

WILLISTOWN TOWNSHIP

RESIDENTIAL PLAN REVIEW W/CORRECTION LIST

(2018 IRC, 2018 IECC, 2018 IBC)

Floor Sq. Footages:

Permit # _____

Main _____
 Upper _____
 Rough Basement _____
 Finish Basement _____
 Garage _____
 Deck/Porch _____
 Carport/Covered Porch _____

Remodel _____
 Addition _____
 Roof Conversion _____
 Siding/Stucco _____
 Reroof _____

Total _____

**** This list is a guideline only and is not to be construed as being a complete listing of all code requirements. All work must comply with the adopted codes in order to receive a final approval for occupancy.

APPLICATION: Applications are to be filled out COMPLETELY, along with all submitted information pertaining to the construction documents. (IRC R105.3).

PLANS: Plans submitted for permits must have two (2) copies of each of the following (where applicable):

- A. Plot (Site) Plan (to scale)
- B. Footing/Foundation/Basement Plan
- C. Architectural Floor Plan (each floor)
- D. Elevations
- E. Typical Wall Cross-Section
- F. Floor Framing Plans
- G. Roof Framing Plans
- H. Beam Schedule
- I. Structural Calculations
- J. Truss Design reviewed by engineer
- K. Finish Schedule
- L. Window Schedule
- M. Door Schedule
- N. Stair Sections
- O. Electrical Plans
- P. Plumbing Plans
- Q. Mechanical Plans (including load calculations and duct design)
- R. Energy Analysis/Compliance Documentation

- 1.Engineered/stamped details for each truss. Including design criteria for all loads and required connections, bridging, and installation instructions. (Needs to be reviewed by the engineer of the home and must be submitted with original plans. No differed submittals)
- 2.Description of materials and/or specifications
- 3.Plot Plan – Planning & zoning Requirements (R106.2)
- 4.Identify address, lot and subdivision of proposed construction. (IRC-R106.1.1)
5. Show proposed structure accurate size (to scale), including options and off-street parking (driveway) (s), list actual setbacks to ALL property lines. Show direction of storm water from house to public way.
- 6.Show all property lines and easements, include North arrow/must be scaled.
7. Show direction of stormwater from house to public way.

**PLANS REQUIRED TO BE DRAWN TO SCALE
PLANS ARE TO BE FOLDED**

**ARCHITECTURALS/STRUCTURAL WORK
FOOTING/FOUNDATION BASEMENT PLAN**

1. Show complete dimensions, including over-all size, foundation fireplace keys, jogs in foundation for garages, bay windows etc.
2. Show locations of mechanical and utility room, stairways, and bearing walls. (IRC-R106.1.3)
3. Include window & doors sizes and locations and finishes on plans or proper schedules (IRC- (R106.1.1)
4. Indicate ventilation and crawl space access location and size. (IRC-R408)
4. Indicate footings minimum 12" below the natural grade for grubbing purposes. (Note: See wall section for frost protection requirements.) (IRC-R403.1.4)

FLOOR PLAN (S)

1. Dimension all walls and over-all size of building, including jogs. (IRC R106.1.1)
2. Indicate use of all rooms and spaces. (IRC.1) R106.1.1
3. Habitable rooms to have a minimum height of 7 feet. (IRC-R305.1)
4. At least one room to have a floor area of 120 square feet. All habitable rooms, except kitchens, require a minimum of 70 square feet, and must measure at least 7' in any direction. (IRC – R304.1)
5. Show attic, access, minimum 22" x 30", not located above a shelf in a closet and must be readily accessible. Thirty-inch headroom is required at some point above the access. If in a garage, one-hour fire-resistive construction with a latch is required. (IRC) R807.1
6. Indicate use of future finished and unfinished space (IRC – R06.1.1)

ELEVATIONS

1. Show final grade at the structure. (IRC-R401.3)
2. Show all exterior materials and indicate extent of brick, stucco, or stone. (IRC R106.1.1 & R703)
3. Show all roof pitches and indicate attic ventilation: 1 square foot of ventilation for each 150 square feet of attic area unless provisions are made to allow the 1/300 method. (IRC-R801 & R806.1.)
4. Show fireplace flue vent or chimneystack a minimum of 2' above any portion of roof located within ten feet horizontally. (IRC-R1003.9)
5. Provide veneer attachment details and lintel schedule if applicable.

