

**Amendments to the
2021 International Residential Code
City of Merkel, Texas**

The following sections, paragraphs, and sentences of the 2021 International Residential Code are hereby amended as follows:

Also included are Masonry Figure 1, Masonry Figure 2, Foundation Figure 18-1-E, King Truss Figure 502.5 and Handrail Figure R311.7.8.4-A

Appendices excluded from adoption are as follows: AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, and AW.

In 2009, the State Legislature enacted SB 1410 prohibiting cities from enacting fire sprinkler mandates in residential dwellings. However, jurisdictions with ordinances that required sprinklers for residential dwellings prior to and enforced before January 1, 2009, may remain in place. Reference; Section R313 Automatic Fire Sprinkler Systems.

The energy provisions in IRC Chapter 11 is deleted in its entirety.

Reference the 2021 IECC for energy code provisions and recommended amendments.

{Amend to read as follow,}

R101.1 Title. These regulations shall be known as the Residential Building code of the City of Merkel, Texas, hereinafter referred to as “this code”.

{Section R102.4; change to read as follows:}

R102.4 Referenced codes and standards. The *codes*, when specifically adopted, and standards referenced in this *code* shall be considered part of the requirements of this *code* to the prescribed extent of each such reference and as further regulated in Sections R102.4.1 and R102.4.2. Whenever amendments have been adopted to the referenced *codes* and standards, each reference to said *code* and standard shall be considered to reference the amendments as well. Any reference made to NFPA 70 or the *Electrical Code* shall mean the *Electrical Code* as adopted.

(Reason: Legal wording to recognize locally adopted codes and amendments adopted with referenced codes.)

{Section R103 and R103.1 amend to insert the Department Name}

Building Inspections Division

R103.1 Creation of enforcement agency. The Building Inspections Division is hereby created and the official in charge thereof shall be known as the Building Official.

{Section R105.2 add item #11}

R105.2 Work exempt from a permit.

11. When re-roofing 5 squares or less.

(Reason: To accommodate common roofing repairs.)

{Section R105.3.1.1& R106.1.4; delete these sections.}

R1053.1.1 Determination of substantially improved or substantially damaged existing buildings in flood hazard areas.

R106.1.4 Information for construction in flood hazard areas.

(Reason: Floodplain provisions are addressed locally.)

{105.10, 105.11, and 105.12; Addition of the following sections:}

R105.10 Trash and Debris Containment. It shall be the responsibility of each permit holder to make provisions for the containment of building materials, construction debris, and all other trash and debris generated within the property boundaries. Blowing trash, paper, building materials, packaging, and other construction site related debris, allowed to collect or accumulate outside the property boundaries for which a permit has been issued, in other than an approved container, shall constitute a violation of this code. Such violations shall be subject to enforcement provisions as provided for in the adopted code, including a stop work order, revocation of permit, and a possible fine.

R105.11 Bonds. Any person desiring to engage in the business of a general contractor, roofing contractor, or engage in the business of altering, repairing, construction, demolishing, or moving of structures, or any construction work generally followed by building contractors within the City, shall first file with the Building Official, a surety bond in the penal sum of \$75,000, payable to the City of Merkel and conditioned on a faithful performance of all provisions and regulations of the building code, this chapter, and all other ordinances of the City, and the surety of such bond shall be a company authorized to transact business in the State of Texas. In the event the City has filed on a contractors bond within the past 3 years, the bond shall increase to the penal sum of \$150,000.

R105.12 Contractors registration required. All contractors shall first file with the Building Official of the City of Merkel as a registered contractor, as per section 8-161 of the Municipal Code, Article IV, Licenses and Registration.

(Reason: To clarify contractor responsibilities and added protection for the customer.)

{Delete 2nd sentence and insert the following,}

R106.1 Submittal documents. The construction documents shall be prepared by a registered design professional when required in accordance with the Texas Engineering Practice Act, Title 6, Subtitle A, Chapter 1001. In addition, buildings with a clear span exceeding 24' shall have the foundation and structural members designed by a professional engineer.

(Reason: To clarify specific design requirements.)

{Add following at the end of paragraph,}

R108.2 Schedule of permit fees. Permit fees are set by Merkel City Council ordinance. Fees are located here: <https://merkeltexas.com/code-enforcementbuilding-inspection/> Fees published are subject to change at any time by Council action to ordinance.

{Delete paragraph and insert the following,}

R108.5 Refunds. The building official shall authorize refunding of any fee paid hereunder in which was erroneously paid or collected. The building official may authorize refunding of not more than 80 percent of the permit fee paid when no work has been done under a permit issued in accordance with this code. The building official shall not authorize refunding of any fee paid except on written application filed by the permit holder not later than 180 days after the date of fee payment.

(Reason: Clarification of interpretation.)

Section R108.6 {Amend to read as follows}

R108.6 Work commencing before permit issuance. Any person who commences work on a building, structure, electrical, gas, mechanical, or plumbing system without first obtaining the required permits shall be subject to an additional fee established by the governing authority that shall be in addition to the required permit fee. The investigation fee shall be equal to the amount of the permit fee required by the Code, however subsequent work commenced within 12 months of the previous violation shall be assessed a ten times fee.

(Reason: To clarify specific penalties for such violations..)

{Addition of section,}

R108.7 Re-inspection Fee. A fee as established by city council ordinance may be charged when:

1. The inspection called for is not ready when the inspector arrives;
2. No building address clearly posted;
3. The building is locked or work otherwise not available for inspection when called;
4. The job site is red-tagged twice for the same item;
5. The original red tag has been removed from the job site.
6. Failure to maintain erosion control, trash control or tree protection.

