



City of Harker
Heights
July 15, 2022
Contractors Meeting



- Inspection request Change.
- Residential New Construction submittal documents.
- Fences-Height and placement restrictions.
- Top Failures: Plumbing soil, Foundation, FEMP, Insulation, Final.
- Multiple failures.
- Open discussion. Q&A for inspections
- Questions.



Inspection Request Change.

- Cut off for inspection request is 4PM the day prior.
- Inspection will be performed between 8am and 5pm.
- Applies to online and hot-line requests
- Effective date was June 13, 2022.
- Exception-Utility connect at occupied residence.



Submittal documents for permitting Residential new house:

Manual J, S and D.

- Shall be based on ACCA Manuals regardless of the software used
- Manual J should include at a minimum the Climate zone used, the temperature design, the R-values of ceiling and walls, the window size and types, the building orientation, the number of people, the Appliance information.
- Manual D should include, at a minimum, Design airflow (cfm), the external Static pressure, the Component pressure losses, the available static pressure, the longest supply, the, longest return, the total Effective Length, and the friction rate
- Side note a Manual J is required should an existing system be changed out



Submittal documents for permitting Residential new house: Rescheck

This shall be based on the 2021 I-Codes.

- R-49 in ceiling
- R-13 in the walls
- Climate zone 2A

TABLE R402.1.3 INSULATION MINIMUM R-VALUES AND FENESTRATION REQUIREMENTS BY COMPONENT¹

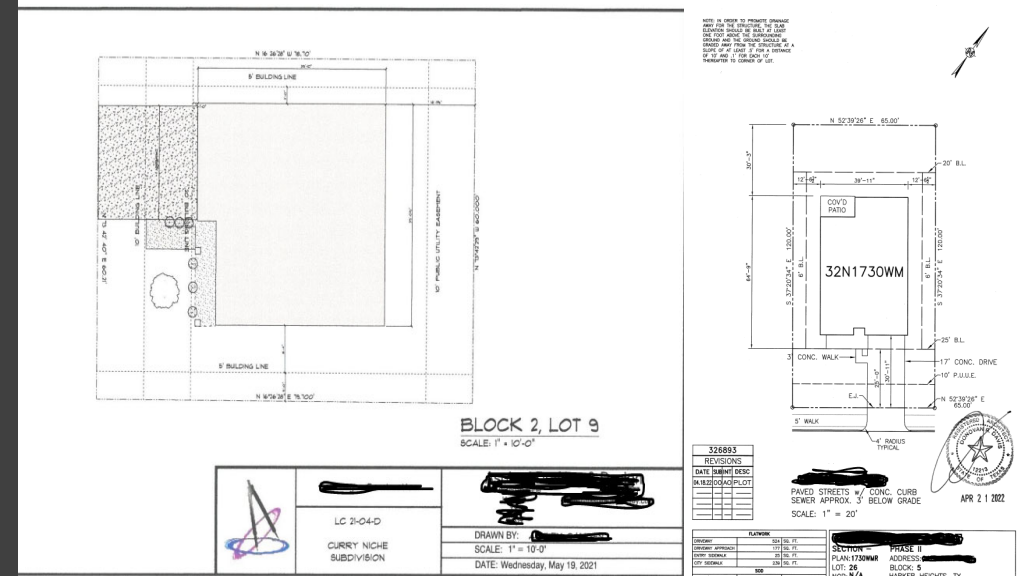


CLIMATE ZONE	FENESTRATION U-FACTOR ^{b, i}	SKYLIGHT ^b U-FACTOR	GLAZED FENESTRATION SHGC ^{b, e}	CEILING R-VALUE	WOOD FRAME WALL R-VALUE ^g	MASS WALL R-VALUE ^h	FLOOR R-VALUE	BASEMENT ^{c, g} WALL R-VALUE	SLAB ^d R-VALUE & DEPTH	CRAWL SPACE ^{c, g} WALL R-VALUE
0	NR	0.75	0.25	30	13 or 0& 10ci	3/4	13	0	0	0
1	NR	0.75	0.25	30	13 or 0& 10ci	3/4	13	0	0	0
2	0.40	0.65	0.25	49	13 or 0& 10ci	4/6	13	0	0	0
3	.30	0.55	0.25	49	20 or 13& 5ci ^h or 0& 15ci ^h	8/13	19	5ci or 13 ^f	10ci, 2 ft	5ci or 13 ^f
4 except Marine	.30	0.55	0.40	60	30 or 20& 5ci ^h or 13& 10ci ^h or 0& 20ci ^h	8/13	19	10ci or 13	10ci, 4 ft	10ci or 13
5 and Marine 4	0.30 ^j	0.55	0.40	60	30 or 20& 5ci ^h or 13& 10ci ^h or 0& 20ci ^h	13/17	30	15ci or 19 or 13& 5ci	10ci, 4 ft	15ci or 19 or 13& 5ci
6	0.30 ^j	0.55	NR	60	30 or 20& 5ci ^h or 13& 10ci ^h or 0& 20ci ^h	15/20	30	15ci or 19 or 13& 5ci	10ci, 4 ft	15ci or 19 or 13& 5ci
7 and 8	0.30 ^j	0.55	NR	60	30 or 20& 5ci ^h or 13& 10ci ^h or 0& 20ci ^h	19/21	38	15ci or 19 or 13& 5ci	10ci, 4 ft	15ci or 19 or 13& 5ci



Submittal documents for permitting Residential new house:
Site plan/survey

