

Light-Heigel & Associates
Single Family Residential
Plan Review Checklist

Two sets of plans should be submitted on 11"x17" or larger paper, but no larger than 24"x36". In certain instances 8-1/2" x 11" may be acceptable if legible. Plans should include:

1. Foundation plan for basement or crawl space
2. Floor plans for each floor
3. Elevation views of all sides of the house showing approximate finish grade
4. Section View showing framing members, beams, girders, posts, sheathing, wall coverings, rafters (or trusses), roof covering, attic ventilation, insulation
5. Electrical Plans of each floor (may be included in foundation plan and floor plans)
6. Plumbing Drain/Waste/Vent riser diagram
7. Framing Plan (optional)- if not provided show all beams, girders, and headers, joist size/spacing, rafter sizing/spacing in plans and sections
8. Provide additional framing details for non-standard situations such as point or linear loading of joists, cathedral and vaulted ceilings. If using LVL beams, Truss-joists, or Glulam members document adequacy of support with loading diagrams and calculations from manufacturer. Loading situations not covered by tables in the code may require analysis by a professional structural engineer. All engineered components shall be accompanied with job specific title, address and PA design professional's seal.

The following information shall also be included on the drawings:

1. MINIMUM AREA DIMENSIONS AND HEIGHTS: 120 sf room, 70 sf bedrooms, 7 feet min. heights. **R304 & R305**
2. HEATING SYSTEM: Indicate type and equipment locations (i.e. gas hot air, electric heat pump, oil hot water). Provide heat gain/loss calculations using ResCheck (or other approved means) or note on application that compliance is by Pennsylvania Alternative Energy Methods. Heating system must be designed to maintain 68 degrees.
3. PA ALTERNATIVE RESIDENTIAL ENERGY PROVISIONS INSULATION VALUES
 - a. Walls = R- 18
 - b. Floors = R-21
 - c. Ceilings = R-38
 - d. Windows = U- 0.40
 - e. Opaque Doors = U-0.39 (with one door exempt)
 - f. Skylights 0.55
 - g. Basement walls = R-10
 - h. Crawl Space Walls = R-19
 - i. Slab perimeter – R9 to a depth of 4' (or top of footing)
4. EQUIPMENT LOCATIONS: Indicate well pumps, basement sump pumps, hot water heaters, washer, dryer.
5. WINDOW SCHEDULE: Provide information on U-values, light/ventilation areas, openable egress area (for bedroom windows), header sizes. Habitable rooms require 8% of area in glazing; 4% of floor area in openable window area.

6. EMERGENCY EGRESS OPENINGS: 44 inches max above floor, in every sleeping room, 5.7 sq ft (5 sq ft if within 44 inches of grade), 20 inch min width, 24 inch min height **R310.1**
7. WINDOW WELLS AND LADDERS: Emergency egress from basement bedrooms require 9 sq ft min area, 36 inches out from window, if deeper than 44 inches affix a ladder **R310.2**
8. BATH LIGHT & FAN: Required if 3.0 sf openable window area is not provided. **R303.3**
9. GLAZING IN HAZARDOUS LOCATIONS: Indicate safety glazing where required for bath tubs and showers within 24 inches of doors, within 18 inches of floors, panels greater than 9 sq ft, within 60 inches of stairway landings, within 36 inches of walkways **R308**
10. SKYLIGHTS: Indicate glazing type- laminated glass, fully tempered glass, heat-strengthened glass, wired glass, or approved rigid plastic. **R308.6**
11. GARAGE SEPARATION: **R309.2**
 - a. Garages shall have no openings directly into sleeping rooms.
 - b. 1/2 inch gypsum wall board required between the garage and residence, drywall shall extend to gable peak or the residence sidewall and garage ceiling can be covered with 1/2 inch drywall.
 - c. Garage beneath habitable rooms shall be separated from all habitable rooms by no less than 5/8 inch Type X gypsum board or equivalent.
 - d. Openings between the garage and residence shall be equipped with a 1 3/8 inch thick solid or a 20 minute fire rated door
12. EXIT DOORS AND HALLWAYS: at least one 36 x 80 door required, 36 inch min. width in hallways **R311**
13. LANDINGS AT DOORS AND STAIRWAYS: 36 inches min. out from door and door width min. **R311.4.2**
14. RAMPS, SLOPES AND RAILS: max slope 1 & 8, railing with ramps over 1 & 12 **R311.6**
15. STAIRWAY WIDTH: 36 inches, TREADS AND RISERS: 8 inch rise and 9 inch tread, HEADROOM: 6 foot 8 inch, UNDER STAIR PROTECTION: 1/2 inch sheetrock, HANDRAILS: (2) or more risers, 34 to 38 inches in height and 1 1/4 to 2 5/8 inches in diameter if circular **R311.5.3**
16. GUARDRAILS (GUARDS): at floors over 30 inches above grade, 36 inches min. height, a 4 inch sphere shall not pass through, no ladder effect **R312**
17. SMOKE DETECTORS: Locations (one on each floor, one in each sleeping room and in the immediate vicinity of each sleeping room.); Interconnected with AC and DC power source **R313**
18. VAPOR BARRIER: Locate on warm-in-winter side of exterior walls **R319**
19. GEOTECH: 1500 psf presumptive soil load pressure without soils report. **R313**
20. CONCRETE: 2500 psi in slabs and footings, 3000 psi in foundation walls, 3500 psi in garage slab and exterior steps **TABLE 401.4.1 & R402.2**
21. FOOTINGS: (including column piers, and deck footings) Indicate depth below grade (40" min to frost line); size (width and thickness). **R403**
22. FOUNDATIONS:
 - a. Composition (i.e. 10" CMU, 8" poured walls)
 - b. Rebar size and spacing (based on soil type and unbalanced fill heights) **Tables R404.1.1(1)-(4)**
 - c. Dampproofing (eg.: parging and tarring).is required wherever habitable space is located below grade (Alternate product specifications shall be submitted for approval.)
 - d. Sill plate (Minimum 2x4 pressure treated) **R404.3, R319.1**