Any re-inspection fees assessed shall be paid before any more inspections are made on that job site.

(Reason: This fee is not a fine or penalty but is designed to compensate for time and trips when inspections are called for when not ready.)

{Section 112 Means of Appeals. Delete and replace as follows;}

R112.1 General. In order to hear and decide appeals of order, decisions or determinations made by the Building official relative to the application and interpretation of this code, appeals may be heard by the Merkel City Council.

(Reason: To clarify appropriate board set by municipality.)

{R114.4; add last sentence as follows:}

114.4 Failure to Comply. A stop work order release fee in the amount of \$200.00 shall be paid prior to work commencing.

(Reason: To clarify the penalty.)

{Section R202; change definition of "Townhouse unit" to read as follows:}

TOWNHOUSE UNIT. A single-family dwelling unit in a townhouse, separated by property lines, that extends from foundation to roof and that has a yard or public way on not less than two sides.

(Reason: To distinguish Townhouses on separate lots.)

{Table R301.2 (1); fill in as follows:}

GROUND SNOW LOAD	WIND DESIGN				SEISMIC DESIGN CATEGORY ^f	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMPE ^e	ICE BARRIER UNDER-LAYMENT ^h	FLOOD HAZARDS ^g	AIR FREEZING INDEX ⁱ	MEAN ANNUAL TEMP ^j
	SPEED ^d (MPH)	Topographic Effects ^k	Wind Special	Windborne Debris		Weathering ^a	Frost Line Depth ^b	Termite ^c					
5 lb/ft	115 (3 sec-gust)/76 fastest mile	No	No	No	A	Moderate	6"	Mode rate-Heavy	20 ^o F	No	Ord# 43-1992	86	64.5 ^o F

Delete remainder of table Manual J Design Criteria and footnote N

(Reason: To promote regional uniformity. Manual J is utilized by third party and not part of performed plan reviews. This is reference table only, not needed.)

{Section R302.1; add exception #6 to read as follows:}

Exceptions: *{previous exceptions unchanged}*

- 6. Open non-combustible carport structures may be constructed when also approved within adopted ordinances.

(Reason: Refers to other ordinances, such as zoning ordinances.)

{Section R302.5.1; amend to read as follows:}

R302.5.1 Opening protection. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 1 3/8 inches (35 mm) in thickness, solid or honeycomb core steel doors not less than 1 3/8 inches (35 mm) thick, or 20-minute fire-rated doors. Doors shall be self-latching. ~~and equipped with a self-closing or automatic-closing device.~~

(Reason: Absence of data linking self-closing devices to increased safety.)

{Section R303.3, Exception; amend to read as follows:}

Exception: {existing text unchanged} Spaces containing only a water closet or water closet and a lavatory may be ventilated with an approved mechanical recirculating fan or similar device designed to remove odors from the air.

(Reason: Consistent with common local practice as recirculating fans are recognized as acceptable air movement.)

Section R303.11; addition of section;}

R303.11 Required cooling. Every dwelling shall be provided with cooling facilities capable of maintaining a room temperature of not higher than 80 degrees at a point 3 feet above the floor and 2 feet from exterior walls in all habitable rooms. This installation of one or more portable cooling devices shall not be used to achieve compliance with this section.

Exception: Window air conditioning units shall not be considered a portable device.

(Reason: To protect the health of habitants due to the high temperatures in this area.)

{Section R304.1; delete and replace as follows;}

R304.1 Minimum area. A dwelling unit shall conform to the minimum area requirements of this code listed herein provided:

1. The unit shall have a separate living room of not less than 120 square feet of gross floor area.
2. The unit shall be provided with a separate sleeping room of not less than 70 square feet of gross area and every bedroom occupied by more than one person shall contain not less than 50 square feet of floor area for each occupant thereof.
3. The unit shall be provided with a kitchen area containing a sink, cooking appliance, and a refrigeration appliance with each having a clear passageway of 3 feet between countertops and appliances or countertops and walls. Kitchens shall be calculated as a separate area with not less than 35 square feet of gross area.
4. The unit shall be provided with a separate bathroom containing a water closet, lavatory, and bathtub or shower.
5. A living room or bedroom shall be not less than 7 feet in any plan dimension.

(Reason: To protect the mental health of habitants.)

{Section R313.2 One and Two Family Dwellings; Delete this section and subsection in their entirety.}

(Reason: In 2009, the State Legislature enacted SB 1410, amending section 1301.551 subsection I of the occupation code, prohibiting cities from enacting fire sprinkler mandates one or two family dwellings only. However, jurisdictions with ordinances that required sprinklers for one or two family dwellings prior to and enforced before January 1, 2009, may remain in place.)

{Section R315.2.2 Alterations, repairs and additions; amend to read as follows:}

Exception:

1. Work involving the exterior surfaces of dwelling, such as the replacement of ~~roofing or~~ siding, or the addition or replacement of window or door, or the addition of a porch or deck.
- ~~2. Delete~~
3. (remains the same)

(Reason: Revised exception for clarity. Code intent is to protect against the products of combustion.)

{Section R401.1 addition of paragraph at the end;}

R401.1 Application..... Standard foundation design acceptable for one and two story buildings exempt from an engineer design, shall be designed in accordance with design figure 18-1-E.

(Reason: To require design resulted from a study for this area of high PI soils.)

{Section 403.1.8.1.2 addition of subsection;}

R403.1.8.1.2 Slab on grade foundation. Post tension slabs shall be designed by a professional engineer licensed by the State of Texas in accordance with the International Building Code section 1808.6.2

(Reason: To require an engineer's design on highly expansive soils.)

{Section 502.5 addition of exception}

502.5 Allowable girder and header spans.

Exception. A king truss constructed in accordance with figure R502.5 shall be acceptable.

