

TOWN of LITTLE ELM

**DESIGN & DOCUMENTATION
REQUIREMENTS FOR
RESIDENTIAL CONSTRUCTION**



Building Safety Division

**Town of Little Elm
100 West Eldorado Parkway
Little Elm, Texas
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For printable forms go to the Town's website:

www.littleelm.org/buildingsafety

Design & Documentation for Residential Structural Foundations

Engineer's Letter with each foundation Design Shall Include:

1. Reference to the builder's name and plat number.
2. Subject property address, Lot and Block, Sub-division and phase.
3. Acknowledgement that the structural engineers have been retained by the builder to perform pre-pour foundation inspection(s) prior to placing concrete.
4. **Current applicable code compliance including 2012 International Residential Code.**

Engineers design drawing:

1. Foundation Design must be site specific to the Lot and Block indicated on the engineers' letter.
2. Requirements, if any, for soils pre treatment prior to form work or excavation must be clearly indicated on the design drawing.
3. All hold harmless notes regarding option to retain the engineer for inspection must be removed.
4. Design engineer's inspection required.

Engineers Foundation Inspection and Subsequent Letter of Acceptance:

1. The engineer's inspection of the work, if acceptable, shall be tagged indicating it.
2. Within (5) five working days after the inspection and acceptance, written conformation must be mailed to both the builder and the Town of Little Elm Building Inspection Department, Attn: Building Official.
3. On specific pads with a PVR of 4 1/2" or greater where the builder has elected to pour a structural slab on grade, all records of soils pretreatment must be indicated along with documentation and inspection reports of soil pre-wetting and (or) any other means of stabilization.
4. The letter shall reference the subject property, date and time of the inspection along with the name of the inspector.

Form Board Survey

1. The form board survey shall be made available on-site to the Town of Little Elm Building Inspector at time of the plumbing rough inspection and shall include setback information, top of form elevation, and all easements.

Rough Grading:

1. After placement of concrete, lots shall be rough graded to provide positive drainage away from foundation & shall be maintained throughout the construction process.

RESIDENTIAL MASONRY CONSTRUCTION (106-76 of the Little Elm Code of Ordinances)

EXTERIOR CONSTRUCTION OF MAIN BUILDINGS:

1. The following architectural design standards shall apply to all single-family residential and duplex development:
 - i. The exterior facades of a main building or structure in all districts shall be constructed of 100 percent masonry finishing material that is comprised of brick, stone, stucco, or a combination thereof.
 - ii. Cementitious fiberboard may constitute 50 percent of stories other than the first floor. Cementitious fiberboard may also be used for architectural features, including window box-outs, bay windows, roof dormers, columns, chimneys not part of an exterior wall, or other architectural features approved by the Building Official.

DETACHED GARAGE AND ACCESSORY BUILDING CONSTRUCTION:

- A. The exterior facades of a detached garage or other accessory building or structure shall be constructed of the same exterior construction material as the main building or structure.
- B. Cementitious fiberboard may be used to fulfill masonry requirements for an accessory building or structure of 200 square feet or less in a single-family or two-family district, and Cementitious fiberboard may be used to fulfill masonry requirements for structures accessory to an existing primary structure constructed entirely of wood or vinyl siding.
- C. Metal or wood may be used as an exterior construction material for an accessory building or structure of 120 square feet or less in a single-family or two-family district.

Contractor Registration

Any contractors, who are required by state law or local ordinance to be licensed, must register with the Town of Little Elm before an application for permit may be completed. A master license in the specific trade is required to register as a contractor. Any work discovered being performed without the required licensed personnel shall be identified and marked to prevent reuse and shall be removed. Multiple violations of licensure requirements may result in suspension of the Contractor's Registration, including the right to obtain permits to work in this Town. A sub-contractor is defined as an electrician, plumber, HVAC (mechanical), irrigator, backflow tester, sign contractor, and energy contractor. All sub-contractors are required to be registered with the Town.