- Square footage of building
- Foot-print of building
- Location of building on property
- Distance from side, rear and front property lines.
- Parking/Flat work
- Subdivision, lot and block
- Any patios or porches.
- Any easements





Submittal documents for permitting
Residential new house: Landscape plan

Please include the minimum number of trees
and shrubs

- 2 trees: 2" caliber measured up 12" from the root ball.
- 8 Shrubs: Minimum 3 gallon
- Existing trees and shrubs may meet this requirement.
- Note that all vegetation disturbed during construction will be replaced. (On or off property)
- Seed is allowed provided full growth is in place by final inspection.



Submittal documents for permitting Residential new house: House layout

- Include locations of plugs (outside and inside)
- GFCI protection
- Appliances
- Plumbing fixtures
- Equipment (water heater, electric service location etc.)
- Doors/windows/egress
- Attic access location



Submittal documents for permitting
Residential new house: Engineered plans.

Any plans that are engineered must
include details.

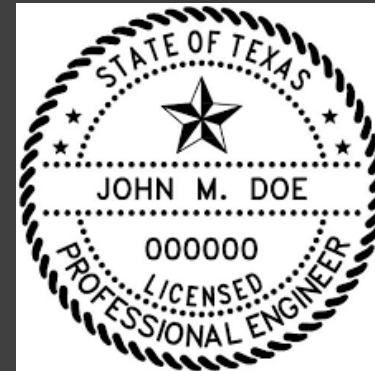
- Foundations
- Compaction test
- Piers
- Wind-bracing
- Trusses (floor/ceiling)



Submittal documents for permitting
Residential new house: Other items

Other items may be required based on
submittal documents.

Where special conditions exist, the
building official is authorized to require
additional construction documents to be
prepared by a registered Texas design
professional.





Fences-Height and restrictions. 150.33

Corner Lots

- (D) Fences built on a side yard shall be placed on the property line.

(1) Fences built on a side yard facing a public street may be placed on the property line. When the side yard is adjacent to the adjoining property's front yard, the side yard fences may not exceed four feet in height unless they are set back to the adjoining properties front yard setback line.



Fences: Newly added

(E) Fences on property that are at the intersection of two streets must not encroach within any visibility triangle.

The visibility triangle shall mean a triangle sight area, at all intersections, which shall include that portion of public right-of-way and any corner lot within the adjacent curb lines and a diagonal line intersecting such curb lines at points fifty (50) feet back from their intersection (such curb lines being extended if necessary to determine the intersection point). The visibility triangle shall also be required in the same manner at intersections of a driveway or access point with the public right-of-way. This sight distance triangle must be kept free of fences that would obstruct the motorist's views of oncoming traffic.