(Reason: King truss is an engineered design successfully used in the area.)

{Section R703.8.3.3 addition of subsection;}

R703.8 Lintels....

R703.8.3.3. Garage door openings or other masonry openings over 11' and up to and including 18'3" where the masonry height does not exceed 2' may use a 7"x4"x3/8" steel lintel with a bearing of 10" on each end.

(Reason: Clearly lists requirement for this type of application and commonly used in this area.)

{Add section R703.8.4.1.2 Veneer Ties for Wall Studs; to read as follows:}

R703.8.4.1.2 Veneer Ties for Wall Studs. In stud framed exterior walls, all ties may be anchored to studs as follows:

1. When studs are 16 in (407 mm) o.c., stud ties shall be spaced no further apart than 24 in (737 mm) vertically starting approximately 12 in (381 mm) from the foundation; or
2. When studs are 24 in (610 mm) o.c., stud ties shall be spaced no further apart than 16 in (483 mm) vertically starting approximately 8 in (254 mm) from the foundation.

(This amendment had been a carryover amendment for years to provide clear instruction for placement of brick ties. It is now retained with changes to reflect its correct placement and use for clarity when attachment to framing lumber (studs). It should remain for those purposes. It is in addition to the new Table in 2018 which provides for brick ties directly to sheathing.)

{Section R802.11.2; amend first sentence as follows:}

R802.11.1.2 Rafter uplift resistance. Individual rafter spaced not more than 24" on center shall be attached to supporting wall assemblies in accordance with Table R602.3(1)

(Reason: To reflect appropriate fastening table.)

{Section *R905.7.1 Deck Requirements; Amend to read as follows;}

905.7.1 Deck requirements. Wood shingles shall be installed on solid wood sheathing.

(Reason: Common practice in this area.)

{Section R905.8.1 Deck requirements; Amend to read as follows;}

R905.8.1 Deck requirements. Wood shakes shall be installed on solid wood sheathing.

(Reason: Common practice in this area.)

{Chapter 11 [RE] – Energy Efficiency is deleted in its entirety; Reference the 2021 IECC for energy code provisions and recommended amendments.}

(Reason: The recommended energy code changes from the Energy and Green Advisory Board update the amendments for Chapter 11. The 2021 International Energy Conservation Code should be referenced for residential energy provisions. This approach simply minimizes the number of amendments to the IRC.)

{Section M1411.3; amend to read as follows:}

M1411.3 Condensate disposal. Condensate from cooling coils or evaporators shall be conveyed from the drain pan outlet to ~~an approved place of disposal~~ a sanitary sewer through a trap, by means of a direct or indirect drain. {remaining text unchanged}

(Reason: Reflects regional practice and to reduce excessive runoff into storm drains.)

{Section M1411.3.1, Items 3 and 4; add text to read as follows:}

M1411.3.1 Auxiliary and secondary drain systems. {bulk of paragraph unchanged}

1. {text unchanged}
2. {text unchanged}
3. An auxiliary drain pan... {bulk of text unchanged}... with Item 1 of this section. A water level detection device may be installed only with prior approval of the building official.
4. A water level detection device... {bulk of text unchanged}... overflow rim of such pan. A water level detection device may be installed only with prior approval of the building official.

(Reason: Reflects standard practice in this area.)

{Section M1411.3.1.1; add text to read as follows:}

M1411.3.1.1 Water-level monitoring devices. On down-flow units ...{bulk of text unchanged}... installed in the drain line. A water level detection device may be installed only with prior approval of the building official.

(Reason: Reflects standard practice in this area.)

{M1505.2 Change the 2nd sentence to read as follows:}

M1505.2 Recirculation of air. Exhaust air from bathrooms, toilet rooms and kitchens shall discharge outdoors, or into a properly ventilated attic at least 18 inches above ceiling joists.

(Reason: Reduce the number of penetrations in a roof)

{Section M2005.2; change to read as follows:}

M2005.2 Prohibited locations. Fuel-fired water heaters shall not be installed in a room used as a storage closet. Water heaters located in a bedroom or bathroom shall be installed in a sealed enclosure so that *combustion air* will not be taken from the living space. Access to such enclosure may be from the bedroom or bathroom when through a solid door, weather-stripped in accordance with the exterior door air leakage requirements of the *International Energy Conservation Code* and equipped with an *approved* self-closing device. Installation of direct-vent water heaters within an enclosure is not required.

(Reason: Corresponds with the provisions of IFGC Section 303.3, exception #5.)

{Section G2415.2.1 (404.2.1) CSST; add a second paragraph to read as follows:}

Both ends of each section of medium pressure gas piping shall identify its operating gas pressure with an *approved* tag. The tags are to be composed of aluminum or stainless steel and the following wording shall be stamped into the tag:

"WARNING: 1/2 to 5 psi gas pressure - Do Not Remove"

(Reason: To protect homeowners and plumbers.)

{Section G2415.12 (404.12) and G2415.12.1 (404.12.1); change to read as follows:}

G2415.12 (404.12) Minimum burial depth. Underground *pipng* systems shall be installed a minimum depth of ~~12 inches (305 mm)~~ 18 inches (457 mm) below grade, ~~except as provided for in Section G2415.12.1.~~

G2415.12.1 (404.12.1) Individual Outdoor Appliances; Delete in its entirety

(Reason: To provide increased protection to piping systems.)

