



GENERAL PROJECT INFORMATION

PLAN CHECK NO. _____ DISTRICT NO _____ INITIAL VALUATION _____
JOB ADDRESS _____ CITY _____ ZIP _____
OWNER _____ TELEPHONE (____) _____
ARCH/ENG _____ TELEPHONE (____) _____
APPLICANT _____ TELEPHONE (____) _____
ADDRESS _____ CITY _____ ZIP _____

INSTRUCTIONS

- Corrections with circled item numbers apply to this plan check.
- In the left-hand margin of the circled corrections, please indicate the sheet number and detail or note number on the plans where the corrections are made. Resubmit marked original plans and two corrected sets of plans, calculations and this plan review list.
- Incomplete, unclear, or faded drawings or calculations will not be accepted.
- Incorporate all comments as marked on checked set of plans and calculations and these correction sheets.

GENERAL REQUIREMENTS

1. This () new building or () addition to an existing building shall be designed to comply with the provisions of Section 1613.9 - Seismic Design Provisions for Hillside Buildings, as it is constructed on or into slopes steeper than 1 unit vertical in 3 units horizontal (33.3% slope). (1613.9.1 & 1613.9.2)
2. Identify the Base Level Diaphragm on structural framing plans. (Base Level Diaphragm is defined as the floor at, or closest to, the top of the highest level of the foundation including the highest floor level connected to the stems of the retaining/basement walls). (1613.9.3)
3. The base shear, including forces from the base level diaphragm, shall be resisted by direct connections from a diaphragm strut or collector provided in the base level framing to the foundation. Where the floor below the base extends to the uphill foundation, the connection shall be made directly to the foundation. (1613.9.5.1)
4. Maximum spacing between primary anchors/ collectors is 30 ft. (1613.9.5.2)
5. Where an interior vertical lateral resisting element (e.g. interior shear walls) occurs above and in contact with the base level diaphragm, a diaphragm strut and primary anchor directly below the element shall be provided and connected to the uphill foundation. (1613.9.5.2)
6. Provide details for primary and secondary anchors and diaphragm strut design. (1613.9.8)
 - a. Wood diaphragm struts, collectors, and wood members connected to the primary anchors shall be min. 3 x members.
- b. Provide minimum 0.229-in x 3-in square washer for 1/2-in and 5/8-in diameter bolts, when they are used to connect anchors to wood members.
- c. The diaphragm to foundation anchorage shall NOT be accomplished by the use of toe-nailing, nails subject to withdrawal, or wood in cross-grain bending or cross-grain tension.
7. Grade beams shall extend at least 12-in below the lowest adjacent grade and provide a minimum 24-in distance horizontally from the bottom outside face of the grade beam to the face of the descending slope. (1613.9.10.1)
8. Where a footing or grade beam extends across a descending slope, the stem wall, grade beam, or footing shall extend up to a minimum 18-in above the highest adjacent grade. (EXCEPTION: At paved garage and doorway entrances to the building, the stem wall need only extend to the finished concrete slab, provided the wood framing is protected with a moisture proof barrier.) (1613.9.10.2)
9. No ledgers are permitted when supporting a vertical load of more than 100 pounds per lineal foot and located within 48-in of adjacent grade. Galvanized steel ledgers and anchor bolts, with or without wood nailers, or treated or decay resistant sill plates supported on a concrete or masonry seat, may be used. (1613.9.10.2)
10. All wood framed walls, including nonbearing walls, when resting on a footing, foundation, or grade beam stem wall, shall be supported on wood sill plates bearing on a level surface. (1613.9.10.3)
11. The base of isolated wood posts (not framed into a stud wall) supporting a vertical load of 4,000-lb or more and the base plate for a steel column shall comply with the following: (1613.9.10.4)

- a. When the post or column is supported on a pedestal extending above the top of a footing or grade beam, the pedestal shall be designed and reinforced as required for concrete or masonry columns. The pedestal shall be reinforced with a minimum of four No. 4 bars extending to the bottom of the footing or grade beam.
 - b. The base plate anchor bolts or the embedded portion of the post base, and the vertical reinforcing bars for the pedestal, shall be confined with two No. 4 or three No. 3 ties within the top 5-in of the concrete or masonry pedestal.
 - c. The base plate anchor bolts shall be embedded a minimum of 20 bolt diameters into the concrete or masonry pedestal. The base plate anchor bolts and bases shall be galvanized and each anchor bolt shall have at least two galvanized nuts above the base plate.
12. All steel beams to column supports shall be positively braced in each direction. Steel beams shall have stiffener plates installed on each side of the beam web at the column. The stiffener plates shall be welded to each beam flange and the beam web. Each braced connection or structural member shall consist of at least two 5/8-in diameter machine bolts. (1613.9.10.5)
13. Top and bottom of footings and grade beams shall be level, or stepped when the ground slope exceeds one vertical in ten horizontal. (1809.3)