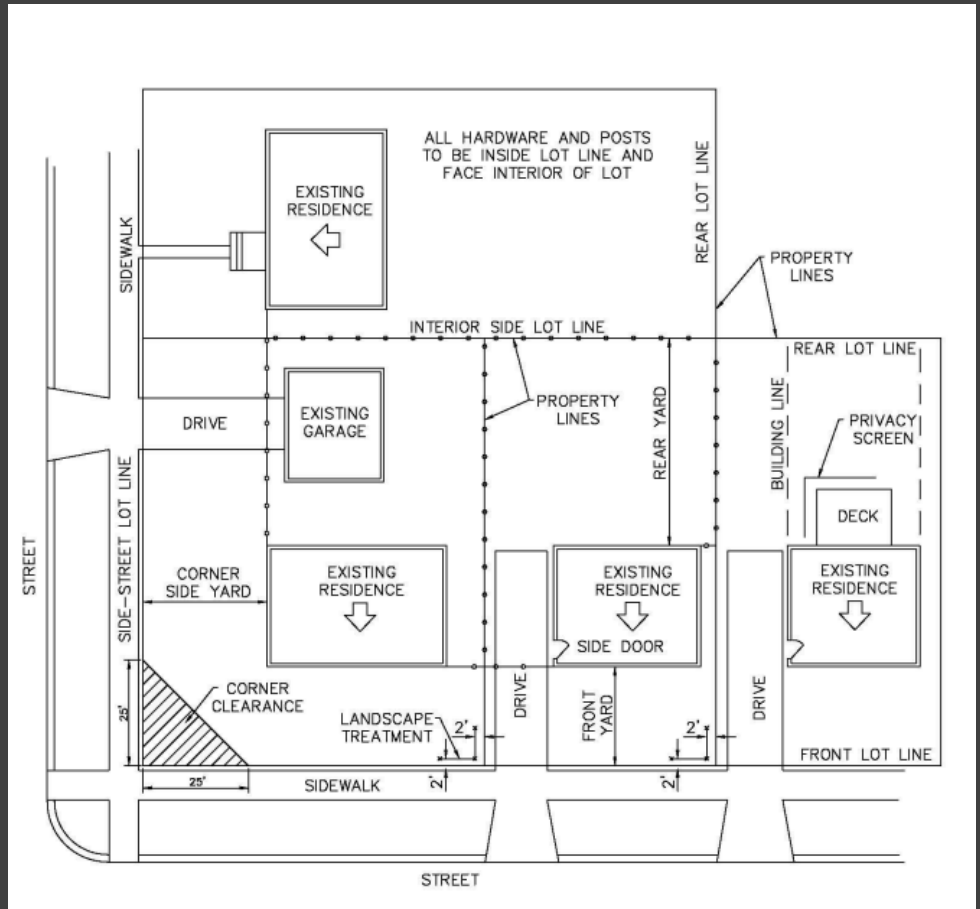
Fences: Newly added

(F) An applicant may submit an alternative fence design for side yard fences on corner lots to the city's Planning and Development Director.

(1) The alternative fence design shall allow for a clear line of sight within the visibility triangle, be in accordance with American Association of State Highway and Transportation Officials (AASHTO) standards and follow standard engineering practices. The city's Planning and Development Director may approve an alternate fence design.

