



*Applied Earth Sciences*

Geotechnical  
Engineers  
and Geologists

April 20, 1998

766 Lakefield Road, Suite A  
Westlake Village  
California 91361

805 497-9363  
818 889-2137  
FAX 805 373-6938

Jim and Betty Moodhe  
3155 Provence Place  
Thousand Oaks, California 91362

Work Order: 1572-1-4A/28  
Log Number: 18951

Subject: **ADDENDUM TO REFERENCED REPORT REGARDING PILE SUPPORTED RETAINING WALL ADJACENT A 42 INCH WATER MAIN WITHIN THE CALLEGUS WATER DISTRICT EASEMENT, LOT 4A, TRACT 4115, OXLEY PLACE, NORTH RANCH, CITY OF THOUSAND OAKS, COUNTY OF VENTURA, CALIFORNIA.**

References: Gorlan and Associates, Inc., January 14, 1998, Geotechnical Update Report, Proposed Residential Construction, Lot 4a, Tract 4115, Bridgetown Place, North Ranch, City of Thousand Oaks, County of Ventura, California. Work Order: 1572-1-4A/28, Log Number: 18819.

Gorlan and Associates, Inc., March 31, 1998, Addendum to Referenced Report Regarding Retaining Wall Adjacent a 42 Inch Water Main Within the Callegus Water District Easement, Lot 4A, Tract 4115, Bridgetown Place, North Ranch, City of Thousand Oaks, County of Ventura, California.

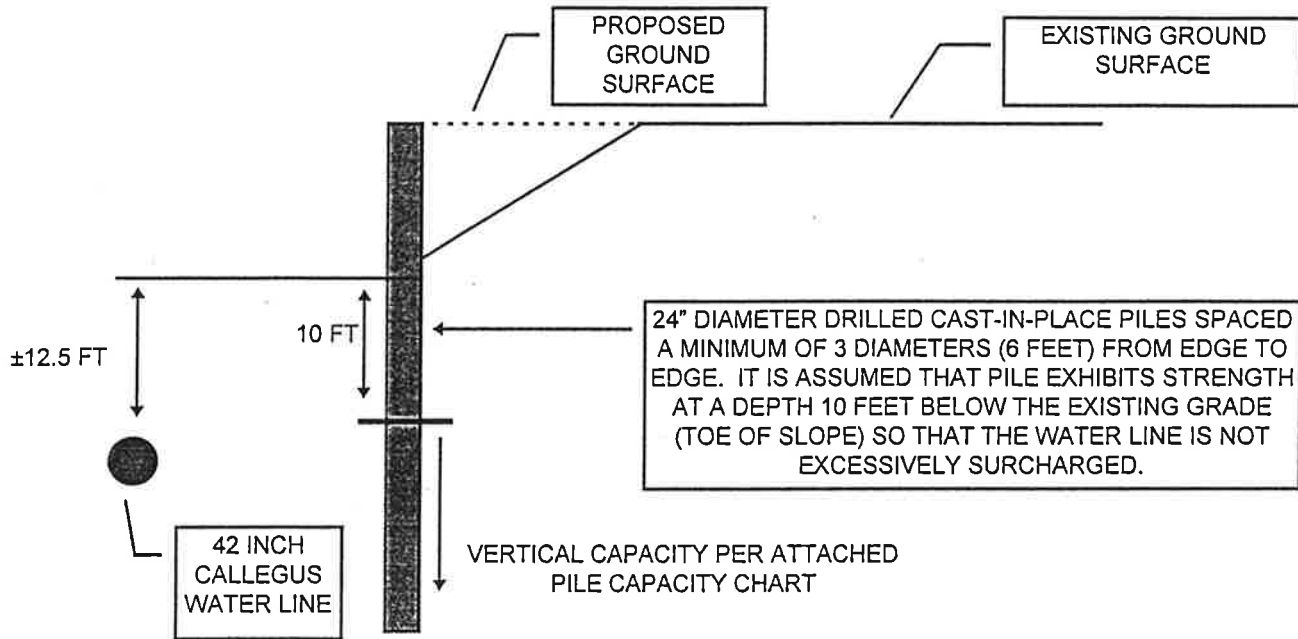
### **BACKGROUND**

A retaining wall is proposed at the rear of the building pad to expand the pad to accommodate a swimming pool. However, the proposed wall will be adjacent to an existing 42 inch diameter water main within the 20 ft wide Callegus Water District easement within the lot. The easement was potholed on March 31, 1998 to determine the as-built depth of the water line. The pipe was found at  $12\frac{1}{2} \pm$  feet below the existing ground surface. The wall is proposed  $10 \pm$  feet from the center line of the pipe. As an alternate to deep conventional footings the wall may be supported on piles. Recommendations are provided herein for the design of the piles. The design provided herein is based on shoring being provided for any excavation within the easement or at the toe of the wall.

### **PILE DESIGN RECOMMENDATIONS**

Friction piles may be used to provide lateral and vertical support for the proposed retaining wall. The friction piles should be cast-in-place concrete piles having a diameter of 24 inches. The piles may be designed to support downward axial loads based on the attached Pile Capacity curve. Vertical capacity may be taken below a depth of 10 feet from the existing ground surface (see sketch below). Each pile should be tied together laterally along the base of the wall with grade beams. The base of the wall/grade beam should be embedded a minimum of 24 inches below the existing ground surface at the downslope face of the wall.

