City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

Special Inspections
Presumptive Load-Bearing Design

Issue Date	September 15, 2014, Updated October 23, 2023
Code/Section	2018 IBC Sections 110.3.1, 1704.2, 1705.6, Table 1705.6, 1803.5.1, 1806.1, 1806.2 and Table 1806.2 /2018 IRC Sections R401.4, R401.1, and Table R401.4.1
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Purpose:
To clarify the City of Phoenix policy when designers use the presumptive load bearing values in Section 1806.2/R401.4.1 in the structural design of footings and foundations.

Policy:
A foundation may be designed per the requirements of Section 1806.2/R401.4.1 (Presumptive Load-Bearing Values of Soils) without a sealed geotechnical investigation report or soils special inspection certificate with the following limitations:

1. The permit drawings shall include the following information:

    - A statement indicating that the foundation was designed using the presumptive load-bearing values from the City of Phoenix amended Table 1806.2 and R401.4.1
    - The soils classification
    - The maximum allowable bearing pressure and minimum bearing depth below finished grade
    - The allowable lateral bearing pressure and the lateral sliding resistance.

2. The use of Table 1806.2 shall be restricted to **Class 5** soils including CL, ML, MH, and CH and **Class 4** soils including SW, SP, SM, SC, GM and GC;

3. Special inspections and an approved geotechnical report shall be required for all conditions that require **fill placement**.

4. Special inspections and an approved geotechnical report shall be required where the building official has reason to doubt the classification, strength or compressibility of the soil. This includes all new subdivisions and hillside lots.

5. Structures shall be limited to two stories in height with maximum column loads of 25 kips and maximum wall loads of 2 kip/ft.

If the designer does not feel comfortable classifying the soils they may state on the drawings that soils inspections are required to verify the soil type. A geotechnical special inspection certificate should then be submitted with the drawings. This would not necessitate a full soils investigation.

For more information or for a copy of this publication in an alternate format, contact Planning & Development at (602) 262-7811 voice or TTY use 7-1-1.

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EXTERNAL Rev. 01/24
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Background:

For many years, Section 2602.01 of the City of Phoenix Construction Code, in effect prior to September 1, 1991, allowed designers to use an assumed soil bearing value of 1500 psf at 18” below natural grade. This was limited to structures not more than 2-stories in height with column loads not exceeding 25 kips and wall loads not exceeding 2 kips/ft. With the adoption of the Uniform Building Code a policy was developed to allow the use of presumptive bearing values, 1000 psf at 12 inch depth for soil class 5 material and 1500 psf at 18 inch depth for soil class 4 material, without submitting a soil investigation report as long as the presumed soil classification, allowable bearing capacity and bearing depth were identified on the drawings.

The 2018 IBC/IRC requires the soil to be classified per sections IBC 1803.5.1/IRC R401.4, and the IBC requires special inspections for existing site soil conditions, fill placement and load-bearing requirements per IBC 1705.6. For projects of a minor scope, as determined by the limitations listed in this document, the construction documents prepared by the registered design professionals shall be sufficient to determine code compliance.