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DEVELOPMENT SERVICES

RESIDENTIAL FUEL GAS
PLAN SUBMITTAL CHECKLIST

Checklist intended for Residential Gas Piping installation. **Note: All references comply with 2024 International Residential Code (IRC), 2024 International Fuel Gas Code (IFGC), 2024 International Fire Code (IFC), and National Fire Protection Association (NFPA) Standards including City of Mesa amendments.**

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Review Keys

"M –" = City of Mesa Amendment

Administrative

- ☐ 1. Provide **detailed** project narrative.
- ☐ 2. Identify site address.
- ☐ 3. Provide vicinity map showing areas surrounding the site.
- ☐ 4. Provide project site plan.

Site Plan

- ☐ 1. Dimensioned site plan showing including all setbacks to property lines, easements, structures, gas meter location(s), LP tank location (if applicable), and routing of underground gas piping.
- ☐ 2. Show distinctions between new and existing gas piping including connections. (IFGC Chapter 4; IRC G2413.3; G2413.4)
    a. Identify all existing and proposed gas appliances (interior and exterior).
    b. Identify types of gas (Natural or LP).
    c. Provide British Thermal Unit (BTU) rating for each appliance.
    d. Identify all gas line sizes.
    e. Identify gas sizing table, isometric, lengths and sizes of all mainlines and branches.
    f. Provide gas pipe sizing calculations.
    g. Provide total connected load and developed length of entire system for gas piping connecting to an existing system.
- ☐ 3. Gas pressure shall comply with IFGC Tables 402.4.
- ☐ 4. Gas demand shall match gas isometric and appliance schedule.
- ☐ 5. Gas vent termination shall comply with IFGC 503.6.5.
- ☐ 6. Gas piping and LP tanks shall not be installed within public utility easements.

Facility Gas Piping Design

- ☐ 1. Provide gas piping schematic diagram showing piping size, developed lengths (identify longest run), materials, appliance loads, and total connected load. (IRC G2413.3)
- ☐ 2. Provide gas piping sizing calculations using an approved sizing method. (IRC G2413.4)
- ☐ 3. Gas supply pressure and delivery pressure at each appliance shall comply with IRC G2413.1.
- ☐ 4. Identify pressure regulator locations. (IRC G2421.1; G2421.2)
    - a. Pressure regulators shall be installed where appliances are designed to operate at a lower pressure than supply pressure. (IFGC 410)
- ☐ 5. Medium pressure (MP) regulators shall comply with specific installation requirements. (IFGC 410.2)
- ☐ 6. Identify all second stage regulators, locations, access, and venting if required. (IFGC 410)
- ☐ 7. Accessible shutoff valve shall be installed at each appliance. (IRC G2420.5)
- ☐ 8. Appliance connectors shall be listed and installed per manufacturer's instructions. (IRC G2422.1)
- ☐ 9. Provide restraining device for gas appliances on casters. (IFGC 411.1.1)

Pipe Materials and Installation

- ☐ 1. Provide approved piping materials (steel, corrugated stainless steel tubing (CSST), copper where permitted, polyethylene (PE) underground only). (IRC G2414.1)
- ☐ 2. Steel pipe exposed to corrosion shall be protected against corrosive action. (IRC G2415.11)
- ☐ 3. CSST installations shall include bonding per IRC G2411.1 and manufacturer requirements.
- ☐ 4. Underground piping shall be 12 inches minimum below grade. (IRC G2415.12)
- ☐ 5. Underground piping for individual outdoor appliances shall be 8 inches minimum below finished grade if location is not susceptible to physical damage. (IRC G2415.12.1)

- ☐ 6. Only piping encased in approved conduit shall be installed beneath buildings. (IRC G2415.14)
- ☐ 7. Underground nonmetallic gas piping shall include 18 AWG minimum tracer wire rated for direct burial. (IRC G2415.17.3)
- ☐ 8. Gas piping shall be protected against physical damage (IRC G2426.7)
- ☐ 9. Gas piping shall not be installed in ducts, chimneys, or vent shafts. (IRC G2425.15)

Appliance Install and Location

- ☐ 1. Appliances shall be installed in accordance with manufacturer instructions. (IRC G2408.1)
- ☐ 2. Identify location of appliance and effect on vent draft. (IFGC 304; 304.1; 304.2; 304.4; IMC 507.1.3)
- ☐ 3. Appliance clearances to combustibles shall be maintained. (IRC G2408.5)
- ☐ 4. Appliances located in flood hazard areas shall comply with elevation requirements. (M-IRC G2404.7)

Combustion Air

- ☐ 1. Provide combustion air calculations. (IRC G2407.5.2)
- ☐ 2. Identify combustion air method for indoor air, outdoor air and mechanical. (IRC G2407.5 through G2407.7; G2407.9)
- ☐ 3. Confined spaces shall comply with IRC G2407.5.

Venting

- ☐ 1. Identify vent type. For example: Type B, direct vent, Category IV, etc. (IRC Table G2427.4)
- ☐ 2. Vent termination clearance shall comply with IRC G2427.6.4.
- ☐ 3. Provide common venting calculations. (IRC G2426; G2427)
- ☐ 4. Plastic venting (Category IV) shall be installed per listing and manufacturer requirements. (IRC G2427.4.1)

LP (Propane) Tank Requirements

- ☐ 1. Identify tank size capacity and location(s). (IRC G2412.2; IRC G2414.5.2; IFC Table 6104.3; NFPA 58)

- ☐ 2. Provide 5-foot minimum separation from buildings, property lines, and public ways. (NFPA 58)
- ☐ 3. Provide 10-foot minimum clearance from combustible vegetation. (NFPA 58)
- ☐ 4. Pressure relief valve discharge shall not be located less than 5 feet from building openings and ignition sources. (NFPA 58)
- ☐ 5. Tanks shall be level, secured, and supported on approved foundation. (NFPA 58)
    a. Acceptable foundations include:
        i. 4-inch thick reinforced concrete slab on grade, which extends 6-inch minimum beyond tank supports.
        ii. Precast concrete pads.
        iii. Masonry or concrete piers.
        iv. Other approved noncombustible supports.
    b. Wood blocking or loose materials not permitted.
- ☐ 6. Containers subject to vehicular damage shall be protected by approved vehicle impact protection (bollards or equivalent). (IRC G2422.1.1; NFPA 58 6.7.2)

Additions to Existing Systems

- ☐ 1. Identify total system capacity and pipe sizing for entire system when additional appliances are added. (IRC G2413.3; G2413.4)
- ☐ 2. Gas meter capacity shall be adequate for total connected load. (IRC G2413.2)

City of Mesa Gas Add Information

- ☐ 1. Proposed gas piping shall be designed from an existing or proposed gas meter location approved by gas utility provider.
- ☐ 2. For properties serviced by City of Mesa Gas, contact gas engineering at 480-644-2509 for additional information.