CALCULATIONS

Downhill Directions

14. In developing the base shear for seismic design, the response modification coefficient (R) shall not exceed 5 for bearing wall and building frame system. (1613.9.4.2.2)
15. Each diaphragm below the base level diaphragm shall be designed for all tributary loads at that level using a minimum seismic force factor not less than the base shear coefficient. (1613.9.7.2)
16. Provide calculations for primary anchors (at and below the base level) per Sec. 1613.9.5.
- a. Primary anchor and diaphragm strut shall be provided at each foundation extending downhill, underneath interior lateral force resisting elements above and in contact with the base level diaphragm.
 - b. The load path and diaphragm struts shall be fully developed into the diaphragm and into the foundation. The foundation must be shown to be adequate to resist the concentrated loads from the primary anchors.
17. Provide secondary anchors in the uphill foundation connecting to diaphragm struts in the base level diaphragm. (1613.9.6.1)

18. Maximum spacing of secondary anchors at the Base Level Diaphragms shall be uniformly distributed along the uphill diaphragm edge, spaced at maximum 4-ft o.c. and designed for a minimum force equal to the base shear coefficient times the accumulated dead load of the building tributary to that level and not less than 600 lbs/ft. (The foundation need not be designed to resist these additional forces.) (1613.9.6.2)
19. Below base level, provide secondary anchors at each floor diaphragms to the uphill foundation. Such anchors shall be uniformly distributed along the uphill diaphragm edge, spaced at 4-ft o.c. max and designed for a minimum force equal to the base shear coefficient times the accumulated dead load of the building tributary to that level and not less than 300 lbs/ft. (The foundation need not be designed to resist these additional forces.) (1613.9.7.4)
20. Primary and secondary anchors and diaphragm struts shall be designed as follows: (1613.9.8)
- a. Design for 125% of the tributary force.
 - b. The 1/3 allowable stress increase permitted under Sec. 1605.3.2 shall not be used when working (allowable) stress design method is used.
 - c. Use seismic load factor 1.7 for steel and concrete anchorage when the strength design method is used.
 - d. Wood ledgers shall not be used to resist cross-grain bending or cross-grain tension.
 - e. Primary anchors, splices, and connections shall be designed in accordance with provisions of section 1613.9.8.
21. Wood structural panel wall sheathing, cement plaster and lath, gypsum wallboard, and tension-only braced frames shall not be used to resist lateral forces below base level. (1613.9.5.4)
22. Braced frames may be used to transfer forces from the primary anchors and diaphragm struts to the foundation provided the lateral forces do not induce flexural stresses in any member of the frame or in the diaphragm struts. Deflections of frames shall account for the variation in slope of diagonal members when the frame is not rectangular. (1613.9.5.4)

Normal to the Downhill Direction

23. Story drift below the base level diaphragm normal to the downhill direction shall not exceed .007 times the story height. The total drift from the base level diaphragm to the top of the foundation shall not exceed 3/4-in (Where the story height varies because of a stepped footing or story offset, the story height shall be an average height). The calculated story drift shall not be reduced by the effect of horizontal diaphragm stiffness. (1613.9.9.4)
24. In developing base shear; the response modification coefficient (R) used shall not exceed 5 for bearing wall and building frame systems. (1613.9.9.2)

25. The design lateral force shall be distributed to each resisting elements of varying heights in accordance with the stiffness of each individual element.

(1613.9.9.5.1)

26. The stiffness of a stepped plywood shear wall may be determined by dividing the wall into adjacent rectangular elements, subject to the same top of wall deflection. Sheathing and fastening requirements for the stiffest portion shall be used for the entire wall. Each section shall be anchored for shear and uplift at each step. The minimum horizontal length of a step shall be 8-ft and the maximum vertical height of a step shall be 2-ft 8-in

(1613.9.9.5.2)

27. Cement plaster and lath, gypsum wallboard, and tension-only braced frames shall not be used to resist lateral forces below the base level diaphragm.

(1613.9.9.6)

NOTES ON PLANS

The following notes must be included on the plans:

28. Nuts of the primary and secondary anchors fasteners shall be tightened to finger tight plus 1/2 wrench turn prior to covering framing.

29. Power-driven fasteners shall not be used to anchor sill plates except at interior nonbearing walls not designed as shear walls.

30. Exterior anchor bolts and post bases shall be galvanized and each anchor bolts shall have at least two galvanized nuts above the base plate.

31. The top of exterior pedestals must be sloped for positive drainage.

32. All main footing and grade beam reinforcement steel shall be bent into the intersecting footing and fully developed around each corner and intersection.

33. Structural Observation by the Engineer or Architect of Record is required in accordance with section 1710.

ADDITIONAL COMMENTS

Lined writing area consisting of horizontal lines across the page.