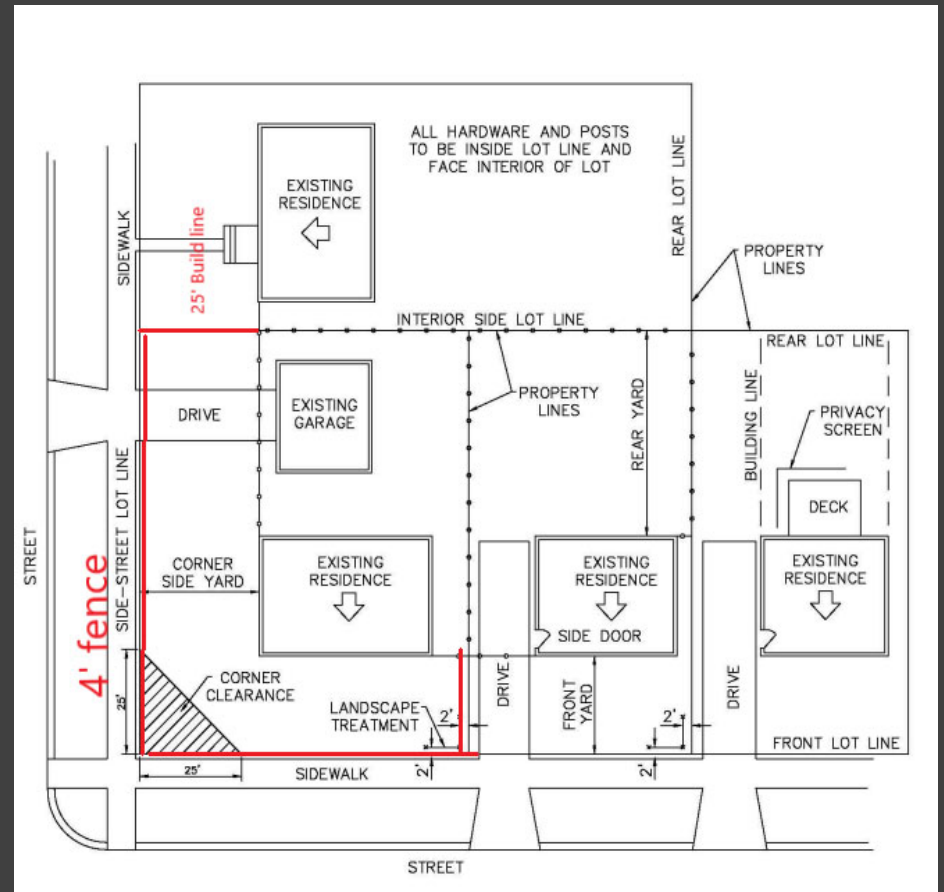


What does this mean to you:





Fences:





Fences:

Lots over 5 acres and front yards

(C) On premises five acres or larger in size, fences may not be greater than five feet in height. Otherwise, fences and gates built in the front yard within the 25-foot building setback, where permitted, shall not exceed four feet in height and must be constructed of chain link, wrought iron, or other semitransparent materials as approved by the Building Official.



Fences:

Alternative material over 6' in height.

(B) Except as provided in division (A), fences may be constructed only of masonry, cedar, redwood, treated lumber, chain link, or decorative iron, and no other materials are permitted unless approved in writing by the Building Official. Wooden fence material placed in contact with the earth shall be treated to protect the material from rot, decay, and termites.



Fences:

Alternative material over 6' in height.

(C) (1) The use of any alternative fence materials must be approved by the Building Official. Such authorization shall be based on specific proposals that demonstrate superior craftsmanship, aesthetic harmony with and enhancement of the streetscape and the neighborhood, structural integrity, durability, safety, and overall design exceeding the standards under § 150.36.

(2) Alternative fence materials exceeding six feet in height must be approved in writing by the Director of Planning and Development and the Building Official.

(D) All fences must be maintained in good order and repair.



Fences: In easements-Drainage

Any fence built in or across utility easements shall remain the responsibility of the property owner. In the event that the fence is constructed on an easement and the fence is subsequently damaged or destroyed through the exercise of the rights of the owner of the easement, the repair or replacement of the fence shall be the sole responsibility of the property owner.



Fences: Drainage Easements.

Fences may not be placed within a drainage easement or impede the natural or designed flow.

Based on topography, flow and other conditions a fence that would not change or restrict the flow of run-off may be allowed. (chain link, wrought iron) within a drainage easement. Drainage calculations may or may not be required based on conditions.



Top failures for new construction

Plumbing Rough/ Soil:

- Lack of 5' head pressure on sewer.
- Low or no pressure on water lines
- Water heater not plumbed for recirculation pump were required
- Water/Sewer lines not sleeved where leaving slab.



