



## TOWN OF HILLSBOROUGH BUILDING & PLANNING DEPARTMENT

1600 FLORIBUNDA AVE, HILLSBOROUGH, CA 94010  
Phone: 650.375.7411 ~ Fax: 650.375.7415 ~ Website: [www.Hillsborough.net](http://www.Hillsborough.net)

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### Plan Check Requirements 2012

**Small Projects** (such as Kitchens and Bathrooms affecting less than 500 sq.ft.)

- Applications for permits must be accompanied by three (3) sets of plans and (2) sets engineering calculations (if applicable prepared by a qualified professional.) All plans must be 1/4" or 1/2" scale on a Minimum plan sheet size of 11" x 17" and/or Maximum plan sheet size of 24" x 36". All plan sheets must be stamped and/or signed by the author.

Plans prepared by a design professional such as an Architect or Engineer must be stamped and signed on each applicable page and each Soils report, Title 24, Electrical Calculations and Structural Calculations reports.

All plans must be 1/4" or 1/2" scale on a **MINIMUM plan sheet size of 11" x 17"** and/or **MAXIMUM plan sheet size of 24" x 36"**.

- 1) All pages shall be numbered, with a title block with the title of page, job address, owners name, designer's name, designers address and phone number and dated.
- 2) **Include:** Dimensions and sizes of the rooms, walls, pipes, doors, windows and skylights and note height of ceilings
- 3) **Existing:** Provide a plan indicating the existing conditions and configurations include photos of the area.
- 4) **New Work:** Provide complete plans of the entire scope of work, include all rooms and area's to be worked on
- 5) **Identify:** Existing walls, walls to be removed and or added - switches- lights – fluorescent lights - plugs - GFI plugs - 220 outlets – plumbing - gas lines & location of valves – doors - windows - skylights - appliances - exhaust fans or ventilation
- 6) Residential electrical load calculation may be required. (This is available and can be printed from the handout page)

**Minor repairs only** (Dry rot, termite, water or fire damage.)

All plans must be 1/4" or 1/2" scale on a minimum of 11" x 17" plan paper. Provide photos of the proposed scope of work, or a detailed report with specific areas. The report must include lineal feet or square feet of work to be done.

**NOTE: Open-ended or unclear scope of work plan or reports shall not be accepted.**

**Large Projects** (4 to 5 weeks turnaround)

Applications for permits should be accompanied by four (4) sets of plans and (3) sets engineering calculations prepared by a qualified professional.

**All plans must be 1/4" scale on a MAXIMUM plan sheet size of 24" x 36"**.

Pages should be numbered, with a title block with the title of page, job address, owners name, designer's name, designers address and phone number and dated.

Plans prepared by a design professional such as an Architect or Engineer must be stamped and signed on each applicable page and each Soils, Title 24, Electrical Calculations and Structural Calculations reports.

Indicate Planning status of project: Date the project was approved by the ADRB, incorporate into the plans any conditions of approval from the ADRB or Planning Staff and complete all conditions of approval (i.e. sign-off's offs neighbors, etc.)

The following information must be Incorporated into the submitted plans:

1. General
2. [Site Plan](#) Civil;
3. [Floor Plan](#)
4. [Elevations](#)
5. [Foundation Plan](#) drainage details water proofing to be inspected by others
6. [Floor Framing Plan](#)
7. [Framing Plan](#)
8. [Roof Framing Plan](#)
9. [Electrical Plan](#)
10. [Mechanical Plan](#)
11. [Energy Package](#)
12. [Green Building](#)

In addition, building and demolition permit applicants must execute a separate [Waste Reduction and Recycling Plan](#). This Plan describes the types and quantities of debris that will be generated, and how and where that debris will be recycled. [Learn more](#) about the construction and demolition debris recycling program.

## General

- **Provide story board and colored, material finishes plan sheets**
- **Provide green Point check list within the project plan sheet**
- **Provide conditions of approval**
- **Provide codes used**
- **Hardscape calculations**
- **Demo plan**
- **Recycle plan**
- **Green point check list**

## The Site Plan

- **Show all recorded easements** located on the parcel. Show distances from the proposed structure(s) to all property lines (or nearest edge of road easements). Show, to scale, all existing or proposed structures on the property (such as a garage, well, shed, swimming pool, or HVAC equipment). Also, show the septic system location.

- **Show existing site topography** (prior to grading) using contour lines at 1' or 2' vertical increments. The contour lines must extend a minimum of 20 feet beyond the building site, driveway, or other disturbed area.
- **Show the proposed grading.** This is generally done by using one of two methods: darker, thicker contour lines that overlay the (lighter) existing contour lines; or darker, thicker lines that show cut and fill slopes to scale (the slopes are plotted using a scale). Due to the technical nature of this aspect of the building plans, it is recommended that you have a professional (i.e. civil engineer, architect, or landscape architect) assist with this portion of your plan preparation.
- **Show how storm run-off will be controlled** around the proposed structure. If the building site is relatively level, provide control elevations along drainage swales, showing that a minimum 1% slope will exist. Note that drainage swales should be located a minimum of five feet from the foundation where practicable, and be rock-lined where the slope exceeds a 1:10 slope (10%).
- **Provide a fully-dimensioned driveway profile** that includes the following: elevations at road edge or top of curb, garage floor, and at each grade break; percentage of slope between grade breaks; and distance between grade breaks.
- **Show how the California Fire Safe Regulations will be met.** Basically, these rules require that driveways be a minimum of ten feet wide, paved where the slope exceeds 16%, have turnouts and turnarounds at certain locations for fire trucks and other vehicles in the event of a fire.