{Section G2417.1 (406.1); change to read as follows:}

G2417.1 (406.1) General. Prior to acceptance and initial operation, all *pipng* installations shall be visually inspected and *pressure tested* to determine that the materials, design, fabrication, and installation practices comply with the requirements of this *code*. The *permit* holder shall make the applicable tests prescribed in Sections 2417.1.1 through 2417.1.5 to determine compliance with the provisions of this *code*. The *permit* holder shall give reasonable advance notice to the *building official* when the *pipng system* is ready for testing. The *equipment*, material, power and labor necessary for the inspections and test shall be furnished by the *permit* holder and the *permit* holder shall be responsible for determining that the work will withstand the test pressure prescribed in the following tests.

(Reason: To utilize language used in the IPC regarding who is responsible for testing procedures.)

{Section G2417.4.1; change to read as follows:}

G2417.4.1 (406.4.1) Test pressure. The test pressure to be used shall be no less than 3 psig (20 kPa gauge), or at the discretion of the Code Official, the piping and valves may be tested at a pressure of at least six (6) inches (152 mm) of mercury, measured with a manometer or slope gauge, For tests requiring a pressure of 3 psig, diaphragm gauges shall utilize a dial with a minimum diameter of three and one half inches (3 ½"), a set hand, 1/10 pound incrementation and pressure range not to exceed 6 psi for tests requiring a pressure of 3 psig. For tests requiring a pressure of 10 psig, diaphragm gauges shall utilize a dial with a minimum diameter of three and one-half inches (3 ½"), a set hand, a minimum of 2/10 pound incrementation and a pressure

range not to exceed 20 psi. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa) (1/2 psi) and less than 200 inches of water column pressure (52.2 kPa) (7.5 psi), the test pressure shall not be less than ten (10) pounds per square inch (69.6 kPa). For piping carrying gas at a pressure that exceeds 200 inches of water column (52.2 kPa) (7.5 psi), the test pressure shall be not less than one and one-half times the proposed maximum working pressure.

Diaphragm gauges used for testing must display a current calibration and be in good working condition. The appropriate test must be applied to the diaphragm gauge used for testing

(Reason: To provide for lesser pressures to coordinate with the use of more accurate diaphragm gauges.)

{Section G2417.4.2; change to read as follows:}

G2417.4.2 (406.4.2) Test duration. The test duration shall be held for a length of time satisfactory to the *Building Official*, but in no case for ~~be not~~ less than ~~10~~ fifteen (15) minutes. For welded *piping*, and for *piping* carrying gas at pressures in excess of fourteen (14) inches water column pressure (3.48 kPa), the test duration shall be held for a length of time satisfactory to the *Building Official*, but in no case for less than thirty (30) minutes.

(Reason: To comply with accepted regional practices.)

{Section G2420.1 (406.1); add Section G2420.1.4 to read as follows:}

G2420.1.4 Valves in CSST installations. Shutoff *valves* installed with corrugated stainless steel (CSST) *piping* systems shall be supported with an approved termination fitting, or equivalent support, suitable for the size of the *valves*, of adequate strength and quality, and located at intervals so as to prevent or damp out excessive vibration but in no case greater than 12-inches from the center of the *valve*. Supports shall be installed so as not to interfere with the free expansion and contraction of the system's *piping*, fittings, and *valves* between anchors. All *valves* and supports shall be designed and installed so they will not be disengaged by movement of the supporting *piping*.

(Reason: To provide proper security to CSST valves. These standards were established in this region in 1999 when CSST was an emerging technology.)

{Section G2420.5.1 (409.5.1); add text to read as follows:}

G2420.5.1 (409.5.1) Located within same room. The shutoff valve...*{bulk of paragraph unchanged}*... in accordance with the appliance manufacturer's instructions. A secondary shutoff valve must be installed within 3 feet (914 mm) of the firebox if appliance shutoff is located in the firebox.

(Reason: Reflects regional practice and provides an additional measure of safety.)

{Section G2421.1 (410.1); add text and Exception to read as follows:}

G2421.1 (410.1) Pressure regulators. A line *pressure regulator* shall be ... *{bulk of paragraph unchanged}*... *approved* for outdoor installation. Access to regulators shall comply with the requirements for access to appliances as specified in Section M1305.

Exception: A passageway or level service space is not required when the regulator is capable of being serviced and removed through the required attic opening.

(Reason: To require adequate access to regulators.)

{Section G2422.1.2.3 (411.1.3.3) Prohibited locations and penetrations; delete Exception 1 and Exception 4.}

(Reason: To comply with accepted regional practices.)

{Section G2445.2 (621.2); add Exception to read as follows:}

G2445.2 (621.2) Prohibited use. One or more *unvented room heaters* shall not be used as the sole source of comfort heating in a *dwelling unit*.

Exception: Existing approved unvented room heaters may continue to be used in dwelling units, in accordance with the code provisions in effect when installed, when approved by the Building Official unless an unsafe condition is determined to exist as described in International Fuel Gas Code Section 115.6 of the Fuel Gas Code.

(Reason: Gives code official discretion.)

{Section G2448.1.1 (624.1.1); change to read as follows:}

G2448.1.1 (624.1.1) Installation requirements. The requirements for *water heaters* relative to access, sizing, relief valves, drain pans and scald protection shall be in accordance with this *code*.

(Reason: To clarify installation requirements. Also corresponds with amendments regarding water heater access.)

{Section P2603.3; add to read as follows:}

P2603.3 Protection against corrosion. Metallic piping, except for cast iron, ductile iron and galvanized steel, shall not be placed in direct contact with steel framing members, concrete or masonry. Metallic piping shall not be placed in direct contact with corrosive soil. Where sheathing is used to prevent direct contact, the sheathing material thickness shall be not less than 0.008 inch (8 mil) (0.203 mm) and shall be made of an approved material ~~plastic~~. Where sheathing protects piping that penetrates concrete or masonry walls or floors, the sheathing shall be installed in a manner that allows movement of the piping within the sheathing.

