Geotechnical Investigation
for a
Proposed 8-Lot Subdivision
2740 Ruby Avenue
San Jose, California

for
Howell Development
Los Gates, California

By
REDWOOD GEOTECHNICAL ENGINEERING, INC.
Soil, Foundation & Forensic Engineers
Project No.2284SCL
October 2015

REDWOOD GEOTECHNICAL ENGINEERING, INC.

CONSULTING SOIL, FOUNDATION
& FORENSIC ENGINEERS

Project No. 2284SCL
October 16, 2015

Mr. Gregory Howell
Howell Development and Investments, Inc.
410 N. Santa Cruz Avenue
Los Gates, CA 95030

Subject: Geotechnical Investigation

Reference: Proposed 8-Lot Subdivision
2740 Ruby Avenue
APN 652 29 14
San Jose, CA

Dear Mr. Howell:

As requested, we completed a geotechnical investigation for a proposed 8-lot subdivision. Our exploratory excavations encountered loose surficial topsoil above firm native soil at shallow depths. Static groundwater was not encountered in the exploratory borings. Conventional construction incorporating spread footing foundations appears feasible for the proposed subdivision. Primary geotechnical considerations for this project will include clearing the existing improvements, embedding new spread footing foundations into compacted engineered fill or deeper into firm native soil; and providing firm, uniform subgrade support for new concrete slabs-on-grade. Beneath each of the proposed new building pads, we recommend subexcavating at least 2 feet of the surficial soil and replacing the excavated material in compacted lifts of engineered fill. An existing residence, several agricultural buildings, and several mature trees will also need to cleared from the site. Areas disturbed at depth due to site clearing will need to be excavated to a depth sufficient to expose firm native soil and then backfilled to finish grade with compacted lifts of engineered fill. Positive site drainage will also be critical both during construction and after the project is completed.

This report presents our geotechnical recommendations for design and construction of the project, as well as the findings of our investigation upon which they are based. We request the opportunity to review final project plans prior to construction and to observe geotechnical aspects of the project during construction. If you have additional questions regarding this report, please call our office.

REGISTERED PROFESSIONAL ENGINEER
N. JOSEPH RAFFERTY
No. 2115
EXP. 6/16
GEOTECHNICAL
STATE OF CALIFORNIA

Very truly yours,
REDWOOD GEOTECHNICAL ENGINEERING, INC.

N Joseph Rafferty

N. Joseph Rafferty
G.E. 2115

Copies: 6 to Addressee

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GEOTECHNICAL INVESTIGATION

Introduction

This report presents the results of our geotechnical investigation for a proposed 8-lot subdivision northeast of the intersection of Ruby and Norwood Avenues in San Jose, California, as shown on our Site Vicinity Map (Figure 1). The new residential construction would incorporate lightweight wood-frame construction and conventional spread footings. Our Site Plan Schematic (Figure 2) is based on a copy of the preliminary site plan.

Purpose and Scope

The purpose of our geotechnical investigation at this site was to evaluate the subsurface conditions at the site and the feasibility of the proposed conventional construction. Our scope of work included the following:

1. A visual reconnaissance of the site.

2. A review of available data in our files including published geologic maps and previous work completed by our firm in the site vicinity.

3. Three exploratory borings in the vicinity of the proposed improvements. An underground utility locator (Underground Service Alert) was notified prior to commencing test borings. Samples were collected at selected depths for laboratory testing to evaluate pertinent engineering index properties.

4. Analysis of collected data and preparation of a written report providing geotechnical conclusions and recommendations with respect to the proposed project.

Site Location and Project Description

The property is a large corner lot located east of Ruby Avenue and North of Norwood Avenue in San Jose, California, as shown on our Site Vicinity Map (Figure 1). The natural topography in the site vicinity slopes very gently to the west and southwest. An existing one-story house occupies the southwestern portion of the property. We understand that an existing septic tank and leach field are located directly north of the existing house, in the vicinity of a mature avocado tree. Several agricultural buildings and several mature trees also occupy other portions of the site. We understand that the property was once farmed for prune and walnut trees. The existing structures and the existing trees on the site would be cleared from the property prior to grading new building pads and a new common access road from Norwood Avenue. An approximately ¼-acre lot (APN 652-29-15) was previously split from property. An existing house on this lot would not be part of the proposed subdivision.

Proposed improvements would include 8 new single-family homes, a common access road from Norwood Avenue, and related underground utility improvements. The new residences would incorporate lightweight wood-frame construction, raised wood floors, and conventional spread footing foundations. New concrete slabs-on-grade are anticipated for the lower level garage floors and for exterior hardscaping. Anticipated site grading would include clearing the existing improvements and vegetation from the site, subexcavating for new roadway sections, subexcavating at least two feet of native soil from each new building pad, replacing at least 2 feet of on-site soil as compacted engineered fill on each building pad, installing new utility lines, constructing new pavements in common access road areas, and establishing positive surface drainage.