## Floor Plan

- **Provide a fully-dimensioned floor plan** for each building level. Label each room or area with its proposed use and dimensions. Show all doors and windows with nominal sizes.
- **Show the fire separation wall** between a garage and adjacent living space. Show a minimum 1-3/8" solid-core, self-closing door between the two areas. Show 5/8" type-x sheetrock on the garage side of the fire wall, and on the ceiling of the garage if there is living space above, or if the attic is continuous between the garage and adjacent living space.
- **In habitable rooms**, the window area must be at least 10% of the floor area (one-half, openable for ventilation), with a minimum of ten square feet. Kitchens may use artificial light.
- **In bathrooms and toilet rooms** without sufficient natural ventilation, show mechanical ventilation that provides a minimum of five air changes per hour.
- **Sleeping rooms** shall have a window or exterior door for emergency escape. Window sill height shall not exceed 44 inches above floor level. The window shall have a minimum net openable area of 5.7 feet, with a minimum net openable width of 20 inches and a minimum net openable height of 24 inches.
- **Show safety glazing in hazardous locations**, such as (generally): any door if the glazing is within 60 inches of the floor; within 24 inches of a door if the bottom of the glass is less than 60 inches above the floor; within 60 inches of the standing surface or drain in a tub or shower enclosure (includes walls); in window panels that are larger than nine square feet and within 18 inches of the floor; any window within 5 feet of a stairway or landing. [Note that this information has been simplified - the actual hazardous location section of the code is complex and requires careful

consideration during the design of the building. See California Building Code Sec. 2406 for detailed information].

- **For additions**, show the existing rooms adjacent to the addition, including door and window sizes. The plan examiner must determine if the existing room will have sufficient egress, light and ventilation.
- **Show a minimum 36" x 36" landing** on each side of an exterior doorway. Landings must be within 7 1/2" of the opposing floor surface. Any door (interior or exterior) must always swing over a floor or landing ( the bottom of the door must be within one inch of the landing). Exception: a door may open at the top of an interior stairway, provided the door does not swing over the top step.
- **Show a minimum 22" x 30" access** to attic areas that have 30" of headroom.
- **Show a handrail installed on one side of each flight of stairs.** A stairway is defined as four or more risers (three treads plus an upper floor level equals four risers).

## Elevations

- **Provide 4 exterior elevations** (side views) of the proposed structure (North, South, East and West). Show the proposed grade as it will be after final grading. For example, if the building foundation will be stepped to match an existing slope, this must be shown on each elevation. Discrepancies between the site plan topography and plan elevations will result in a correction comment (a common error).
- **For additions**, you may show elevations affected by the addition only.

## Foundation Plan

- **Attach a Soils Engineering Report** by a licensed Geo-technical Engineer to the approved plans when foundation is to be constructed on disturbed (fill) material.
- **Provide a North arrow** that matches the building orientation on the site plan.
- **Be certain that (properly-sized) piers** are located under concentrated loads such as posts or trimmers supporting load bearing members such as beams or girder trusses. If the posts are located at an exterior footing, the footing should be widened to the same dimension as the required pier. *Note: the omission of piers is the most common structural error found on plans and during framing inspections, and is a serious oversight.*
- **If there are hold-downs (seismic anchors)**, provide a hold-down schedule on foundation plan.
- **Note on plan** that all hold-downs are to be fastened in place prior to foundation inspection.
- **For building sites** steeper than a 1:10 slope (10%), provide a stepped footing detail (cross section).
- **Show all foundation elements** in plan view, including interior footings and piers, if applicable.
- **Provide a cross-section** showing typical footing/stem wall or footing/slab dimensions, including placement and size of reinforcement.
- **Specify foundation bolt size and spacing.**
- **Indicate height and location of retaining walls.** Note that walls exceeding 48 inches from the bottom of the footing to the top of the wall must be engineered, and designed or approved by the Engineer or Architect of Record, if applicable.

- **For slab-on-grade construction**, show type of slab reinforcement. Also show vapor barrier if it is a habitable area. Be sure that the reinforcement type installed matches the plan engineering (a common error).

### Floor-framing Plan

- **Show minimum underfloor ventilation** of 1 sq. ft. per 150 sq. ft. of floor area with cross-ventilation.
- **Show the type, size, and spacing of girders and floor joists.** If manufactured joists are used, show the joist series and live-load deflection used. Note that floor joists must be spaced no further apart than 16" o.c. when the underside forms part of a fire separation, such as between a garage and a living space above.
- **Show the thickness and span rating** of the floor sheathing (for example: 3/4", 20/40 plywood).
- **Provide additional support** under concentrated loads such as brick hearths, rock work, wood stoves, gas stoves, and so forth.