(Reason: Allows for other materials to be accepted.)

{Section P2603.5.1 Sewer Depth; change to read as follows:}

P2603.5.1 Sewer depth. Building sewers that connect to private sewage disposal systems shall be not less than 12 inches below finished grade at the point of septic tank connection. Building sewers shall be not less than 12 inches below grade.

(Reason: Provides sewer depth that is common in this region. Deleted reference to private sewage disposal because a private sewage disposal code is not typically adopted in this region.)

{Section P2604; add to read as follows:}

P2604.2.1 Plastic sewer and DWV piping installation. Plastic sewer and DWV piping installed underground shall be installed in accordance with the manufacturer's installation instructions. Trench width shall be controlled to not exceed the outside the pipe diameter plus 16 inches or in a trench which has a controlled width equal to the nominal diameter of the piping multiplied by 1.25 plus 12 inches. The piping shall be bedded in 4 inches of granular fill and then backfilled compacting the side fill in 6-inch layers on each side of the piping. The compaction shall be to minimum of 85 percent standard proctor density and extend to a minimum of 6 inches above the top of the pipe.

(Reason: To follow manufacturer backfill requirements and to be clear to Inspectors out in the field.)

{Section P2801.6.1; change to read as follows:}

Section P2801.6.1 Pan size and drain. The pan shall be not less than 1 1/2 inches (38 mm) deep and shall be of sufficient size and shape to receive dripping or condensate from the tank or water heater. The pan shall be drained by an indirect waste pipe of not less than 3/4 inch (19 mm). Piping for safety pan drains shall be of those materials listed in Table P2906.5.

Multiple pan drains may terminate to a single discharge piping system when *approved* by the administrative authority and permitted by the manufactures installation instructions and installed with those instructions. {existing text unchanged}

(Reason: Regionally accepted practice.)

{Section P2804.6.1; change to read as follows:}

Section P2804.6.1 Requirements for discharge piping. The discharge piping serving a pressure relief valve, temperature relief valve or combination thereof shall:

1. Not be directly connected to the drainage system.
2. Discharge through an air gap.

3. Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.
4. Serve a single relief device and shall not connect to piping serving any other relief device or equipment.
5. Discharge to an approved location or to the outdoors.

[Remainder unchanged]

(Reason: To ensure the T&P is ran to the exterior.)

{Section P2902.5.3; change to read as follows:}

P2902.5.3 Lawn irrigation systems. The potable water supply to lawn irrigation systems shall be protected against backflow by an atmospheric-type vacuum breaker, a pressure-type vacuum breaker, a double-check assembly or a reduced pressure principle backflow preventer. A valve shall not be installed downstream from an atmospheric vacuum breaker. Where chemicals are introduced into the system, the potable water supply shall be protected against backflow by a reduced pressure principle backflow preventer.

(Reason: To provide clarity.)

{Section P3111Combination waste and vent systems; delete this section in its entirety.}

(Reason: A combination waste and vent system is not approved for use in residential construction.)

{Section P3112.2 Vent Connection; delete and replace with the following:}

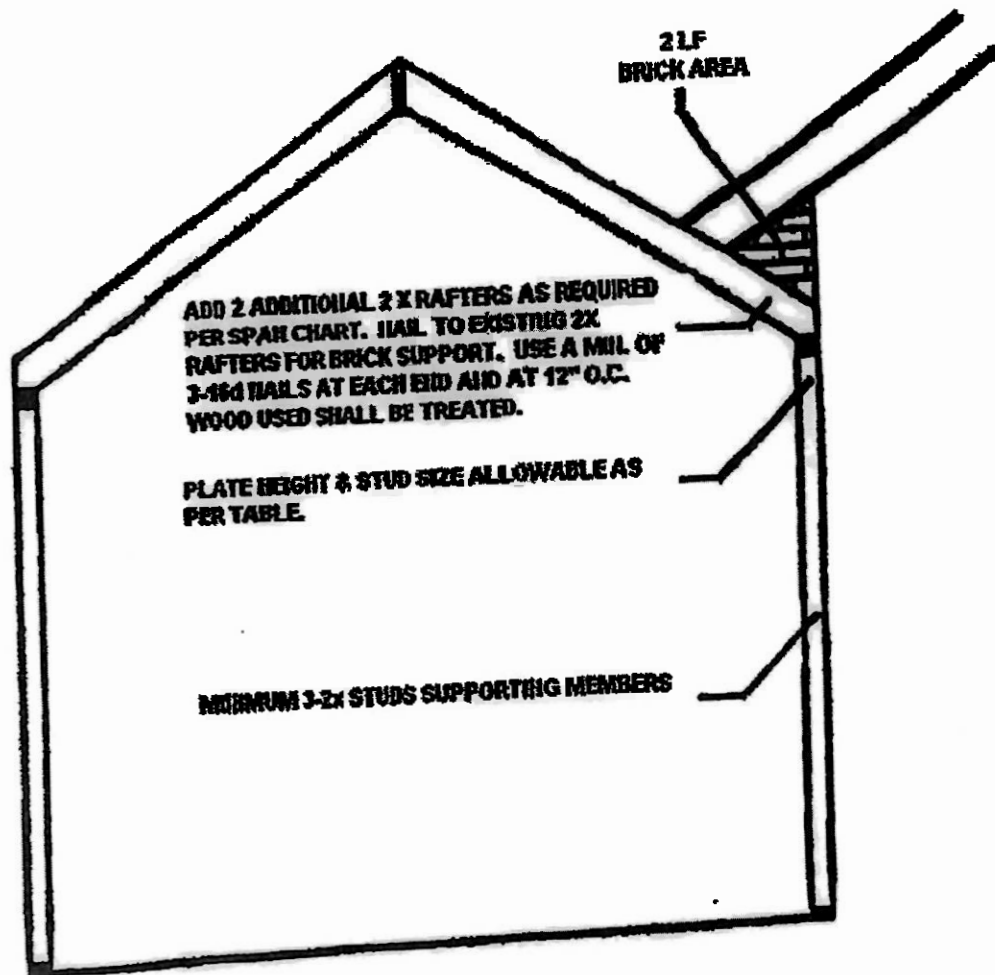
P3112.2 Installation. Traps for island sinks and similar equipment shall be roughed in above the floor and may be vented by extending the vent as high as possible, but not less than the drainboard height and then returning it downward and connecting it to the horizontal sink drain immediately downstream from the vertical fixture drain. The return vent shall be connected to the horizontal drain through a wye-branch fitting and shall, in addition, be provided with a foot vent taken off the vertical fixture vent by means of a wye-branch immediately below the floor and extending to the nearest partition and then through the roof to the open air or may be connected to other vents at a point not less than six (6) inches (152 mm) above the flood level rim of the fixtures served. Drainage fittings shall be used on all parts of the vent below the floor level and a minimum slope of one-quarter (1/4) inch per foot (20.9 mm/m) back to the drain shall be maintained. The return bend used under the drain-board shall be a one (1) piece fitting or an assembly of a forty-five (45) degree (0.79 radius), a ninety (90) degree (1.6 radius) and a forty-five (45) degree (0.79 radius) elbow in the order named. Pipe sizing shall be as elsewhere required in this Code. The island sink drain, upstream of the return vent, shall serve no other fixtures. An accessible cleanout shall be installed in the vertical portion of the foot vent.

