

**CDM** Jessberger

A Division of Camp Dresser &amp; McKee Inc.

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March 30, 2001

MILLER CONSULTING ENGINEERS

APR 17 2001

**RECEIVED**Mr. Steve Brady  
1809 SW Parkview Court  
Portland, Oregon 97221Subject: Deck Footing Recommendations  
Brady Residence  
636 NW Macleay Blvd  
Portland, Oregon01-138093R9  
IN IE 32 AC 10300  
2926/4

Dear Mr. Brady:

Camp Dresser and McKee Inc. (CDM) is pleased to present this letter discussing deck foundation recommendations. We understand that the glulam beams supporting the existing deck on the east side of the residence have decayed. The damaged beams will be removed and replaced with a deck supported on new footings with columns. Anticipated column loads are less than 10 kips.

The deck extends over an approximately 40-degree slope. At the eastern edge, the deck is approximately 30 feet above the slope. Vegetation on the slope consists of ivy and a row of evergreen trees. No indications of slope instability (e.g. bent tree trunks, scarps, etc.) were observed.

**Soil Conditions**

On March 28, 2001, a geotechnical engineer from our office advanced three hand-auger borings at the above residence. The borings were located beneath the outside edge of the cantilevered deck, in line with the existing timber piles. We identified the borings from south to north as HA-1 through HA-3. A brief description of the soil conditions at each boring follows:

**Boring HA-1**

Depth (inches)	Soil Description
0 - 6	Loose, black, silty, subangular gravel to cobble-sized BASALT fragments with organics, moist. Gravel size 1" to 6". (TOPSOIL)
6-32	Loose, red-brown, silty, subangular gravel-sized BASALT fragments with trace rootlets, moist. Gravel size predominately 0.5" to 1". (Predominately Decomposed BASALT)
32	Refusal to hand-auger.

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#### **Boring HA-2**

Depth (inches)	Soil Description
0 - 6	Loose, black, silty, subangular gravel to cobble-sized BASALT fragments with organics, moist. Gravel size 1" to 6". (TOPSOIL)
6-24	Loose, red-brown, silty, subangular gravel-sized BASALT fragments with trace rootlets, moist. Gravel size predominately 0.5" to 1". (Predominately Decomposed BASALT)
24	Refusal to hand-auger.

#### **Boring HA-3**

Depth (inches)	Soil Description
0 - 6	Loose, dark brown SILT with organics and some subangular gravel, moist. Gravel size 1" to 6". (TOPSOIL)
6-12	Loose, red-brown SILT with some subangular gravel, (Predominately Decomposed BASALT)
12	Refusal to hand-auger.

It appears that the soil/rock conditions at the proposed deck footing locations are similar to the exposed cuts beneath the residence. The site is underlain with BASALT, the surface of which is highly weathered and decomposed. The BASALT grades less weathered and fresher with depth.

#### **Foundation Recommendations**

The proposed deck columns can be supported on conventional footings bearing on the predominately decomposed BASALT. The BASALT has a high allowable bearing capacity, however, we recommend limiting the design bearing capacity to approximately 3,000 pounds per square foot (psf) because of the sloping ground conditions. Embed the footings at least 5 feet below the lowest adjacent grade unless competent, fresh BASALT is encountered at shallower depths.

The steep slope limits the lateral resistance of the footing. Lateral loads may be resisted by friction between the foundation and the underlying soil/rock. A friction coefficient of 0.50 may be used for footings bearing on the predominately decomposed BASALT. Passive resistance from footing backfill should be neglected.



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The recommended embedment depth will require excavations into the slope. The decomposed and predominately decomposed BASALT is classified as OSHA Type B soils. Type B soils have a maximum allowable slope angle of 1H:1V. As the rock becomes more competent with depth, temporary slopes can be steepened to near vertical. Actual temporary slope inclinations will depend on such factors as the degree of weathering and fracturing.

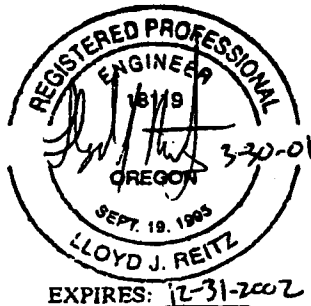
In order to reduce the potential for erosion and slope instability, we recommend backfilling the footing excavations with compacted fill to the original slope grade and removing all excess spoils from the slope.

Site access restricted the equipment and ability to explore the subsurface conditions at the proposed footings. Because of these limitations, we propose that we observe the footing subgrade conditions prior to placing concrete to verify that the subgrade conditions are as anticipated.

We trust that the above information meets your needs at this time. If you have any questions, or if we can be of further service, please contact us.

Very truly yours,

CAMP DRESSER & MCKEE INC.



Lloyd J. Reitz, P.E.  
Geotechnical Engineer

Robert J. Strazer, P.E.  
Associate

cc: Mr. Ray Miller, P.E.