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ACKNOWLEDGEMENT STATEMENT OF POTENTIAL

GEOLOGIC HAZARDS

ENT 43502 BK 2988 PG 343
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1992 AUG 24 4:27 PM FEE .00
RECORDED FOR PROVO CITY

BASED UPON A SITE-SPECIFIC GEOLOGIC REPORT PREPARED BY

RB&G Engineering, Inc. DATED March 3, 1992,
GEOLOGIST OR GEOTECHNICAL ENGINEER

AND FILED WITH THE CITY, THE PROPERTY DESCRIBED:

Lot 40, Plat L of the Oak Hills Subdivision in Provo, Utah

IS SUBJECT TO PHYSICAL HAZARDS OF A GEOLOGIC NATURE, TO WIT:

SEE ATTACHED SHEET(S)

THE MITIGATING MEASURES ARE:

SEE ATTACHED SHEET(S)

I COVENANT AND AGREE THAT WITHOUT FURTHER CONSENT FROM THE CITY ENGINEER, ONLY THE STRUCTURES AND CONSTRUCTION SPECIFIED IN THE ATTACHED GEOLOGIC REPORT SHALL BE COMPLETED. THIS AGREEMENT SHALL BE ENFORCEABLE BY PROVO CITY, ADJOINING LANDOWNERS, AND ANY SUBSEQUENT OWNER OF SUBJECT PROPERTY.

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THE UNDERSIGNED OWNER (S) (IS) (ARE) KNOWLEDGEABLE REGARDING THE GEOLOGIC REPORT, AND (IS) (ARE) PREPARED TO MITIGATE THE HAZARDS INSOFAR AS IS FEASIBLE, AND ACCEPTS ANY RISK WHICH REMAINS. IN CONSIDERATION FOR AUTHORIZATION TO GRADE, OR DEVELOP THE LAND, (I) (WE) DO HEREBY COVENANT AND AGREE TO AND DO HEREBY RELIEVE THE CITY OF PROVO AND ALL OFFICERS AND EMPLOYEES THEREOF OF ANY LIABILITY FOR ANY DAMAGE OR LOSS WHICH MAY RESULT FROM SUCH AUTHORIZATION.

THIS COVENANT AND AGREEMENT SHALL RUN WITH THE LAND AND SHALL BE BINDING UPON THE UNDERSIGNED, ANY FUTURE OWNERS, ENCUMBRANCERS, THEIR SUCCESSORS, HEIRS OR ASSIGNS.

OWNER: Brad Crosby
(SIGNATURE)

OWNER: _____
(SIGNATURE)

OWNER: _____
(SIGNATURE)

OWNER: _____
(SIGNATURE)

STATE OF UTAH,)
: SS.
COUNTY OF UTAH)

SUBSCRIBED AND SWORN TO BEFORE ME THIS 18 DAY OF May, 1992

John H Mullner
NOTARY PUBLIC

RESIDING AT: _____

MY COMMISSION EXPIRES:

_____

NOTARY PUBLIC
Commission Expires
July 25, 1994
JOHN MULLINER
363 No. University Ave. #103
Provo, Utah 84601

ACKNOWLEDGEMENT STATEMENT OF POTENTIAL GEOLOGIC HAZARDS

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Physical Hazards of a Geologic Nature, to Wit:

Geological hazards known to exist in the upland areas east of Provo consist of collapsible type soils, expansive soils, slope stability problems, and seismic considerations. The expansive type soils in the upland area east of Provo are generally associated with the Manning Canyon shale. No Manning Canyon shale exists throughout the site, and there is no evidence in the test boring that any of the subsurface materials have expansive characteristics. The lake sediments are generally not collapsible on absorbing water; however, if these materials have been transported and re-deposited, they frequently exhibit collapse characteristics. The main Wasatch Fault is located near the base of the mountains east of the site, and according to the Provo City Geological Hazards Map, a fault trace exists several hundred feet west of the site. The general area is located in Seismic Zone III according to the Uniform Building Code. The slope of the site downward to the west is relatively flat, and there does not appear to be a slope stability problem at this site.