(Reason: To clarify the installation of island venting and to provide a regional guideline on a standard installation method for this region.)

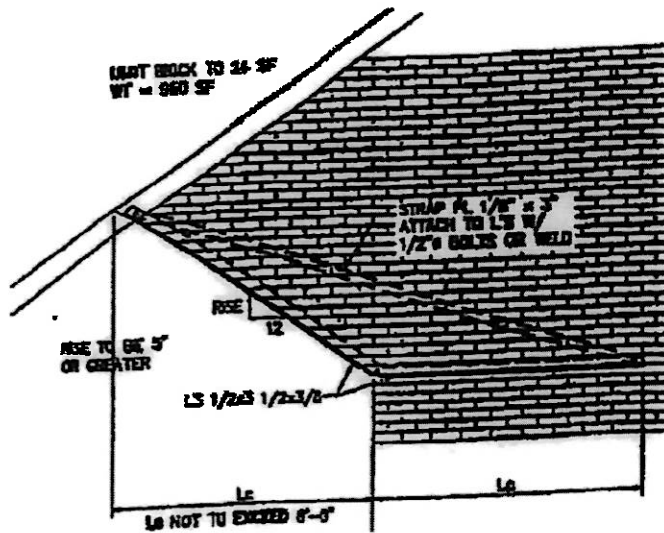
{Section 3201.7 Amend Table 3201.7 as follows:}

Table 3201.7 Size of traps for plumbing fixtures.

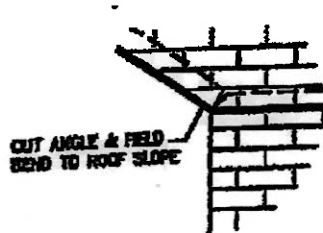
<u>Fixture</u>	<u>Min Trap size</u>
1. Bathtubs	2"
2. Bidet	1.5"
3. Clothes Washer	2"
4. Dishwasher	1.5"
5. Floor Drain	2"
6. Kitchen Sink	1.5"
7. Laundry tub	1.5"
8. Laboratory	1 ¼"
9. Shower up to 12.3 gpm	2"
More than 12.3 gpm	3"



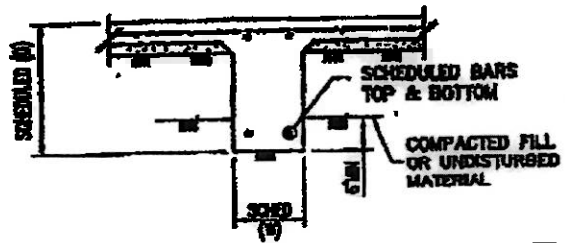
MASONRY FIGURE 1



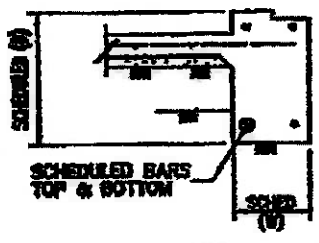
LINTELS OVER PITCHED ROOFS
 SCALE: 3/8" = 1'-0"