TYPICAL WALL CROSS-SECTIONS

1. Show dimensions of footings and foundation. IRC-R106-1.1)
2. Show reinforce footings and foundation (IRC 403.1.3.5) or provided engineering.
3. Note frost depth on plans. The footing depth must be a minimum of 30" below final grade for frost protection in valley. Frost depth increases as elevation increases. (IRC-R403.1.4.1).
4. Indicate damp proofing of foundation (or waterproofing as required). (IRC-R406).
5. Provide a minimum 3 1/2" thick floor slab. (IRC-R506.1).
6. Show clearances from final grade to sole plate to be treated or redwood. (IRC-R404.1.6 & R317)
7. Anchor bolts required to be placed (I-403.1.56 or provide engineering.
8. Solid blocking required at bearing points for floor joists, roof rafters, trusses, and ceiling joists. (IRC-R502.7 & R802.8)
9. Show required clearances for floor joists and girders to natural earth in crawl spaces. (IRC-R317.1).
10. Offsets at bearing partitions perpendicular to joists shall not be offset from supporting girders. Walls or partitions more than the joist depth. (IRC-502.4).

11. Show double floor joists under bearing partition which are parallel to floor joists. (IRC-R502.4)
12. Sub-floor to be T & G plywood or comply with IRC-R503 and IRC Tables R503.1 & R503.2.1.1
13. Weather barrier required under siding, brick, stucco, etc. as per IRC Table R703.2
14. Specify header sizes for all openings on plans. (IRC-R502.10 & R802.9).
15. Fire block construction should be defined on the plans. (IRC-R302.11)
16. Location and nailing schedule for sheathing diaphragms, shear walls, and braced walls must be indicated on the plans. (IRC-R503, R602.10, R803)
17. Specify stud size, spacing, grade, species and height. (IRC-R602)
18. Roof sheathing must be indicated. (IRC- R803)
19. Hurricane ties are required on all trusses/rafters connections as per IRC-R802.11
20. Provide engineered lateral analysis where plans do not meet conventional construction provisions of the IRC-R301.1.3, R301).
21. Provide engineered lateral analysis for -oft" stories, snow drifting and unbalanced loads, or unusual conditions. (IRC-R301).
22. Provide engineering for cantilevers not covered in Table 502.3.3(1). (IRC-R502.3.3).
23. Provide large-scale cross section showing seismic reinforcing for masonry chimneys.
24. Provide details for attachment of stone and/or masonry veneer. (IRC-R703.7).
25. Include installation spec's and unusual details for stucco/EJFS systems. (IRC-R703.9).

FLOOR AND ROOF FRAMING PLAN(S)

1. Provide floor framing plans indicating: all header and beam locations: size, spacing, span, grade, species, and layout (direction) of all floor joists. (IRC-Chapter 5).
2. Provide roof framing plans indicating: All header and beam locations: size, spacing, span, grade, species, and layout (direction) of all rafters: complete truss layout of all trusses, including commons, girders, hips, gables, scissors, specials, and misc. trusses. (IRC-Chapter 8).
3. At valleys and hips, provide hip rafter two inches thick and not less in depth than the cut end of the rafters. (IRC-R802.3).
4. Connections between a deck ledger of pressure-preservative-treated Southern Pine, Hem-Fir or approved decay-resistant species, and 2" nominal lumber band joist bearing on sill plate or wall plate shall be ½" lag screws or bolts with washers. (IRC-507).

BEAM SCHEDULE

1. Provide calculations for beams and headers, including design criteria. (IRC-chap 3).
2. For pre-engineered wood component beams, provide manufactures installation guide
3. Actual copies of engineering may also be required
4. Check for beams being over spanned.

FINISH SCHEDULE

1. Fiber-cement, fiber-mat reinforced cement, glass mat gypsum backers or fiber-reinforced gypsum backers are required to be used for walls in tub and shower areas where tile is being installed. (IRC-R702.4.2)
2. Gypsum wallboard shall not be installed on exterior surfaces.
3. Fire separation required between house and garage is one layer ½" gypsum board. 5/8" type x sheetrock required on ceiling if there is living space above with ½" board on all supporting walls. (IRC-R302.6)

