be accessible without damaging the building structure or building finish. All metal piping systems and all grounded metal parts in contact with the circulating water shall be bonded together with solid copper bonding jumper not smaller than # 8.</p>																		
<p><b>NEC 314.16 (A)</b> Number of conductors in outlet, device, junction box, and conduit bodies. Boxes and conduit bodies shall be of sufficient size to provide free space for all enclosed conductors. In no case shall the volume of the box be calculated to be less than the minimum fill of the box.</p>																		