Top failures for new construction
Plumbing Rough/soil





Top failures for new construction
Plumbing rough/soil

607.2 Hot or tempered water supply to fixtures.

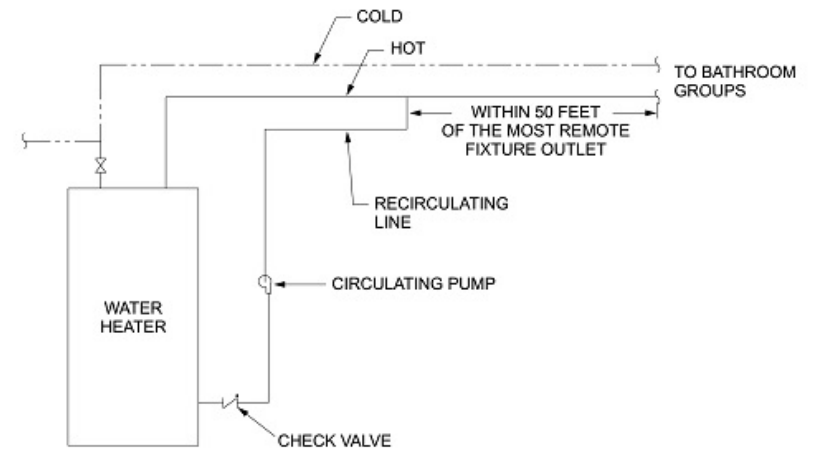
The developed length of hot or tempered water piping, from the source of hot water to the fixtures that require hot or tempered water, shall not exceed 50 feet (15 240 mm).

Recirculating system piping and heat-traced piping shall be considered to be sources of hot or tempered water.

❖ A significant amount of water can be wasted by a fixture user while waiting for hot water to arrive at the fixture. In addition to being an inconvenience, the costs for the water, for the energy to heat the water and for the disposal of the water are literally going down the drain. There will be less waste and inconvenience at the fixture where the source of hot water is located near to the fixture.



Top failures for new construction Plumbing rough/soil/water line





Top failures for new construction
Foundation.

R506.2.3 Vapor retarder.

A minimum 10-mil (0.010 inch; 0.254 mm) vapor retarder conforming to ASTM E1745 Class A requirements with joints lapped not less than 6 inches (152 mm) shall be placed between the concrete floor slab and the base course or the prepared subgrade where a base course does not exist.



Top failures for new construction

-Foundation

R403.1.4 Minimum depth.

Exterior footings shall be placed not less than 12 inches (305 mm) below the undisturbed ground surface.



Top failures for new construction

-Foundations

Piers

All foundations placed on piers shall be designed by a Texas Design Professional and the design must include stamped details.



Top failures for new construction

FEMP

- No water on the Drain, waste and vent test
- Altered engineered trusses
- Fire/smoke blocking
- House wrap
- Restoration of top plate



Top failures for new construction

-FEMP

P2503.5 Drain, waste and vent systems testing.

Rough-in and finished plumbing installations of drain, waste and vent systems shall be tested in accordance with Sections P2503.5.1 and P2503.5.2

Each section shall be filled with water to a point not less than ~~10 feet~~ **5 feet** above the highest fitting connection in that section, or to the highest point in the completed system. Water shall be held in the section under test for a period of 15 minutes. The system shall prove leak free by visual inspection.



Top failures for new construction

-FEMP

Damaged/altered truss

Sealing between floors.





Top failures for new construction

-Fire/smoke blocking.

R302.11 Fireblocking.

In combustible construction, fireblocking shall be provided to cut off both vertical and horizontal concealed draft openings and to form an effective fire barrier between stories, and between a top story and the roof space.

Fireblocking shall be provided in wood-framed construction in the following locations:

1. In concealed spaces of stud walls and partitions, including furred spaces and parallel rows of studs or staggered studs, as follows:
 - 1.1. Vertically at the ceiling and floor levels.
 - 1.2. Horizontally at intervals not exceeding 10 feet (3048 mm)



Top failures for new construction

-Draft-stopping

R302.12Draftstopping.

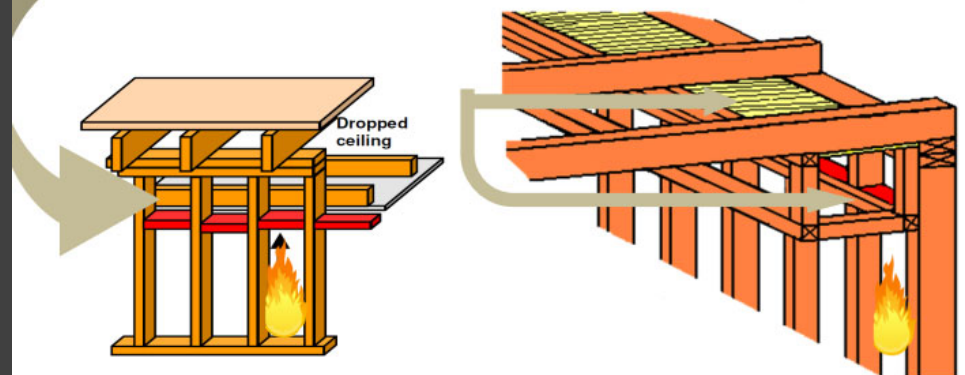
In combustible construction where there is usable space both above and below the concealed space of a floor-ceiling assembly, draftstops shall be installed so that the area of the concealed space does not exceed 1,000 square feet (92.9 m²). Draftstopping shall divide the concealed space into approximately equal areas