Contractors (General, Electric, Plumbing, Mechanical, Fence, Irrigation, Backflow Tester, Sign)

1. A valid license is required at the time of registration.
2. One hundred dollar (\$100) registration fee.

Permit Application

1. Prior to filling out a new one family dwelling, irrigation or fence permit online, all sub-contractors must be registered. All the required fields on the application shall be filled in completely.
2. Applicant will identify and describe the work to be covered by the permit for which the application is made, required subdivision setbacks shall be on application
3. Describe the land on which the proposed work is to be done by legal description, street address or similar description. It must be a recorded parcel with a lot and block number.
4. State the valuation of the proposed work.
5. Application must be signed by the applicant, or the applicant's authorized agent.
6. Give such other data and information as required.

NOTE: It shall be unlawful for any person, firm or corporation to erect, construct, alter, extend, repair, move, demolish or occupy any building, structure or equipment regulated by the code or cause same to be done, in conflict with or in violation of any of the provisions of the code.

Plan submission package

Along with the permit application forms, the following documents are required to be submitted electronically:

1. Plot plan – containing lot dimensions, plan footprint, set-backs all sides, complete address, lot and block, subdivision & phase, easement locations, drive-way location(s), Engineers name & Builders name, finish pad elevation, finished floor elevation, sidewalk location, fence location, lot area, slab area and coverage percentage.
2. Foundation plans designed and sealed by an Engineer, project specific.
3. Registered design professional shall prepare construction documents for the following; Foundation, framing, truss systems, floor systems and lateral/shearwall bracing.
4. **One (1) electronic set (pdf)** of building plans including architectural, mechanical, electrical, plumbing, framing (ceiling joist, rafter, floor framing if 2 story and truss plans if applicable), lateral bracing and third party energy design documents, to include the Energy Compliance Form. All smoke detectors must be combination Smoke/Carbon monoxide detectors and noted on electrical plans.
5. Architectural plans shall include floor plans, elevations, and roof plan. Options shown on the plan which are not going to be constructed on this site must be marked out. Single sheet submittal is unacceptable.
6. Elevation drawings shall be labeled and call-out the percent masonry calculations.
7. Irrigation plans shall be submitted along with architectural plans if irrigation system is to be installed.
8. Town of Little Energy Confirmation form and Energy certificates based on 2015 IECC

Adopted Codes

Residential construction must adhere to the following:

1. 2012 International Residential Code, with local amendments.
2. 2015 International Energy Conservation Code
3. Adopted Town of Little Elm Ordinances.

Plan Review Process

Plans are reviewed in the order in which they are received.

Our goal is to review the plans and enter comments online within ten (10) working days. Any comments and corrections listed in the plan review phase online will require a response and resubmittal within 180 days of

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www.littleeelm.org

the comment date or the application will expire. An additional ten (10) day plan review will start upon resubmittal. If there are no comments or when the comments have been approved the plan review step will show completed and the next step will be payment due. At that point pay the fees shown and the permit will be issued.

Building Site Requirements

1. The Town of Little Elm requires the builder and subcontractors to keep the building site free of high weeds or grass and trash and debris throughout the construction process including streets and adjacent properties, whether vacant, under construction or occupied. ***VIOLATIONS MAY RESULT IN INSPECTIONS FOR SUBDIVISION TO BE SUSPENDED***
2. Onsite portable sanitation facilities must be installed at time of initial construction activity. One portable sanitation facility shall be provided for each ten workers minimum one per block of street on which construction is occurring.
3. Trash bins shall be installed when construction starts and shall be emptied and replaced as needed until final inspection. Trash and debris shall be below top of container at all times.
4. **Site address shall be visible from the street at all times. (On building or sign in front of building)**
5. T-pole required to be addressed and shall be ground fault protected (GFCI) for all outlets at all times.
6. Construction working hours are 7:00 AM to 8:00 PM on weekdays.
7. The location for the water meter shall be exposed and cleaned out before the water department will set the meter. For water meter information call water billing at 214-975-0480.
8. Streets shall be kept free of mud, trash and debris at all times. Stop work orders will be enforced if the builders are in violation of the trash, rubbish, and erosion control items listed above.

