

# MUNICIPALITY OF ANCHORAGE

Development Services Department



Building Safety

## Handout R.02 Structural Review Items for Plan Review of Residential Permits

### SHORT LIST

1. Check of foundation systems.
  - a. Check for required spread footings under interior hold downs and point loads.
  - b. Check for engineered foundation requirements per plat note or as delineated by the Geotechnical Hazard Assessment Map Hazard Zones 4 & 5. If required, review and approve or comment on it.
  - c. Check for concentrated loads from girders and beams.
  - d. Check for full grout required in masonry.
  - e. Check poured wall thickness as required for number of floors and anchor size embedded in it.
  - f. Check design of anchors for hold downs.
  - g. Check tall basement wall design and anchor bolts in it.
  - h. Verify that damp proofing, water proofing and insulation is sufficient.
  - i. Verify that connection at the top of basement wall is sufficient to transfer soil pressure forces back into the diaphragm and to resisting elements on the other side.
  - j. Verify that all elements from the design are on the plans including size and spacing of galvanized anchor bolts.
2. Check gravity framing.
  - a. Check manufactured joists or dimensional lumber for joist span.
  - b. Is framing around openings sufficient? Provide design.
  - c. Are there any cantilevered areas? Are they adequately supported or supporting above load adequately? Provide design
  - d. Check any beams used as drag struts for combined forces and connections
  - e. Check connections shown at top and bottom of columns and at beam connections.
  - f. Do bearing walls stack continuously to foundation? Verify all load paths.
  - g. Check beams, bearing walls, footings headers, joists, rafters, and trusses. Provide justification for review to confirm all load paths
3. Check roof system.
  - a. Check for girder location and design. Confirm adequate support load path.
  - b. Check for uplift (design and resistance. Reflect connection on plan)
  - c. Review truss shop drawings for input, reactions, and girder design.
4. Check lateral analysis.
  - a. Is it provided?
  - b. Are the engineering items on the plans?

- c. Are the wind and earthquake profiles correct?
  - d. Are forces checked both directions and all floors for controlling force?
  - e. Check that all walls meet minimum aspect ratio of 3.5 to 1 and that no openings are located in a shear panel.
  - f. Are the shear wall schedules correct and on the plans?
  - g. Are unused options removed from the plans?
  - h. Are drag struts located where required by code, designed, and connected with straps?
5. Check diaphragms.
- a. Check design of openings. Provide reinforcement when needed.
  - b. Check forces for blocking requirement and verify that elements are shown on the plans.
  - c. Check chord forces and lap splices.
6. Check lateral force connections from roof to foundation.
- a. Some connections are standard and do not need to be designed; however, all the details should be on the plans and more complex transfer systems should be designed *and* detailed by the designer of record.



Robert Doehl, Building Official

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