Top failures for new construction Fire/smoke blocking

1. In concealed spaces of stud walls and partitions, including furred spaces (open space between foundation wall and framed wall) and parallel rows of studs or staggered studs, as follows:
 - Vertically at the ceiling and floor levels.
 - Horizontally at intervals not exceeding 10 feet

2. At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings and cove ceilings.





Top failures for new construction

-House Wrap

R703.2 Water-resistive barrier.

Not fewer than one layer of water-resistive barrier shall be applied over studs or sheathing of all exterior walls with flashing as indicated in Section R703.4, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer. The water-resistive barrier material shall be continuous to the top of walls and terminated at penetrations and building appendages in a manner to meet the requirements of the exterior wall envelope as described in Section R703.1

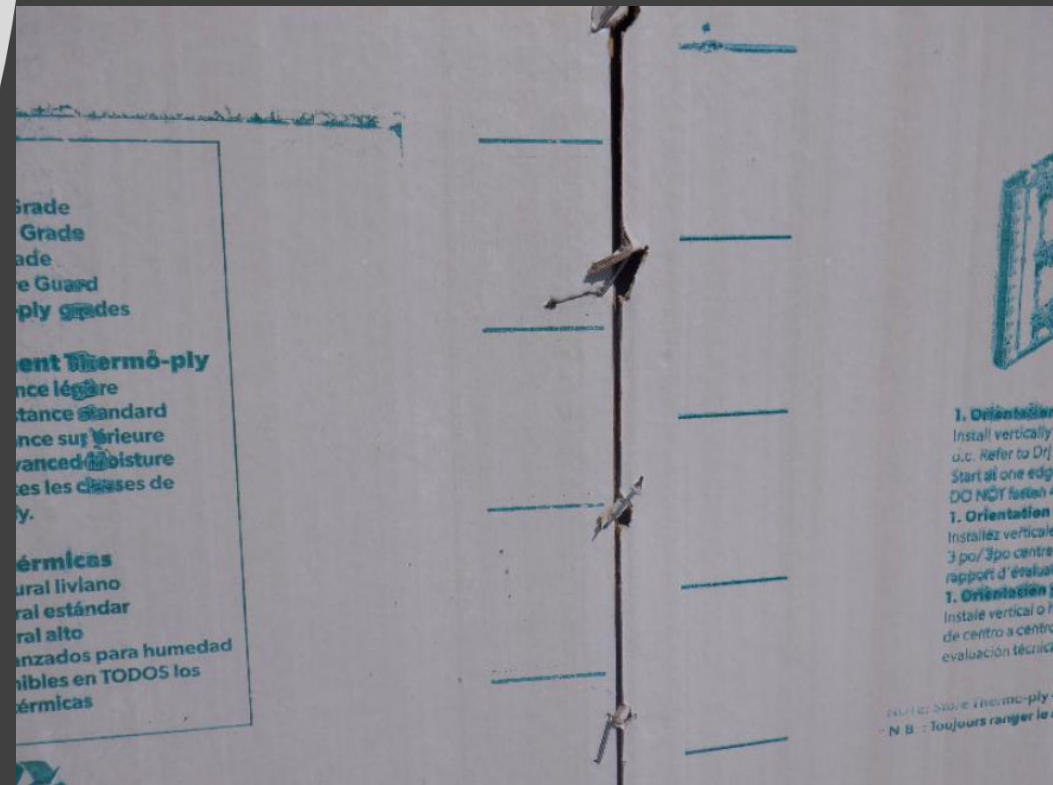


Top failures for new construction





Top failures for new construction T-Ply





Top failures for new construction
-Insulation





Top failures for new construction



Apr 21, 2022 at 10:08:21 AM
Stillhouse Lake Rd
Harker Heights TX 76548
United States



Top failures for new construction

Final

- T&P termination
- Expansion tank installation
- Final inspection is not a Certificate of Occupancy. A C/O must be issued prior to the occupancy of the house.