- e. Anchor bolting in concrete or masonry - 1/2" diameter bolts at 6'0" on center and within 12" from corner; 7" embedment. **R403.1.6**
 - f. Drainage – 4" perforated pipe, 2B stone, filter fabric covering over stone or "Form-a-Drain" – to daylight or basement sump **R405.1**
 - g. FHA or solid masonry at top course of change in thickness of masonry (ex.: brick ledge). **R606.2.3**
23. TERMITE PROTECTION: Termite resistant wood, physical barrier (eg.: cap block and pressure treated plate.) or soil treatment **R320.1**
24. CONCRETE FLOORS
- a. Thickness (Min. 3-1/2") **R506, Fig. 403.1(1)**
 - b. Base course (4" thick base course consisting of clean graded sand, gravel, crushed stone or crushed blast-furnace slag passing a 2-inch sieve.) **R506**
 - c. Vapor barrier (including attached garages) **R506.2.3**
 - d. Garage floors to be sloped to entrance or drain **R309.3**
25. COLUMNS: Indicate size, location and composition of all columns (Minimum 4" square wood; Minimum 3" diameter steel). **R319.1.4**
26. CRAWL SPACE:
- a. Vents required within 3 feet of each corner (1/150 of under-floor area; not req'd. when ground surface is covered with approved vapor retarder, the space is supplied with conditioned air, *and* the walls are insulated) **R408.1**
 - b. Access = 18" x 24" **R408.3**
 - c. Minimum 18" clearance from finished grade to floor framing **R319.1**
27. SPECIES & GRADE: Provide notes with information on species and grade of all framing lumber(e.g. #2 SPF or better)
28. FLOOR JOISTS: Size, spacing, and direction; double under bearing walls. **R502.3, R502.4**
29. BEAMS/GIRDERS: Indicate size and location of supports. **R502.5**
30. HEADERS: Indicate size of all headers over window, door, and open interior wall openings. **Tables 502.5(1) & 502.5(2)**
31. STUDS: Indicate stud size and spacing in interior and exterior walls. **R602**
32. FLOOR & ROOF OPENINGS: Provide details of headers for all floor and roof openings. **Fig. R502.2**
33. FLOOR SHEATHING: Provide information on thickness and composition; : 5/8 inch thick tongue & groove for joists at 16 to 20 inches on center, and 3/4 inch thick tongue & groove to 24 inches on center **R503**
34. INTERIOR WALL COVERING: Indicate wall covering material (ex.: 1/2" gypsum). **R702**
35. EXTERIOR WALL COVERING Indicate wall material (ex.: vinyl, brick, wood, etc.) **R703**
36. ROOF FRAMING: **R802**
- a. Size, spacing and direction of all rafters.
 - b. Size, spacing and direction of all ceiling joists
 - c. If trusses, add note to plans: Truss specification sheets with PA design professionals seal and layout/placement diagram shall be on site at time of rough framing inspection
 - d. Pitch of all roofs.
37. ROOF SHEATHING: Composition; Grade; Thickness; Blocking or "H"-clips **R803**