Inspections Checklist

This checklist is not to be construed as all inclusive. It is only to be used as a guideline.

T-pole

1. T-pole shall be braced in two directions.
2. Maximum meter base height shall be six (6) feet.
3. Aluminum wire is not allowed.
4. Ground rods must be min eight feet length and where there is more than one rod they shall be spaced minimum six (6) feet apart.
5. All outlets shall be ground fault circuit interrupter (GFCI) protected.

Foundation

1. Foundations shall be inspected by the Engineer and an approval letter provided at the final inspection.

Rough Plumbing

1. Water service line shall be minimum 1" diameter installed in compliance with current adopted code. There shall be a full open valve near the entrance of the water service into building on the exterior.
2. Water line shall be tested and proved tight under a water pressure not less than the working pressure of the system; or for piping systems other than plastic, by an air test of not less than 5 psi.
3. Sewer line shall be four (4) inch minimum with the same size double cleanout just before it enters the building. The connection to the sewer stub out shall be glued.

4. Drain lines shall be installed to comply with the edition of the IRC currently adopted by the Town of Little Elm.
5. Island fixture venting shall be per local amendment, which requires foot loop vent.
6. A water test 10 feet high is required on all drain lines.
7. All glue joints will have purple primer.

Pre-Pour Inspection

1. This inspection is only to verify that all drain, waste and vent piping under slab going vertical is protected with a wrap and that all piping going horizontal between beam is protected with sleeves and or wrapping, all based per 2012 IRC Section P2602, specifically P2603.3 and P2603.4

The framing, rough electric, rough mechanical and plumbing top out shall be requested at the same time.

Framing

1. All bottom plates on masonry or concrete foundations will be pressure treated. Plates shall be secured with approved three (3) inch metal pins at intervals according to their manufactures listing, or by 1/2 inch diameter anchor bolts 6 feet on center and within 12 inches of the ends, and minimum 2 per board.
2. Wind bracing must conform to the 2012 International Residential Code.
3. Lumber grades and joist and rafter spans shall comply with the 2009 International Residential Code.
4. Rafters and ceiling joist 2 x12 and larger shall be blocked at points of bearing, and 2 x 12 and larger shall have bridging at intervals not exceeding 8 feet.
5. Purling must be the same size as the rafter with 2 x 4 braces installed 4 feet on center at not less than a 45 degree angle. Braces over 8 feet in length shall be braced.
6. Fur downs, chimney(s), Ceilings of different heights, arches, vertical and horizontal spaces over 10 feet in length must be fire blocked.
7. Openings from a garage to a sleeping room shall not be permitted. Separation between the garage and residence and its attic area require minimum 1/2 gypsum board applied to the garage side with opening protection not less than 1-3/8 inch solid or honeycomb core steel or 20 minute fire rated door. Habitable rooms above a garage shall be separated by minimum 5/8 inch Type X gypsum board or equivalent.
8. Stairs must comply with section R311.7 of the 2009 International Residential Code.
9. Metal fireplaces shall be installed according to the manufacture's listing.
10. Provide an insulation stop around metal chimneys and flue pipes to prevent insulation accumulation.
11. Brick ties shall be in place.
12. Pull down stairs for access to attics shall have a 300 pound per tread load capacity.

Rough Electrical

1. Minimum 12-2 copper conductor.
2. No aluminum or copper clad aluminum conductors are permitted.
3. Check panel for size, bonding, and bonding bushing.
4. Panel must be grounded to foundation rebar and to a supplemental ground rod.
5. Check for required receptacles. Receptacles are required to be located so that no point in a wall space is more than 6 feet from a receptacle.
6. Two separate circuits required in the kitchen.
7. GFCI required on all outdoor, bathroom, garage, and kitchen, bar sink, hydromassage bathtubs, spa, hot tub and boathouse receptacles.
8. Romex must be stapled within 8 inches of a nonmetallic box.
9. Metal boxes shall be grounded and romex secured to the box.
10. All romex in an air duct must be sleeved.