Multiple failures:

“Due to the number of deficiencies further items may be found at reinspection”

Number of deficiencies before inspection is stopped depends on the type of inspection and the conditions present.

Sometimes missed items are found at reinspection. This should not be the norm but can happen.



Inspection Report

Inspection Date:
6/30/2022 3:56:00 PM

Print

FAILED

[REDACTED] should contact Harker Heights at
(254) 953-5600 for further information.

Project Number	Work Order ID	Inspection ID
21-21795	18167012	14054244

Jurisdiction	Inspection type	Inspector
Harker Heights	Building Final	Eric Moree I-3747

Customer	Address	Phone
[REDACTED]	[REDACTED] Heights , TX 76548	[REDACTED]

Scheduled	Completed	Uploaded
6/30/2022 8:00:00 AM	6/30/2022 3:56:00 PM	6/30/2022 3:58:04 PM

Details

Bldg Final, [REDACTED] 1. Landscaping. 2. Orange construction barrier. 3. Turn pan drain line down. 4. Install fence panel on back right side. 5. Valve box covers. 6. Irrigator's warranty sticker on the control panel. 7. Disable the overhead garage door locks. 8. Missing control for overhead garage door. 9. Seal penetrations in water heater close fire separation wall. 10. Adjust tension on garage entry door hinge to self-close and self-latch. 11. Front door seals. 12. Insulation depth markers over garage attic space, 1 per 300 sq ft of area facing the opening. 13. Blower door/duct leakage test report w/energy certificate on the sub-panel and backflow test report. 14. Vented hood duct connection. 15. Label GFCI protected receptacles under kitchen sink, on wall behind kitchen sink, and master bath. 16. Provide ladder for inspection of attic space over master bedroom. 16. Insulation depth markers over living room attic space, 1 per 300 sq ft of area facing the opening. Panel cover w/weather stripping and R13 insulation attached. 17. Insulation depth markers over upstairs attic space, 1 per 300 sq ft of area facing the opening. Panel cover w/R38 insulation attached.



Inspection Report

Inspection Date:
7/11/2022 10:50:00 AM

Print

FAILED

[REDACTED] should contact Harker Heights at
(254) 953-5600 for further information.

Project Number	Work Order ID	Inspection ID
21-21795	18213703	14085491

Jurisdiction	Inspection type	Inspector
Harker Heights	Building Final	Eric Moree I-3747

Customer	Address	Phone
[REDACTED]	[REDACTED] Heights , TX 76548	[REDACTED]

Scheduled	Completed	Uploaded
7/12/2022 8:00:00 AM	7/11/2022 10:50:00 AM	7/11/2022 10:55:07 AM

Details

Bldg Final, [REDACTED] 1. Turn pan drain line down. Drain lines must terminate above grade, no less than 6" and turned down toward grade, they can not terminate to a dry well. 2. Irrigator's warranty sticker on the control panel. 3. Disable the overhead garage door locks. 4. Missing control for overhead garage door. 5. Insulation depth markers over garage attic space, 1 per 300 sq ft of area facing the opening. 6. Blower door/duct leakage test repor. 7. Attic access for master shall have a cover w/R38 insulation attached and weather stripping. Insufficient insulation on backside t-ply backer boards and need to blow in enough for R38. Provide ladder for re-inspection of attic space over master bedroom. 8. Remove panel for reinspection over living room for re-inspection of Insulation depth markers over living room attic space, 1 per 300 sq ft of area facing the opening. Panel cover w/weather stripping and R13 insulation attached. 9 Insulation depth markers over upstairs attic space not properly installed 1 per 300 sq ft of area facing the opening. Insufficient insulation around attic access.



Inspection Report

Inspection Date:
5/25/2022 3:47:00 PM

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[REDACTED] should contact Harker Heights at
(254) 953-5600 for further information.