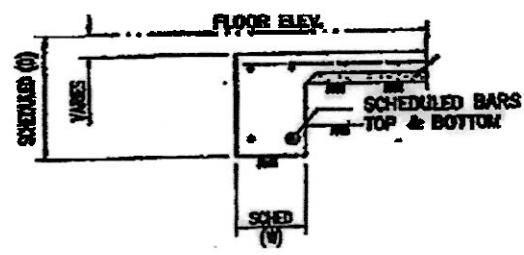
MASONRY FIGURE 2



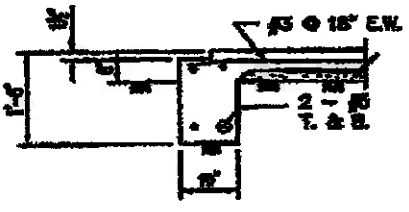
E — GARAGE INTERIOR BEAM



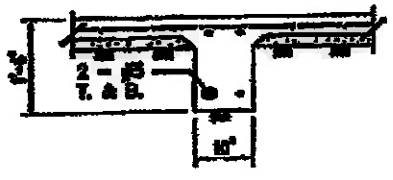
F — GARAGE EXTERIOR BEAM



G — GARAGE EXTERIOR BEAM AT ENTRANCE

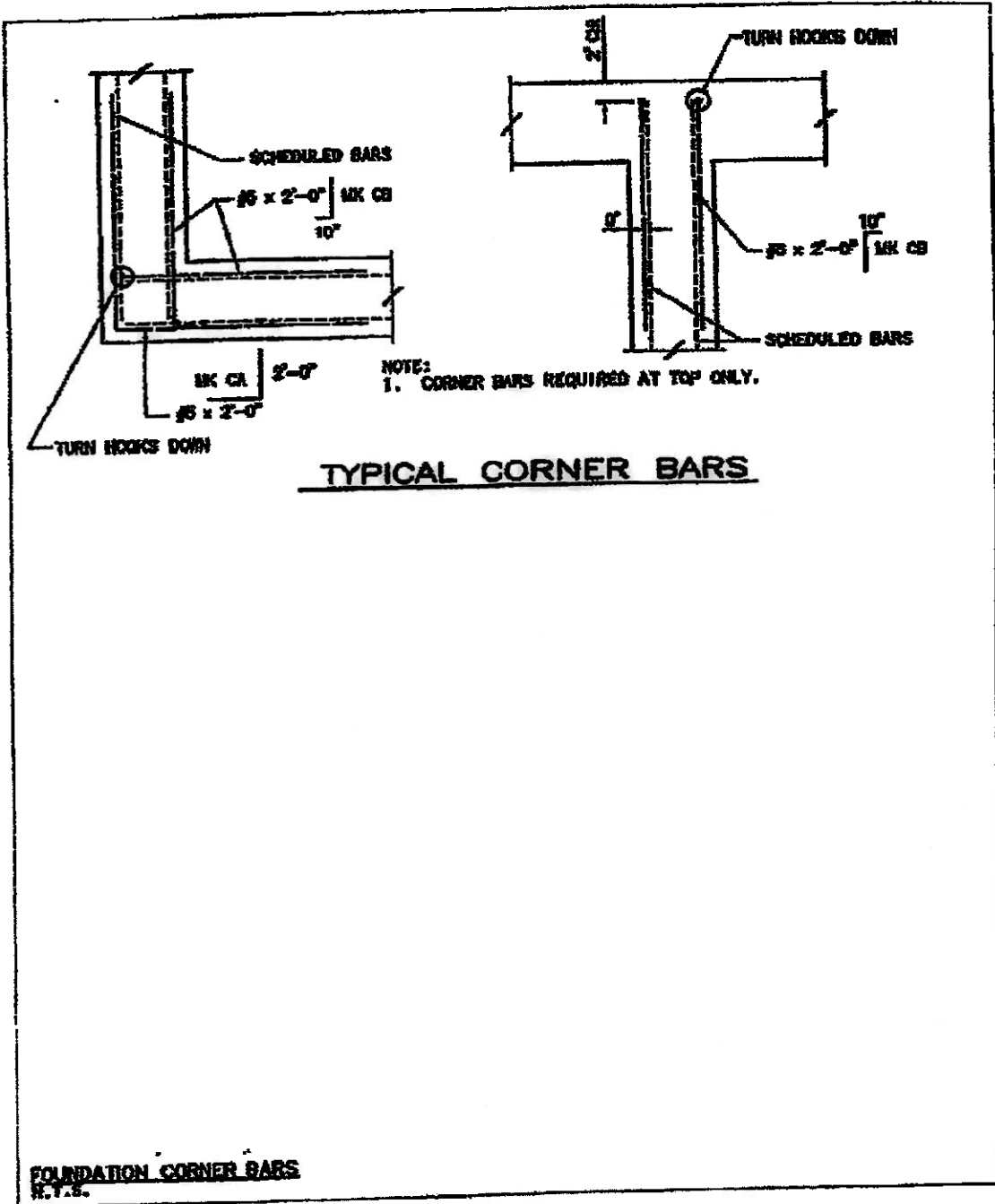


H — EXTERIOR BEAM DETACHED BLDG.



J — INTERIOR BEAM DETACHED BLDG.

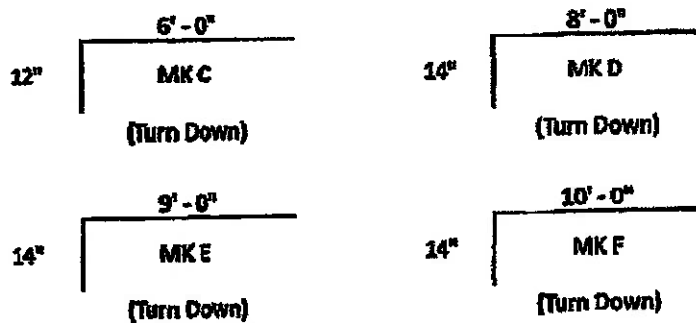
**GARAGE, PORCH, & DETACHED BLDG
FOUNDATION DETAILS**



Single Story Beam Schedule								
Plasticity Indices (PI)	Exterior Beams			Interior Beams				
	Beam Size W X D	No.	Size & Locn	Beam Size W X D	No.	Size & Locn	Added Top Each End	Stirrups Each End
25 or less	10 X 24	2	#5 T	10 X 24	2	#5 T	NOT REQUIRED	NOT REQUIRED
		2	#5 B		2	#5 B		
26 to 35	10 X 26	2	#6 T	10 X 26	2	#6 T	1 - #6 MK A	NOT REQUIRED
		2	#6 B		2	#5 B		
36 to 45	12 X 28	2	#6 T	12 X 28	2	#6 T	1 - #7 MK B	7 - #3 @ 12"
		2	#6 B		2	#6 B		