### Framing Plan

- **Show all header/beam locations and sizes.** Note that beam sizes must match the project engineering (a common error).
- **Show method of bracing the structure.** Provide fastener size and spacing for shear walls or braced wall panels.
- **Provide one or more typical cross-sections** to clearly showing how the structure will be constructed. Provide close-up details to clarify specific connections or other special framing.
- **If a deck is to be built**, provide a deck framing plan with a typical cross-section.

### Roof Framing Plan

- **If the roof consists of engineered trusses**, provide two sets of wet-stamped and signed truss drawings. If there is an Engineer or Architect of Record, that individual must review the truss drawings and state (in writing) that the truss drawings are compatible with the building design (a common error).
- **For engineered trusses**, show hardware used to fasten truss to top plate (toe-nailing not permitted).
- **Show the thickness and span rating of the roof sheathing** (for example: 5/8" 24/16 plywood).
- **Show minimum attic ventilation** of 1 sq. ft. per 150 sq. ft. (1/150) of attic area.. If the ventilation is evenly-divided between high and low (eaves), the area may be reduced to 1/300.
- **For conventional (non-engineered) site-built roofs**, show rafter size, grade, and spacing. Show wall ties (not collar ties) a minimum of 48" on center.

### Electrical Plan

- **The electrical plan may be included** on the floor plan if sufficient clarity is retained.
- **Minimum service size 150 amp.** must be indicated on the plans
- **Grounding conductors are required in all pipes and conduits.**

- **The electrical plan must include the location of the service panel** and its rated ampacity (ie- 150 amps, 200 amps, etc.). Show all outlets, switches, light fixtures and smoke detectors. Label any 220-volt outlets. Label all required GFCI (ground fault interrupter circuit) outlets. Low-voltage wiring and components such as phone jacks, TV, and security systems may be omitted.
- **Show the locations of all required smoke detectors.** In dwelling units, a detector shall be installed in each sleeping room and a point centrally located in the hallway or access area.

In multi-story dwellings, a detector shall be located at each story, including basements. In split-level areas, the detector shall be located in the upper area (unless there is a sleeping room in the lower area, in which case a detector shall be located on both levels). When sleeping rooms are on an upper level, a detector shall be located on the ceiling near the top of the stairway.

When the ceiling height of a room open to the hallway serving bedrooms exceeds that of the hallway by more than 24 inches (such as a vaulted living area), smoke detectors shall be installed in the hallway and the adjacent room.

Every detector located within a dwelling shall sound an alarm audible in all sleeping areas.

- **Note on the plans** that smoke detectors shall be audible in all sleeping areas (for large or multi-story structures, this normally requires inter-connection of the detectors so that all detectors activate during a fire). Smoke detectors shall receive their primary power from the building wiring and shall be equipped with battery back-up.
- **Outlets must be located** in such a manner that no point along a wall is more than six feet from an outlet (each doorway starts a new wall area). A wall is defined as an area two feet wide.
- **All kitchen counter top outlets** must be GFCI-protected and be spaced no more than four feet apart. Counter top spaces 12 inches wide must have an outlet.
- **Outlets located** in the following locations must be GFCI-protected: garages, carports, underfloor areas, bathrooms, exterior locations, and at wet bar counter tops.
- **Three-way light switches** must be located at the top and bottom of each stairway.
- **To meet Title 24 Energy requirements**, show that general use lighting in bathrooms and kitchens will be high efficiency (minimum 40 lumens per watt)
- **AFCI**: Indicate that all of the bedroom receptacles shall be AFCI (arc-fault) protected.

## Mechanical Plan

- **The mechanical plan** may be included on the floor plan if sufficient clarity is maintained.
- **Show all gas appliance locations** with the rated BTU (input) of each device.
- **Show where the gas piping** enters the building and the length and size of all piping. Specify the type of gas to be used (propane or natural gas). Note that sizing gas piping can be complex - we recommended that your gas supplier, licensed installer, or other qualified professional calculate the gas piping sizes. Note that undersized piping can create an unsafe condition.

- **Show how gas appliances** in confined spaces will receive combustion air. Note the size and location of the openings. Again, undersizing combustion air openings can create an unsafe condition.
- **Show the size and location of the vent (flue)** from each appliance.
- **If a water heater is located in the garage**, show the burner assembly located a minimum of 18" above the floor. Show approved seismic bracing for all water heaters. Note that gas water heaters cannot be located in a bedroom or bathroom, or gain access through that room.

### Energy Package

- **Provide information showing compliance with the Title 24 Energy Regulations.** Include Form CF-1R and the Mandatory Measures Checklist. Additions may qualify for a short-form available from the Building Department. The author of the energy documents must sign the package.
- **Window orientation** and area on the energy analysis must match the floor plan (a common error).
- **Square footage of the conditioned area** must match the energy analysis.
- **Show all required energy conservation features** on the plans, or attach the "Mandatory Energy Conservation Requirement" list to the plans
- **Show the R-value of the floor, walls and ceilings**