

CR15 MECHANICAL		(3) Coolant Distribution System		2. PLUMBING		CR16 ELECTRICAL	
1. Air Conditioning		(a) Distribution systems employing liquid media for cooling shall be designed in accordance with the applicable criteria contained in the ASHRAE Guide and shall be capable of producing summer comfort conditions within the concept of this standard. Refrigerant lines shall be insulated with a minimum 3/8 inch thick material having a moisture and thermal transmission rate not in excess of 0.1 and 0.28 respectively. Insulate chilled water lines with maximum conductance C of 0.6.		a. General		1. General: Provide an electrical system which will assure a safe and adequate source of energy for satisfactory illumination and for efficient and convenient operations of appliances and mechanical equipment.	
a. General		(b) All exposed refrigeration piping located less than 6 ft. above any floor or outside grade shall be suitably protected to prevent damage to piping or injury to persons.		(1) Work Included:		a. Work Included	
(1) Work Included:		(c) Where condenser cooling water is known to cause excessive corrosion, scaling or obstruction within the piping or equipment, suitable approved water treatment means will be required. Dielectric connectors shall be used between ferrous and non-ferrous piping in the cooling water circuit.		(a) Complete plumbing system.		(1) Secondary Service.	
(a) Complete air conditioning system (heating, cooling and ventilating).		(b) Exposed refrigeration piping shall be insulated with a minimum 3/8 inch thick material having a moisture and thermal transmission rate not in excess of 0.1 and 0.28 respectively. Insulate chilled water lines with maximum conductance C of 0.6.		(b) Gas supply piping and connections to gas-fired equipment.		(2) Distribution, Lighting and Power Panels.	
(b) Providing starters for electric motors furnished under "Mechanical".		(c) Storm sewer within 5 ft. of the building.		(c) Sanitary sewer.		(3) Lighting and Power Feeders.	
(c) Temporary heat during construction.		(e) Plumbing fixtures.		(f) Providing of items requiring installation by other Divisions of the specifications.		(4) Lighting Fixtures.	
(d) Maintaining system for 1 year after Substantial Completion.		(g) Securing and paying for all plumbing and sanitary sewer permits.		(g) Securing and paying for all plumbing and sanitary sewer permits.		(5) Conduit for Phone System, Security System and TV System.	
(2) Work Not Included		(h) Roof flashing for vent piping.		(2) Work Not Included:		(6) Fire Alarm System.	
(a) Wood platforms and curbs for fans and mechanical units.		(a) Paying for temporary water and sewer facilities, unless noted otherwise.		(a) Paying for temporary water and sewer facilities, unless noted otherwise.		(7) Connections for other Divisions of the specifications.	
(b) Plumbing services and connections to units.		(b) Concrete foundations and steel supports not indicated on the "Plumbing Drawings".		(b) Roof flashing for vent piping.		(8) Installing items furnished by Owner.	
(c) Electrical line voltage to units.		(c) Sheet metal gutters, leaders and downspouts.		(c) Storm sewer more than 5 ft. beyond the building.		(9) Temporary services during construction.	
(d) Openings, cutting and patching walls, roofs and ceilings for ductwork and piping.		(d) Storm sewer more than 5 ft. beyond the building.		b. Extures		b. Work Not Included	
(e) Paying for temporary heat during construction, unless noted otherwise.		b. Extures		All fixtures shall be securely supported so that no strain is placed on the connected piping. Unless otherwise recommended by the manufacturer, both tub rims of the wall shall be supported on metal hangers or wood blocks secured to the wall construction.		(1) High voltage electric service.	
(f) Changing filters after date of Substantial Completion (Owner's responsibility).		c. Piping		(1) Piping		(2) Metering.	
(3) Submittals		(1) Water service pipe shall be laid on solid ground below frost line. Service pipe may be laid in the same trench with sewer pipe provided it is laid on a shelf of solid earth at least 1 ft. above the sewer pipe. Service trenches shall be filled with earth free of cinders, wood, rocks or other debris. Compact well.		(2) Piping installed in corrosive soil shall be either of a material unaffected by such soil or shall be isolated from it by a protective coating. The coating and its application shall also conform with AMWA C-203.		(3) Paying for temporary services during construction, unless noted otherwise.	
