

DEPARTMENT OF LICENSES AND INSPECTIONS <b>CODE BULLETIN OF INFORMATION</b> <b>No. B-9906-R4</b>		CODE OF GENERAL ORDINANCES OF THE CITY OF PHILADELPHIA <hr/> <b>TITLE 4 — BUILDING  CONSTRUCTION AND  OCCUPANCY CODE</b>
SUBJECT OF BULLETIN:  <b>SOIL INVESTIGATIONS  FOR  NEW CONSTRUCTION</b>		REFERENCE CODE SECTION(S):  B-1803.0 through B-1806.0, R-401.4 and A-305.2.1.12
ISSUED BY		ISSUE DATE
NAME: David J. Perri, P.E.	SIGNATURE:	September 2, 1999 Revised 1/5/01, 10/25/01, 7/7/03, 6/17/05
TITLE: Chief Code Official, Dept. of Licenses and Inspections		<b>PAGE 1 OF 4</b>

## BACKGROUND

The Department has had a number of experiences with distressed buildings and is aware that a significant amount of vacant land within the City consists of landfills and site deposited debris from demolished buildings. In addition, old streambeds exist below grade in some areas of the city. Conditions set forth in the *Philadelphia Building Construction and Occupancy Code* that require foundation and soil investigations are not uncommon within the City. It is therefore determined that foundation and soil investigation shall be required for all building permit applications except as exempted in this Bulletin. The purpose of this Code Bulletin is to set forth those exemptions from the investigation requirement. Further, it will establish criteria for what an investigation requires; and how to record compliance through the construction document process.

## POLICY

A building permit for a new building or an addition shall not be issued without the submission of a sealed soil investigation report.

Exceptions:

1. Additions occupying less than 2000 square feet of built-upon area and three stories or less;
2. Buildings constructed on existing foundation systems. A registered professional engineer shall submit a letter to qualify for this exception (See Attachment A);
3. Where satisfactory data from adjacent areas is available that demonstrates an investigation is not necessary for any of the conditions in Sections B-1803.5.1 through B-1803.5.6 of the Building Code. For this exemption, a registered professional engineer must submit a complete soil investigation from an adjacent site where that site is in sufficient proximity that the soil data can be relied upon for the incident project. This data shall include soil borings taken in the adjacent site.

Note: These exceptions to the routine requirement shall not prevent the code official from requiring an investigation if, in her/his judgment, specific factors so warrant.

1. **Soil Investigation Report** — The applicant shall submit a soil investigation report sealed by a registered professional engineer in accordance with the requirements of Section B-1803.6 of the Building Code (See 2.3 below). It shall include any required supporting data

and a statement by a registered professional engineer that the soil is capable of adequately supporting the proposed construction and occupancy based on her/his observation and investigation.

- 1.1. For buildings three stories or less, less than 40 feet in height and without a basement, the engineer shall provide a soil analysis based on soil borings, test pits or other soil investigation of the load-bearing materials to a depth at least ten feet below the bottom of the foundation or to undisturbed soil, whichever is deeper.
  - 1.1.1 Test pits may not be performed within 20 feet of any point of an existing structure nor within 20 feet of a property line.
  - 1.1.2 Test pits may not be excavated to a depth greater than 14 feet from the existing grade. (It is this limitation on the depth below grade coupled with the requirement of investigating at least ten feet below the bottom of the foundation that excludes buildings with basements.)
- 1.2. For buildings more than three stories or 40 feet in height, or for buildings to be erected on float, mat or deep foundations, the soil investigation and the report must comply with sections B-1803.4 through B-1803.6 (See 2.2 through 2.4 below). The number and types of borings and the sampling procedure shall be determined by the registered design professional in accordance with the Building Code and generally accepted engineering practice.

**2. Construction Documents** — The routine steps in processing the construction documents for new construction or additions, are amended as follows when a soils investigation report is required:

- 2.1. The original plus two copies of the soil investigation report shall accompany the permit application.
- 2.2. The soil classification and design load-bearing capacity shall be shown on the construction document.
- 2.3. The soil investigation report shall include:
  - a. A plot containing the area, height, and use (or average area loading) of the proposed structure.
  - b. A complete record of the soil samples including the method of exploration.
  - c. A record of the soil profile including:
    - a description of the different stratum;
    - standard test pit and/or boring logs including the elevation at grade, proposed footing depth, and record of penetration resistance of the sample spoon;
    - location plan of the test pit and/or borings.
  - d. Elevation of the water table, if encountered.
  - e. Recommendations for foundation type and design criteria, including but not limited to: bearing capacity of natural or compacted soil and the method of determining that value; provisions to mitigate the effects of expansive soils; mitigation of the effects of liquefaction, differential settlement and varying soil strength; and the effects of adjacent loads. Any special precautions required to safeguard adjacent structures.

- f. Expected total and differential settlement.
  - g. Pile and pier foundation information in accordance with Section 1803.5.5
  - h. Special design and construction provisions for footings or foundations founded on expansive soils, as necessary
  - i. Compacted fill material properties and testing in accordance with Section 1803.5.8
- 2.4. The foundation plan for the proposed structure shall include a statement confirming that the foundation system was designed in consideration of the subject soils report and associated recommendations. (If not indicated directly on the plan, a letter from the design professional of record may be submitted.)
- 2.5. Plan examiners shall review the soil investigation report and affix the property address and plan number thereto. The examiner shall attach one copy of the approved report to each copy of the approved plans.
- 2.6. Soil investigation reports submitted in conjunction with a Building Permit Application shall be included for imaging with the application and plan so that the report will be retained as required by the PA. Uniform Construction Code.

**3. District Operations** — Related responsibilities of the inspection district offices are:

- 3.1. Inspection of foundations is required for all projects.
- 3.2. In the event that the contractor does not call for an inspection, a code violation notice shall be issued. As warranted, the building inspector shall require a report, sealed by a registered professional engineer certifying the foundation which was constructed without the call for an inspection, was constructed as approved by the Department's Plans Examiner and is adequate for the structure and occupancy that will be placed thereon.

**SAMPLE LETTER for  
USE OF EXISTING FOOTINGS**

*<Engineer's Letterhead>*

DATE: *<Insert Date>*

RE: *<Insert Project Location – Use same address as Building Permit>*

Dear Building Plans Examiner:

I have inspected the existing footings/foundation system at the subject location. The foundation is constructed of *<Describe the construction of the existing footings/foundation system>*.

It is my professional opinion that the existing footings/foundation system are/is capable of supporting the loads imposed by the new building construction and occupancy and any lateral loads imposed as a result of the proposed construction.

*<Signature of Registered Professional Engineer>*

*<Affix Engineer's Seal — Impression seal or wet stamp>*