



FOUNDATIONS ON COLLAPSIBLE SOILS – ANTELOPE VALLEY AREA

ISSUE:

Foundation systems on collapsible soils in the Antelope Valley region shall be constructed in a manner that will minimize damage to the structure caused by hydro-consolidation settlements. The effect of collapsible soils is usually evidenced in the form of cracks in perimeter footings, separation between footing and slab, cracks in slabs and minor stucco cracks. The foundations in a collapsible soils area shall be constructed in accordance with the recommendation of an approved Soils/Geotechnical Engineer. **For one or two-story Group R-3 and R-3.1 occupancies and accessory Group U occupancies**, where such an approved method of construction is not provided, foundations and floor slabs shall comply with the following requirements:

POLICY:

1. All exterior wall foundations and interior bearing wall foundations shall extend not less than 24 inches below natural or finish grade.
2. Exterior walls and interior bearing walls shall be supported on continuous foundations.
3. Foundations shall be reinforced with a minimum of four continuous horizontal reinforcing bars. At least two ½ inch diameter (# 4) deformed reinforcing bars shall be placed within four inches of the top of the footing and at least two ½ inch diameter (# 4) deformed reinforcing bars shall be placed within four inches of the bottom of the footing.
4. Foundations for exterior walls and interior bearing walls shall be tied to the floor slabs by reinforcing bars (dowels) having a diameter of not less than ½ inch (# 4) and spaced at intervals not exceeding 16 inches on center. The reinforcing bars shall extend at least 40 bar diameters into the footings and the slab.
5. Concrete floor slabs-on-grade shall be cast over two layers of 2-inch sand fill with a minimum 6-mil moisture barrier membrane sandwiched between the two 2-inch layers. The slab shall be at least 4 inches thick and shall be reinforced with #4 at 16 inches on center each way.
6. The soil below an interior concrete slab shall be saturated with clean water to a depth of 18 inches prior to pouring the concrete.
7. Where raised wood floors are constructed in lieu of concrete slabs on grade, positive connections of the floor framing to the perimeter concrete footings which will tie the floor integrally with the foundations shall be made. Details of such connections must be submitted for review and approval and shall meet the minimum anchorage requirements as shown in the attached diagram.

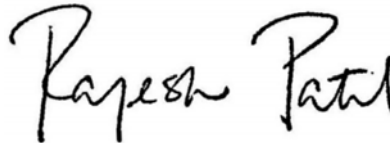
The aforementioned requirements are based on experience and observation of the type of distress caused by collapsible soils in the Antelope Valley area and our engineering judgment to mitigate such effects. It is believed that measures similar to those adopted for expansive soils augmented by positive interconnection of the perimeter and interior grade footings with the slab on grade will result in a homogenous mat or raft type foundation which will adequately resist the settlement effects of hydro-consolidation without producing distress to the superstructure.

RECOMMENDED BY:



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APPROVED BY:



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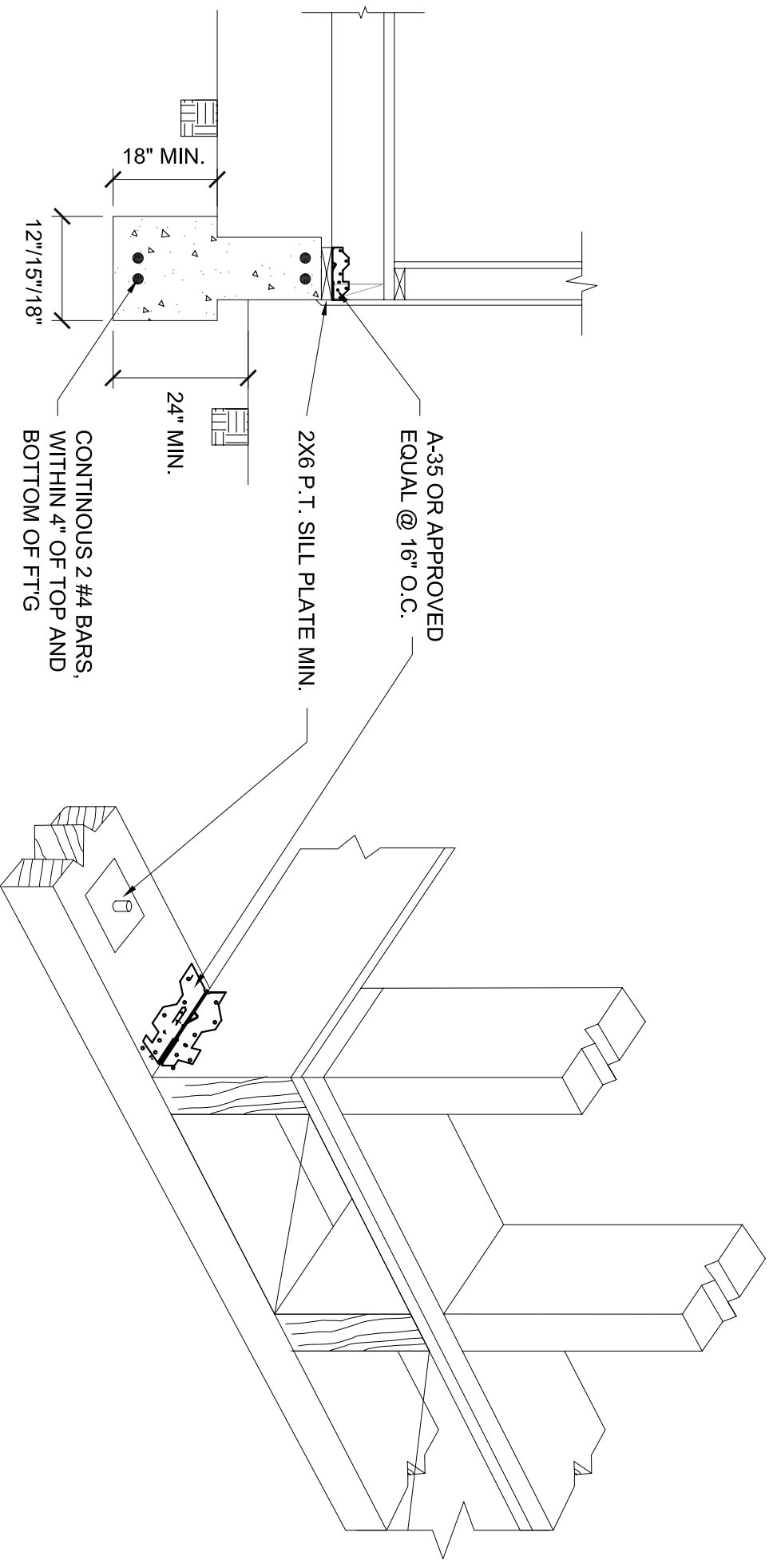
Supersedes BCM 1801 Article 4 dated 05-05-03

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FOUNDATION SYSTEM ON COLLAPSIBLE SOIL FOR 1 OR 2 STORY R-3/ ACCESSORY U OCCUPANCIES

(PER SECTIONS 1802.2, 1802.2.1)



- SOLID BLOCKED CRIPPLE WALL (IF USED), SHALL NOT EXCEED 14" IN HEIGHT WITHOUT ENGINEERING ANALYSIS.
- SHEAR TRANSFER DETAILS AND OTHER REQUIREMENTS NOT SHOWN FOR CLARITY.