(a) Within 15 days after contract execution, submit in manila-bound folders 3 brochures of the complete list of equipment and material.		(2) Underground threaded joints in ferrous pipe shall be coated and wrapped. Coating and wrapping material and its application shall also conform with AMWA C-203.		(3) Piping shall be installed without critical damage to structural members.		c. Connecting equipment furnished by others:	
(b) Provide three O & M manuals describing operation, servicing and maintenance requirements for each piece of equipment and material.		(4) Pipe hangers and supports shall be of material similar to that of the piping. Dielectric insulation fittings shall be used where pipe of dissimilar metals are connected.		(5) Piping shall be properly sloped and arranged for draining.		Furnish all switches, push buttons and selector switches.	
Standards		(6) Cold water piping installed in locations of the building subject to freezing temperatures, or where pipe sweating may create a problem, and all circulating domestic hot water piping shall be insulated with a minimum C value of 0.45.		(7) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.		1. Standards: All electrical equipment shall be installed in accordance with the current National Electrical Code, NFPA 70.	
Except as modified on the drawings, the design, construction, installation, adjusting and labeling of all equipment, accessories and appurtenances for heating, cooling and ventilation shall comply with recognized standards, including the National Standards for Field Measurements instrumentation.		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.		d. Domestic Water Heating System and Storage		2. Excavations: Conduit shall be laid on solid ground below frost line, and 18 inches (minimum) below grade. Service trenches shall be filled with earth free of cinders, wood, rocks or other debris. Compact well.	
c. Electrical Equipment		(1) General		(a) Domestic hot water system shall be equipped with means for limiting the temperature of the hot water for personal use at the fixtures to 110 deg. F, unless required otherwise.		4. Distribution System: Entire electrical system shall be installed in wireways and conduit.	
Work shall be installed in accordance with the National Electrical Code, enforced edition, and NFPA 70.		(a) Domestic hot water system shall be equipped with means for limiting the temperature of the hot water for personal use at the fixtures to 110 deg. F, unless required otherwise.		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.			
d. Warm Air Heating System		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.		e. Central Domestic Hot Water Piping			
Work shall be installed in accordance with NFPA Standards 90A, 31 and 54.		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.		All piping between heaters, boilers and storage tanks, including circulating lines, shall be maintained throughout at the full size of the heater tapings, and shall be thermally insulated with a minimum C value of 0.45.			
e. Electric Heating		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.		Central Domestic Hot Water Piping			
Work shall be installed in accordance with the National Electrical Code, enforced edition. When a recognized industry certification of testing program is available for heating units, systems and components (e.g. NEMA and UL), such equipment shall be labeled to show conformance.		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.		All piping between heaters, boilers and storage tanks, including circulating lines, shall be maintained throughout at the full size of the heater tapings, and shall be thermally insulated with a minimum C value of 0.45.			
f. Gas Fired Equipment		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.		Special Piping Systems			
(1) Equipment, including conversion burners, shall be labeled, listed and installed in conformance with the appropriate ANSI, AGA or UL requirements.		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.		(a) Gas service piping shall be installed in a separate trench. Joints between lines of dissimilar metals shall electrically isolate one metal from the other.			
(2) All gas fired heaters shall be vented.		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.		(b) Steel and iron piping for gas service shall be coated and protected against corrosion as recommended in AMWA C-203.			
(3) Vent materials including connectors shall be UL labeled and listed. They shall be installed in accordance with the listing, NFPA requirements and the manufacturer's instructions.		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.		(c) Dielectric insulating fittings shall be provided on service side of gas meters when dissimilar metals are connected.			
(4) No gas vent shall terminate less than 5 ft. above the highest draft hood on connected appliances, except as provided above.		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.					
9. Mechanical Cooling		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.					
(1) General		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.					
Suitable and durable means shall be provided to prevent transmission of objectionable noise or vibration generated by the system or equipment.		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.					
(2) Air Distribution Systems		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.					
Duct systems shall be designed and installed in accordance with a recognized and acceptable method such as contained in the SMACNA and NESCA manuals, and shall comply with NFPA 90A or 90B.		(b) All water heaters and water heating system shall be valved to provide shutoff from the cold water supply system.					

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PROJECT NAME: Old Farm Road Flowood, Mississippi	
 Richard McInnes 1047 Memphis, TN 11/11/15	