38. ROOF VENTILATION (ex.: Ridge vent, insulation baffles, vented soffit.) **R806**
39. ATTIC ACCESS: Show access locations with minimum 22"x30" opening for any roof space >30" **R802**
40. ROOF COVERING:
 - a. Indicate materials (ex.: fiberglass shingles, slate, metal, etc.), including felt underlayment.
 - b. Indicate ice guard to extend 24" inside the interior wall plane of the building.
41. CHIMNEYS AND FIREPLACES: Show
 - a. Locations.
 - b. Indicate type - masonry or factory built. (factory built shall be listed and labeled by UL or other approved listing agency) **R1001 & R1002**
 - c. Footing size and thickness (if applicable) **R1001.1.1**
 - d. Chimney Termination shall be 2 feet higher than any portion of building within 10 feet **R1001.6**
 - e. Fireplace hearths shall be 16 inches in front and 8 inches beyond each side of firebox less than 6 sq ft, or 20 inches in front and 12 inches beyond with firebox greater than 6 sq ft **R1003.10**
42. STONE & MASONRY VENEERS
 - a. Indicate brick ties at 16 inches on center in either direction, with horizontal 9 gage wire mechanically attached to ties
 - b. Show lintel size for veneer support over windows and doors - **Table R703.7.3**
43. COMBUSTION AIR: Minimum requirement is 50 cubic ft of room volume/ 1000 BTU heat input unless; If building is unusually tight construction combustion air shall be obtained from outside **M1702**
44. ELEVATION OF APPLIANCES: Appliances in garages with an ignition source (gas/oil) shall be placed on an 18 inch min. platform and protected from impact of a 6000 lb. vehicle **G2408.2 & M1307.3**
45. AIR CONDITIONING CONDENSATE DISPOSAL: if located in attic or on wood floor ¾" drains required with auxiliary/secondary drain pan **M1411.3 & M1411.3.1**
46. FUEL-FIRED WATER HEATERS: Shall not be located in closets, OK to locate in bedrooms or bathrooms within sealed enclosures with combustion air vent, direct vent water heaters do not require enclosure **M2005.1, M2005.2, M2003, M2002.4 & P2803**
47. WATER HEATER DRAINAGE: 1.5" deep 24 gauge galvanized pan for water heaters located where leakage will cause damage (wood floors); drain shall be ¾" indirect drain **P2801.5, P2801.5.1 & P2801.5.2**
48. CHIMNEY VENT TERMINATIONS: vent terminal shall be located not less than 4 feet below, 4 feet horizontally from, or 1 foot above any door, window or gravity air inlet into a dwelling **M1804.2 THROUGH M1804.2.6**
49. SHOWER SIZE: 900 sq inches and 30 inch minimum dimension. **P2708**
50. WHIRLPOOL BATHTUB: Access panel shall be provided for pump repair/replacement. **P2720.1**
51. CLOTHES DRYER EXHAUST: Maximum 25 feet to outside with 5 foot reduction for 90 degree bends **M1501.3**
52. HOSE BIBBS: Note that a permanently attached anti-siphon connection is required. **P2902.2.3**
53. ELECTRICAL PANEL(S): Show location(s) (not in bathroom or firewall), 30 inch clearance side to side 36 inches in front, and 6.5 feet in height; Light required for servicing panel **E3305.2**

54. RECEPTACLE OUTLETS: Show receptacle outlets in walls (6 ft. max. cord reach), countertops (2 ft. max. cord reach), at islands, in floors, bathroom, laundry, basement and garage. E3801
55. ARC-FAULT PROTECTION: Note bedroom receptacles to be protected by arc fault circuit interrupter breakers. E3802 & NEC210-
56. GFCI PROTECTION: Show GFCI receptacles at kitchen counters, islands, peninsulas, barsinks, garage, unfinished basement, outside of building (front and rear), bathroom, and for spa and whirlpool tub motors. E3802
57. LIGHTING WITH WALL SWITCHES: Show switch controlled lighting in bedrooms, bathrooms, hallways, stairways of 6 or more steps, attached garage, storage room, and outside each exit door. E3802.2 THROUGH E3803.4
58. RECEPTACLES AND LIGHTING IN DAMP AND WET LOCATIONS: Note weatherproof covers for receptacles; lighting to be listed for wet or damp locations E3901.7
59. LIGHT FIXTURES IN CLOSETS: Show incandescent fixtures with 12 inch min. clearance to storage, fluorescent fixtures 6 inch min. to storage E3903.11
60. SUPPORT OF CEILING FANS: Fans shall not be supported from ceiling fan boxes unless the box is listed for that application. E3805.9