The Mitigating Measures Are:

We recommend that the foundations for the proposed facility be sized using an allowable soil bearing pressure of 2000 psf, except that in no case, should the width of the foundations for a two-level structure be less than 24 inches, and the width of the foundations for a three-level structure be less than 30 inches.

It is possible that if the level pad for the lower floor is located at 7 to 8 feet below the existing ground surface, some fill material will be required to complete the pad for the lower floor level. The on-site coarse to fine silty sand can be used for this purpose, provided it is densified in accordance with provisions outlined in a subsequent section of this report. It should be recognized that the silty sand has quite high erosive characteristics, and that wherever this material is used as fill, sufficient ground cover should be planted to reduce the erosion throughout the site.

There was no indication during the field investigations at this site that any of the subsurface material possessed collapsible characteristics. Collapsible soils are materials which have a relatively high dry strength, but exhibit considerable settlement if they become wet or saturated. In order to reduce the likelihood of any of the subsurface materials at this site from becoming wet during the life of the structure, we recommend that grading around the structure be performed in such a manner that all surface water will flow freely from the area and that no

ponding will occur adjacent to the structure which will permit deep percolation into the foundation area. Roof drains should extend well beyond the building lines to prevent seepage into the foundation soils. Any fill material supporting structural foundations should be densified in accordance with recommendations outlined below. It is anticipated that the structure at this site will require earth retaining facilities to support the walk-out basement. Where retaining structures are required, we recommend that the earth pressures be calculated using the equation presented in Section 3B of the report. It should be recognized that the pressure calculated by this equation are earth pressures only and do not include hydrostatic pressures. Where hydrostatic pressures may exist behind a retaining structure, we recommend either the wall be designed to resist hydrostatic pressure, or that a drainage system be placed behind the wall to prevent the development of hydrostatic pressures.

The proposed site is located in Seismic Zone III according to the Uniform Building Code, and we recommend that the proposed facility be designed and constructed in full compliance with the code (Chapter 23, 1988, Uniform Building Code.) Brick walls should be securely bolted to the foundation. Brick veneer, if used, should be fastened with closely spaced brick ties. Masonry chimneys should be reinforced to prevent toppling. Natural gas water heaters should be securely strapped to wall studs to prevent overturning from ground motion. A flexible water heater gas connection line should be installed to help prevent fires if the gas line ruptures.

It is anticipated that some grading will be required to provide the level pad for the proposed facility. Prior to placing any fill throughout the site, we recommend that the entire area be stripped to remove any organic matter, including roots and shrubs associated with the vegetation which exists throughout the site.

The coarse to fine silty sand in the upper portion of the soil profile at this site may be used as compacted fill within the building area. If the coarse to fine silty sand is not sufficient to complete the filling operation for the lower floor level, we recommend that a sandy gravel be used for this purpose. The sandy gravel should be a well graded material with a maximum size less than 3 inches and with not more than 15% passing a 200 sieve. All compacted fill within the building area should be densified to an in-place unit weight equal to 95% of the maximum laboratory density as determined by ASTM D 1557-78. Fill material placed outside of the building area should be densified to an in-place unit weight equal to at least 85% of the maximum laboratory density indicated above.

Backfilling around the structure should be densified to an in-place unit weight equal to 90% of the maximum laboratory density indicated above. If the silty sand backfill is property densified, the permeability of this material will be decreased considerably, reducing the ability of surface water to infiltrate into the subsurface material.

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It is important in the grading operations that a positive slope exist away from the building on the easterly side of the structure to prevent the accumulation of surface water adjacent to the building.

The natural material throughout the site is quite highly erosive, and surface drainage provisions on the north and south sides of the proposed facility should be constructed to prevent erosion. Ground cover may be sufficient to prevent erosion in most of the areas; however, where a considerable quantity of water may flow away from the site, hard surfaced areas should be provided to prevent erosion of the natural materials.