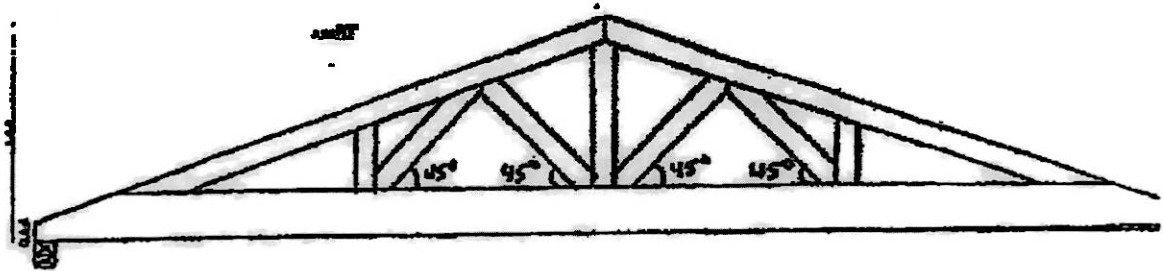
Two Story Beam Schedule								
Plasticity Indices (PI)	Exterior Beams			Interior Beams				
	Beam Size W X D	No.	Size & Locn	Beam Size W X D	No.	Size & Locn	Added Top Each End	Stirrups Each End
25 or less	10 X 28	2	#6 T	10 X 28	2	#6 T	1 - #6 MK C	4 - #3 @ 12"
		2	#6 B		2	#6 B		
26 to 30	12 X 28	2	#6 T	12 X 28	2	#6 T	2 - #7 MK D	5 - #3 @ 12"
		2	#6 B		2	#6 B		
31 to 35	12 X 30	2	#7 T	12 X 30	2	#7 T	2 - #7 MK E	6 - #3 @ 12"
		2	#7 B		2	#7 B		
36 to 45	12 X 34	2	#7 T	12 X 34	2	#7 T	2 - #7 MK F	7 - #3 @ 12"
		2	#7 B		2	#7 B		



General Notes:

- Use fill with P.I. (Plasticity Index) not to exceed 20; except where water table is encountered, use gravel, crushed stone or comparable material.
- Exterior and interior beams shall be a minimum depth below natural grade of 6". (Exception: when the exterior are placed on a compacted fill of 90% standard proctor density beams shall not be required to extend below natural grade, but shall be required to extend below finished grade a minimum of 6" into the compacted fill.) Exterior beams shall have a minimum of 9" of cover from the bottom of the beam. (See Detail A)
- All concrete shall be of a design mix to have a 28-day compressive strength of 3,000 p.s.i.
- Dead end beams not allowed except for corner support beams. Corner support beams shall pass through one intersecting beam and may dead end after connecting with the next intersecting beam. (See Detail on Concrete Foundation Sample Plan)
- All beam and slab reinforcing shall maintain minimum clearance of 2" from exterior forms on sides.
- All beam and slab reinforcing shall maintain minimum clearance of 3" from bottom of beams.
- Beam reinforcing shall be tied and supported every 4' - 0" minimum.
- Top corner reinforcing steel (bars) required at all perimeter beams. (See Typical Corner Bar Detail)
- LAP splices shall be in accordance with the following:
 - LAP #3 reinforcing steel (3/8" diameter bars) minimum 15"
 - LAP #4 reinforcing steel (1/2" diameter bars) minimum 20"
 - LAP #5 reinforcing steel (5/8" diameter bars) minimum 25"
 - LAP #6 reinforcing steel (3/4" diameter bars) minimum 30"
 - LAP #7 reinforcing steel (7/8" diameter bars) minimum 35"
- Anchor bolts -- spacing 6" O.C. (On Center) maximum. 12" from corners. 1/2" X 8" minimum size bolts.
- Provide chairs or other suitable supports for slab and beam reinforcing.
- All reinforcing except #3 reinforcing steel shall conform to ASTM grade 60-type steel. #3 reinforcing steel may be grade 40-type steel.
- Minimum slab thickness to be 4" and minimum reinforcing to be #3 bars at 18" B.W. (Both Ways)
- Beam sizes, spacing and reinforcing steel (bars) shall conform to the beam schedule. P.I. (Plasticity Index) shall be determined for each proposed building site in accordance with the United States Department of Agriculture Soil Conservation Services Soil Survey of Taylor County, Texas, 1976. Exception: One soil test per 2500 square foot of foundation footprint shall be collected and tested by an approved testing agency. Spacing of multiple tests shall be in accordance with accepted engineering practices. Foundations for structures resting on soils with a P.I. greater than 40 shall be designed by an engineer licensed by the State of Texas.
- A foundation plan shall be required for all construction.

KING TRUSS BEAM
Figure 502.5



1. Truss span maximum 24'.
2. 2 x 12 bottom chord; 2 x 6 top cord; 2 x 6 Webs at 45 degrees. All members to be continuous.
3. 4 1/4" minimum heel height.
4. 4/12 minimum pitch.
5. 4' x 8' x 1/2" O.S.B or C.D. plywood lengthwise over joints on both sides of truss.
6. Equal perpendicular bracing both ways to truss to eliminate rotation or leaning of truss.
7. Solid blocking at bottom of 2 x 12's.
8. Material to be No. 2 SPF or better.

FIGURE R-311.7.8.4-A