11. All single family dwellings must have a service disconnecting means located in the garage or adjacent to the meter base outside.
12. Combination smoke-carbon monoxide alarms shall be installed in each sleeping room, outside each sleeping area in the immediate vicinity of the bedroom, any room with doors installed such as media, study or similar type and on each additional story of the dwelling including basements. When more than one is required the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all alarms.
13. Cover electrical panels from paint or drywall overspray during construction.
14. Spa motor plug shall be GFCI protected and the motor bonded.

Rough Mechanical

1. Metal ducts must be mechanically fastened by means of at least three sheet metal screws or rivets equally spaced around the joint and are made airtight by approved tapes, mastics or gasketing.
2. Flex ducts shall be installed and supported in accordance with the manufacturer's installation instructions.
3. Condensate drains must be tied into a working p-trap.
4. Attic coils must have a secondary condensate drain pan with a minimum 3/4" drain to discharge outside over a window.
5. The electric wiring in return air plenum must be in metallic conduit, with termination in metal boxes.
6. Exhaust fan ducts shall terminate outside. Metal duct is required in concealed spaces.
7. The dryer vent metal ducts maximum length is 35 feet, where fitting are used, the maximum length shall be reduced per Table G2439.5.5.1 or per manufactures installation instructions. The duct must terminate outside with a backdraft damper.
8. Insulation for a/c ducts shall meet the current energy code requirements.

Plumbing Top Out

1. All vents must extend through the roof a minimum of six inches with flashing properly installed.
2. There shall be a minimum of one (1) outside anti siphon protected hose bib in front and one at the rear.
3. There shall be a full open valve near the entrance of the water service into building on the exterior.
4. Check for proper use of fittings, trap size, Trap arms and vents.
5. Nail guards shall be used where pipes penetrate walls and plates
6. All water pipes in exterior walls or within 12 inches of an exterior wall and all hot water lines must be insulated.
7. All water heaters must be in an approved drip pan with a drain. Water heaters in a garage must be elevated 18 inches above the floor and protected from physical damage. Pressure and temperature relief drains shall be run full size in rigid copper or CPVC pipe and terminate without threads.
8. Appliance vents shall be installed minimum 1 inch from combustible material for double walled pipe.
9. Working water test required on water and a 10 feet head on top floor for drains.
10. Approved shower pan must be installed and tested and weep holes shall be open.
11. Gas piping shall be tested with diaphragm gauge and test pressure shall be to local amendments.
12. Gas piping shall be bonded.
13. Gas piping shall not be run in return air ducts or combustion air openings.
14. Combustion air outlets shall be installed within 12 inches of the ceiling and within 12 inches of the floor.

Masonry Fireplace

1. There must be a minimum of two inches clearance to combustible construction.

2. Firebox walls shall be minimum 10 inches of solid brick or 8 inches where a firebrick with 1/4 inch joints maximum lining is used.
3. A metal damper shall be installed a minimum of 8 inches above the top of the fireplace opening.
4. A minimum 4 inch thick concrete or masonry hearth and a minimum 2 inch thick hearth extension supported by non combustible material.
5. Factory built fireplaces shall be installed in accordance with the manufactures listing.