The piles may be designed to resist lateral loads of 150 pounds below a depth of 10 feet (minimum embedment depth). This value may be doubled provided the minimum spacing between piles is three diameters edge to edge. Fixity within the pile may be assumed at 5 feet below the existing ground surface.



ROUGH CROSS SECTION SKETCH

### PILE CONSTRUCTION

Some minor caving or raveling should be anticipated during pile construction as with any deep excavation. Pile excavations should be observed by the project geotechnical consultant prior to placing the reinforcing steel and directly before placing concrete. The excavations should be filled with concrete the same day the holes are drilled to prevent the excavations from drying out.

Soils excavated from the pile excavations should be removed from the slope area of the proposed construction. The excavated soil should not be spread over any the site or over slopes unless properly place and compacted under the observation and testing of the project geotechnical consultant.

### FOUNDATION PLAN REVIEW

Detailed foundation plans should be reviewed by the project geotechnical consultant prior to finalizing the plans.

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Please call if you have any questions regarding this letter or require additional information.

Respectfully submitted,  
GORIAN AND ASSOCIATES, INC.

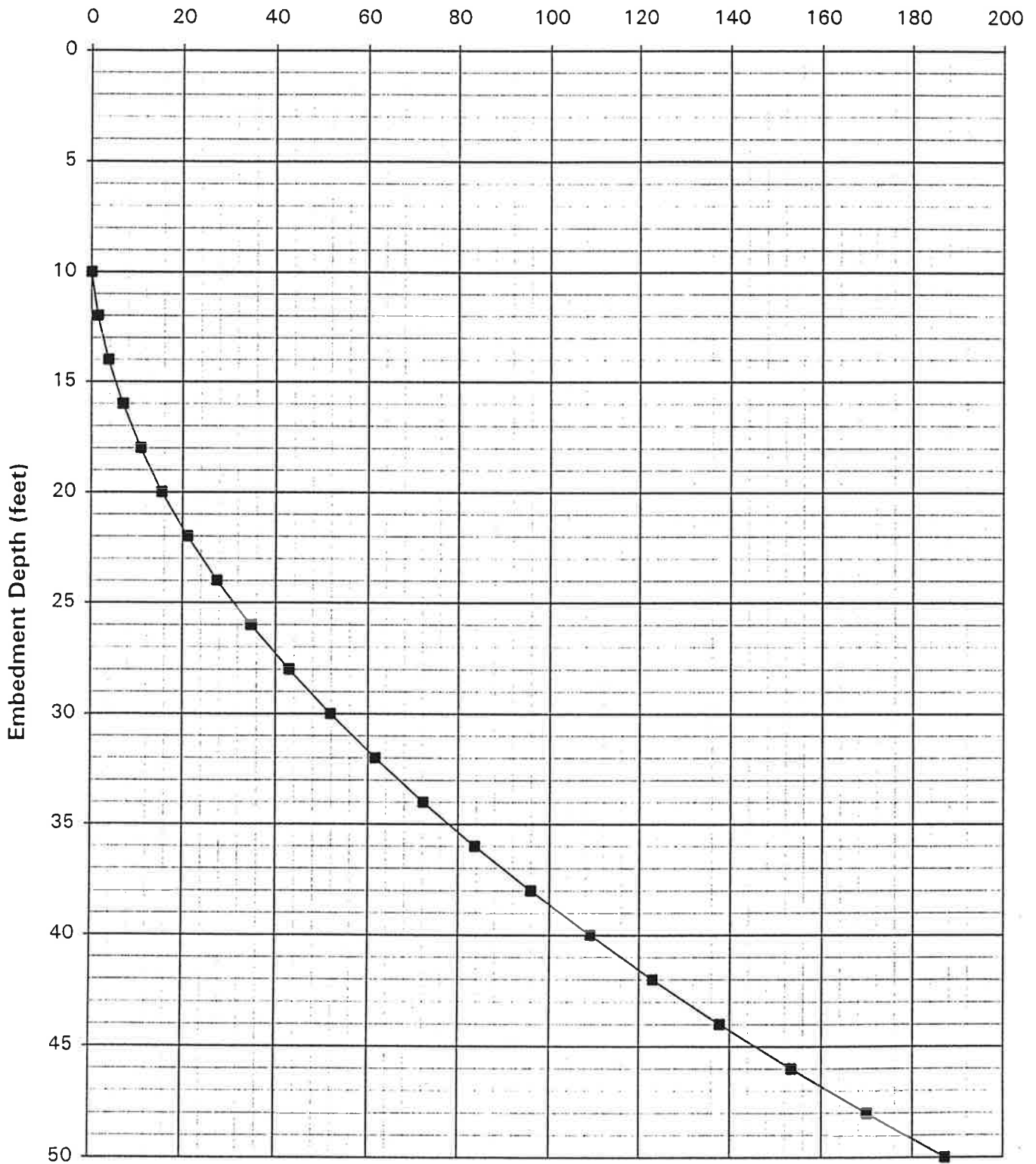
By: Jerome J. Blunck  
GE 151



Distribution: Addressee (4)  
Dunhill Homes, Inc. (2) Attention: Mr. Stewart Hall



**Downward  
Allowable Capacity (kips)**



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Reference: Principles of Foundation Engineering (Das, 1995)