Project Number	Work Order ID	Inspection ID
21-21756	16842795	12524855

Jurisdiction	Inspection type	Inspector
Harker Heights	Building Final	Eric Moree I-3747

Customer	Address	Phone
[REDACTED]	[REDACTED] Heights , TX 76548	[REDACTED]

Scheduled	Completed	Uploaded
5/25/2022 8:00:00 AM	5/25/2022 3:47:00 PM	5/25/2022 3:47:36 PM

Details

Bldg Final, [REDACTED] House not ready. 1. Cleanup mud in the street. 2. Irrigation permit not approved, paid for or inspected. 3. Landscaping. 4. Inspection not completed.



Inspection Report

Inspection Date:
6/7/2022 4:39:00 PM

Print

FAILED

[REDACTED] should contact Harker Heights at
(254) 953-5600 for further information.

Project Number	Work Order ID	Inspection ID
21-21756	18050811	13947753

Jurisdiction	Inspection type	Inspector
Harker Heights	Building Final	Eric Moree I-3747

Customer	Address	Phone
[REDACTED]	[REDACTED] Heights , TX 76548	[REDACTED]

Scheduled	Completed	Uploaded
6/7/2022 8:00:00 AM	6/7/2022 4:39:00 PM	6/7/2022 4:40:57 PM

Details

Bldg Final [REDACTED] 1. Valve box covers. 2. Cover irrigation lines. 3. Landscaping. 4. Emergency disconnect labeling of MSP. 5. Tamper proof lugs for freon ports. 6. Masonry around HVAC conduits not sealed. 7. Pan drain lines terminated below grade. 8. Silt-screening in back. 9. Provide ladder for inspection of attic space over garage. 10. Blower door/duct leakage and backflow test reports. 11. GFCI label protected receptacle on kitchen island and under kitchen sink. 12. Guards for fall protection missing. 13. Upstairs AC inop. 14. Upstairs family room broken window. 15. Master bath receptacle labeled GFCI protected but is not protected. 16. Attic stairs not installed IAW manufactures instructions w 3" lag screws (2 1/2" used) or 2-16d nails on all sides. 16. Frame attic access and provide cover w/R38 isolation attached. 17. Due to the number of items more may be found at reinspection.



Inspection Report

Inspection Date:
6/13/2022 4:10:00 PM

[Print](#)

FAILED

[REDACTED] should contact Harker Heights at
(254) 953-5600 for further information.

Project Number	Work Order ID	Inspection ID
21-21756	18071097	13971721

Jurisdiction	Inspection type	Inspector
Harker Heights	Building Final	Eric Moree I-3747

Customer	Address	Phone
[REDACTED]	[REDACTED] Heights , TX 76548	[REDACTED]

Scheduled	Completed	Uploaded
6/13/2022 8:00:00 AM	6/13/2022 4:10:00 PM	6/13/2022 4:11:04 PM

Details
Bldg Final [REDACTED] 1. Set valve box covers flush w/grade. 2. Tamper proof lugs for freon ports. 3. Masonry around HVAC conduits not sealed. 4. Provide ladder for inspection of attic space over garage. 5. Blower door/duct leakage w/ energy certificate on sub-panel and backflow test reports. 6. GFCI label protected receptacle on kitchen island and under kitchen sink. 7. Guards for fall protection missing. 8. Upstairs family room broken window. 9. Master bath receptacle labeled GFCI protected but is not protected. 10. Frame attic access and provide cover w/R38 isolation attached.



Inspection Report

Inspection Date:
6/14/2022 3:12:00 PM

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FAILED

[REDACTED] should contact Harker Heights at
(254) 953-5600 for further information.

Project Number	Work Order ID	Inspection ID
21-21756	18084267	13978192

Jurisdiction	Inspection type	Inspector
Harker Heights	Building Final	Eric Moree I-3747

Customer	Address	Phone
[REDACTED]	[REDACTED] Heights , TX 76548	[REDACTED]

Scheduled	Completed	Uploaded
6/14/2022 8:00:00 AM	6/14/2022 3:12:00 PM	6/14/2022 3:12:37 PM

Details
Bldg Final [REDACTED] Unresolved: 1. Install protective strip for electrical runs crossing over ceiling joist within 6' of the opening. Provide ladder for re-inspection. 2. Blower door/duct leakage and backflow test reports. 3. Upstairs family room broken window. 4. Master bath receptacle labeled GFCI protected but is not protected.

Open discussion-Questions and Answer





Thank you for attending.

Michael Beard, CBO, CFM
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