WINDOW SCHEDULE

1. Provide a complete window schedule for all glazing. (IRC-R308).
2. Window sizes required to be 8% of floor area of room for natural light.(IRC – R303.1)
3. Open able window required to be 4% of floor area of room for natural ventilation. (IRC R303.1)
4. Provide egress/rescue windows in every bedroom AND at least one in a basement without bedrooms. All "Future use" bedrooms, will require egress windows. Egress/rescue windows are required to have at least a 5.7 square foot clear opening. With a minimum net clear opening width of 20" and a minimum net clear opening height of 24" with the openable portion width of 20" and a minimum net clear opening height of 24" with the openable portion that does not exceed 44" above the floor. (IRC-R310). The minimum size that will meet egress requirements is generally a 5'0 x 3'0 or a 4'0 x 3'6.
5. Identify window well locations and sizes of wells. Egress window wells deeper than 44" require an approved permanently affixed ladder. Note: The net clear dimension of basement egress window wells, when window is fully opened, are 5.7 square feet minimum with 20" in the smallest direction. (IRC-R310.2)
6. Windows within tub/shower enclosures required to be safety glass. (IRC-R308.4)
7. Windows with a sill height within 60" vertically of the waters edge of a tub/shower must be safety glass. (IRC-R308.4)
8. Shower doors must be safety/ glass & swing outward. (IRC-R308.4 & P2708.1)
9. Windows within ass arc of 24" of wither vertical edge of a door and sliding glass doors must be safety glass. (IRC-R308.4)
10. Windows where lower edge is less than 18" above the floor and glazing is guard railings must be safety glass. (IRC-R308.4)
11. Glazing adjacent to the landing at the bottom of a stairway where the glazing is 36" above the landing and within 60" horizontally of the bottom tread shall be considered a hazardous location. (IRC R308.4.7)

DOOR SCHEDULE

1. The door from house to garage to be 1-3/8" solid core wood or 20 minute rated. (IRC-R302.5.1) Amended by PA UCC.
2. Every dwelling must have at least one door, minimum 32" by 6'6" in clear opening space measured in width from face of door to door stop with door at 90 degree open and in height from threshold to upper door stop to be used as an exit. (IRC-R311.2)

ENERGY

1. Provide compliance with the energy code compliance requirements of Chapter 11 of the 2018 IRC (N1101.5) or with the energy requirements for PA Alternative Energy Code.

STAIR SECTION

1. Stair Section required indicating minimum headroom of 6' – 8" measured from the nose of the tread at any point, maximum rise of 8' ¼ " and a minimum tread depth of 9". (IRC- R311.7 and PA UCC
2. TREAD VARIATION – Maximum 3/8" on treads and/or risers in any stair run. (IRC R311.7.5.1)
3. Stair WIDTH – minimum 36" wide. (IRC-R311.7.1)
4. Provide 36" x 36" minimum landings at the following locations. A) All exterior doors (except from the house into the garage); B) at top of steps; C) Bottom of all interior stairways; C) Top of interior stairways except where the door does not swing over stairs. (IRC-R311.7.6)
5. WINDING stairs – Minimum 6" tread width at narrowest (smallest) point. (IRC-R311.7.5.2.1)
6. Stairway FIRE PROTECTION ½" gypsum board required on walls and stair soffits on the underside of enclosed stairs spaces. (IRC-R302.7)
7. HANDRAILS required when there are 4 or more risers. (IRC-R311.7.8)
8. Provide type 1 or type 11 handrails 34" – 38" in height that run continuous, and have returning ends to wall, newel post, or a safety terminal. (IRC – R311.7.8 & 311.7.8.3)
9. Minimum 36" high guardrails required on open sides of stairs, landings, and platforms more than 30" above grade or floor below. (IRC-R312.1.1)
10. Guardrail baluster spacing shall be so a 4" sphere cannot pass through. (IRC-R312.1.3)
11. Guardrails required on open side of stairs where stair height is 30" above grade. The minimum height of these guardrails is 34". (IRC-R312.2)

ELECTRICAL

1. Show complete electrical plan. (IRC-R106.1)
2. Show location of electrical panel (s) with required clearances. (IRC-E3405.2)
3. Smoke detectors required at each bedroom, outside each sleeping area in the immediate vicinity of the bedrooms, and at every floor level including basements. Smoke detectors shall be hard wired together in series with battery backup. (IRC-R314)
4. Where fuel fired appliances exist in the home or the home has an attached garage. A CO detector is required in every level of the home in the immediate vicinity of the bedrooms where bedrooms are on the level. (IRC-R315)
5. GFCI protection of outlets required on all outlets installed to serve kitchen countertop surfaces, in bathrooms, garages, outdoors, including decks, balconies, and under eaves, crawl spaces with outlets and in unfinished basements. (IRC-E902)
6. At least one weatherproof GFCI outlet required at grade level at front and back of a dwelling as well as any balconies, decks, and porches. (IRC-E3901.7) See PA UCC 2015 changes.
7. All bedroom circuits require combination type arc-fault circuit interrupter protection breakers. (IRC-E3902.1)
8. Hallways 10 feet or more in length or shall have a receptacle outlet. (IRC-E3901.10)
9. Kitchen countertop space of 12" or more requires an outlet. Spacing for electrical outlets at kitchen counter is so that no space is more than 24" from an outlet. (4'-0" O.C. maximum) At least one receptacle shall be installed at bar/island. (IRC-E3901.4)
10. Provide electrical receptacles so that no point measured horizontally along the floor line in any wall space is more than 6 feet from a receptacle outlet. The first receptacle must be 6' max. from opening or end of wall. (Spacing between receptacles is 12' OC maximum). (IRC-E3901.2)
11. Bathroom receptacle outlets shall be supplied by dedicated 20-amp branch circuit with no other outlets (IRC – E3703.4)