Insulation and Energy Compliance

Third party inspection required for all inspections and certificate of compliance form with inspection report required at time of documentation step inspection before building final can be scheduled. (Energy Compliance form is attached)

Meter release

1. Wires in meter base shall have anti oxidant applied to the aluminum wires.
2. Meter base connected to the panel with a metal conduit shall be bonded.
3. Bond the neutral bus to the panel.
4. Approved colored wires only to the hot lugs.
5. Proper size feeder wires to the panel.
6. Proper identification of the neutral wire
7. Two forms of grounding will be required from 2008 NEC Sec. 250.52; Concrete-Encased Electrode & Rod and Pipe Electrode
8. Label the panel including location of the cold water bond.
9. Check cold water bond if applicable
10. Gas piping bond.
11. Complete all wiring and install all fixtures including cover plates.
12. Check jet tubs for GFCI and proper bonding.
13. Weather proof covers installed on exterior plugs.
14. Light fixtures at all exits.
15. Check for proper gage and pressure test on gas line.
16. Stairway for access to attic units with a minimum 300 pound capacity and a 24" catwalk with a 30" platform in front of the unit.
17. Furnace units and water heater set, including vents through roof.
18. Attic ventilation sufficient for combustion air requirements.

Flatwork

1. Sidewalks shall be five feet wide and located within the right of way two feet from the property line and shall have ¼ inch per foot slope from property line to curb.
2. Expansion joint are required abutting existing concrete and every twenty feet.
3. Number 3 rebar required at 18 inches on center each way.
4. Sidewalk control joints required at five feet on center.
5. Meters, plumbing boxes, electrical boxes, etc. shall not be located in driveways, drive approaches, or in the Town of Little Elm sidewalks.
6. Barrier free ramps shall comply with American with Disabilities Act (ADA) and Town of Little Elm standards.
7. Cul-de-sac shall comply with the Town of Little Elm standards with a minimum radius of 40 feet.

Final inspections shall include building, electrical, mechanical, plumbing, fence and irrigation.

(Where required)

1. Combination Smoke/CO2 detector (s) shall be operational and installed in the proper locations including interconnection.
2. Texas basements will require detectors to be pre-wired.
3. Attic access must be installed and have a catwalk to furnaces and/or water heaters.
4. Door hardware shall be installed.
5. Weather stripping must be installed on all exterior doors and attic access openings.
6. All windows shall be operational and shall not be cracked or broken.
7. Air Conditioner equipment must be operational and mounted on a level concrete pad raised at least 3" above grade.
8. Combustion air openings shall be installed in all mechanical rooms that contain gas fired appliances.
9. Check electrical panel for breaker sizes and labeling.
10. Disconnect for A/C correct size and labeled. 125-volt receptacle accessible and within 25 feet.
11. List location of cold water ground in panel legend.
12. Cold water, gas piping bond and ground rod clamps must be tight.

13. All receptacles, switches, fixtures and appliances shall be installed and completed including covers.
14. Check gas fixtures for proper valves, connectors, flue pipe and clearances.
15. Check for traps and hot and cold water connection at all fixtures.
16. Air gap fittings at dishwasher are not required if the dishwasher already has one included.
17. Address must be installed in a location visible from the street.
18. Sidewalks shall be installed and free of chips and cracks.
19. Driveways (number of spaces should match garage width)
20. Fences (metal posts, materials, setbacks, kickboards, corner lot enhancements, etc.).
21. Landscape shall be installed (2 canopy trees, minimum 1 front yard, spaced at least 15' apart).
22. Sod (all disturbed soil areas need re-vegetation).
23. Architectural materials compliance.
24. Third party Insulation inspection with pass results, Engineer letter for foundation compliance to design, copy of termite treatment type and style, and a copy of fence and irrigation permit shall be on site at time of inspection.

Summary

This guideline has been prepared to assist the builder, designer, and his/her field supervisor. Builders are encouraged to share the content of this guideline with their administrative staff, architects, engineers, subcontractors, and material suppliers.

NOTE: The checklist included in this guideline should not be interpreted as all-inclusive; it is to be used as a guideline only.

This guideline will be available online and will be updated periodically to reflect building code changes, newly adopted ordinances, and any other information pertinent to residential construction. All builders currently building residential structures within the Town of Little Elm will be responsible for obtaining the most current publications available.