12. Minimum of (2) 20amp small appliance circuits required in kitchen. (IRC-E703.2.1)
13. Lights in closets shall conform to clearances specified in (IRC-E4003.12)
14. Provide service load calculation for new service.(E3602.2)

PLUMBING

1. Floor drain required at water heater locations. Show location of water heater and floor drain.
2. Provide seismic straps on water heater. (IRC-P2801.8)
3. Shower size minimum 900 square inches with a 30" diameter circle within area, finished to a height of 70" above the drain inlet. (IRC-P2708.1)
4. Water closet clearances of 30" width, 21" in front required. (IRC-R307)
5. Fuel burning gas appliances not allowed in a bedroom, bathroom, storage closet or spaces that open only to these rooms. (IRC-G2406.2)
6. Freeze-less, backflow prevention hose bibs required. (IRC-P2902.4.3 & P2903.10)
7. Low-flush toilets required, maximum 1.6 gpm. Maximum flow rate of showerheads is 2.5 gpm@ 80psi. (IRC-TABLE P2903.2)
8. Shower & tub/shower combinations must conform to IRC-P2708.3, limiting the maximum setting of the valve to 120 degrees F.
9. Water heaters located on wood floors or where leakage could cause damage, water heater shall have a safe pan 1 ½ deep and minimum ¾" diameter drain to an approved location. (IRC-P2801.6)
10. Plans should note that plumbing vents shall be at least 3 feet above or 10 feet away from all outside air intake openings. (IRC-P3103.5)
11. Flag poling of plumbing vents is prohibited. (IRC-P 3103.4)
12. Show access location for whirlpool type tubs. (IRC-P2720.1)
13. Show location of clothes washer and dryer.
14. Show location of thermal expansion control device on water system. (IRC-P2903.4)
15. Provide drainpipe sizing (P3005.4) and water system sizing (P2903.1)
16. Provide design compliance for a required fire sprinkler system per NFPA 13D or per P2904)

MECHANICAL

1. Provide complete gas line diagram(s) including meter location, appliances location(s) BTU Input ratings, pipe sizes and lengths, pipe type(s), etc.
2. Note on plans the combination air duct sizes and locations.
3. Combustion air required to be taken from outside, with ducts located within the upper 12" of the ceiling and within 12" of floor or 12" pf ceiling only in accordance with IRC-G2407.6.1
4. Fuel fired appliances in garages must have sources of ignition at least 18" above the floor (IRC-G2408.2)
5. Plans should note that (a) vents shall terminate 4' below OR 4' horizontally and a t least 1' above a door, open able window or a gravity air inlet into a building (b) note that flue vents and exhaust fan vents shall be at least 3' above or 10' horizontally from any opening that allows air fan vents shall be at least 3' above 10' horizontally from any opening that allows air entry into occupied portions of the building.(IRC-M1804.2

6. Ducts for domestic clothes dryers shall have a smooth interior finish and the maximum developed length shall not exceed 35 feet from the dryer location to the outlet terminal. The maximum length of the duct shall be reduced 2.5 feet for each 45-degree bend and 5 feet for each 90-degree bend. The exhaust duct shall be a minimum nominal size of 4 inches. The entire exhaust system shall be supported and secured in place. (IRC-G2439)
7. Bathrooms without an operable window are required to have an exhaust fans providing 50CFM for intermittent ventilation or 20 CFM for continuous ventilation. (IRC-R303.3)
8. Provide compliance with ACCA Manual S & Manual J or other approved methodology for equipment and appliance sizing. (M1401.3)

MISCELLANEOUS

Please make corrections to the original drawings and then return them with two corrected sets of drawings to the Division of Building and Safety for verification and Permit issuance.

The following notations are listed for your reference IBC = International Building Code. 2018 Edition, IRC = International Residential Code. 2018 Edition, IMC = International Mechanical Code 2018 Edition, IPC = International Plumbing Code 2015 Edition, NEC = National Electrical Code 2017 Edition.