Subsurface Conditions

We completed a field reconnaissance on September 29, 2015 and logged three 11½- to 21½-foot deep exploratory borings drilled with truck-mounted drilling equipment. The approximate locations of the exploratory borings are shown on the Site Plan Schematic (Figure 2). Subsurface conditions were logged in accordance with the Unified Soil Classification System (ASTM D2487). The boring logs are presented as Figures 3 through 5. The logs denote subsurface conditions encountered at the locations and dates indicated. This does not warrant that they are representative of subsurface conditions at other locations or times. Drive samples were taken by driving split-spoon tube samplers with a 140 lb. hammer dropping 30 inches per blow. The drive samplers utilized either a standard 2" O.D. Terzaghi sampler (T) or 3.0" O.D. modified liner sampler (L). The blow counts recorded on the boring logs indicate the number of hammer blows required to drive the final 12 inches or the depth indicated on the logs.

Laboratory testing of selected samples was completed to evaluate pertinent engineering index properties. The selected samples were tested for natural moisture content and density. The results of the laboratory testing are shown on the boring logs. The natural moisture content and density provide rough indicators of compressibility, strength, and potential expansion characteristics. The strength characteristics of the underlying earth materials were estimated from standard penetration test blow counts within the in situ native soil and from penetrometer measurements on recovered soil samples.

The three exploratory borings encountered a shallow layer of silty topsoil and then medium dense, predominantly granular native silty sand and gravel at shallow depths. At a depth of about 6 to 8 feet we found a significant increase in clay. Below this depth our test borings found to very dense native soil composed of interbedded silty and clayey sand with gravel. We found no indication that the near surface native soil within the upper 5 feet of the native soil profile includes highly expansive clay soil. Our test borings also found no indication that the native soil profile includes unconsolidated soil at depth. Published geologic maps indicate that the site vicinity is underlain by geologically older alluvial fan deposits. The well consolidated, predominantly granular native soil encountered at shallow depths in our borings appeared to be consistent with alluvial fan.

Static groundwater was not encountered at the time of our investigation. We understand that the water level within an existing well has remained relatively constant at a depth of 32 feet for several decades. We note that water levels may fluctuate due to variations in rainfall, stratification, construction activity or other factors not evident during our investigation. Seasonal seepage commonly occurs in stratified alluvial soil layers when rainfall is perched within granular layers above fine-grained silty and clayey layers.

Seismicity

A general discussion of seismicity is presented below. A detailed discussion of faulting, seismicity, and geologic hazards is beyond the scope of this report. The primary seismic hazard at this site appears to be from strong ground shaking. Traces of the active San Andreas fault are mapped about 16 miles to the southwest of the site. Traces of the active Calaveras fault are mapped about 3 miles to the northeast. These major fault systems have generated moderate to major earthquakes on several occasions during the recorded history of the area. Smaller fault systems in the site vicinity may also be capable of generating strong to severe ground shaking at this site. Mapped fault traces in the site vicinity are shown on the 1999 Preliminary Geologic Map of the San Jose 30 X 60 Minute Quadrangle by Wentworth, C. M. et al. No mapped fault traces or mapped zones of high fault rupture hazard were found to cross the property. The potential for seismically induced liquefaction within the firm native soil encountered at this essentially level site appears very low. The potential for lateral spreading or seismically induced landsliding also appear negligible. Based on the above, we do not anticipate that a detailed geologic investigation would be required for the proposed site improvements.

The proposed building site is located within the seismically active San Francisco bay area at a latitude and longitude of **37.3321° N** and **-121.7823° W**. Based on the 2013 California Building Code (& ASCE design manual 7), the firm native soil encountered to a depth of over 30 feet was characterized as a stiff soil profile, **Site Class D** (Table 1613.5.2). Based on the site coordinates and site class, seismic design parameters for this site are summarized below:

S_S	S_1	S_{DS}	S_{D1}
1.629	0.605	1.086	0.605

DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

Based on the results of our investigation, the site appears compatible with the proposed project, provided the following recommendations are incorporated into the design and construction of the site improvements. Our firm must be provided the opportunity for a geotechnical review of the final project plans and specifications prior to construction. Our exploratory excavations encountered less than 12 inches of loose surficial topsoil near the ground surface and firm native soil at shallow depths. Conventional spread footings appear feasible at this site. Structural foundations should be embedded into compacted engineered fill or below the engineered fill zone into firm, undisturbed, native soil. Continuous spread footings should support all bearing walls and shear walls. Isolated interior footings may be used to support floor loads, exterior decks, and other lightly loaded structures.

Anticipated site work would include clearing the existing structures and trees from site; installing new utility lines along a new common access road; subexcavating the building pads down to firm native soil, and then placing compacted lifts of engineered fill to bring each pad back to finish pad grade. A preliminary site plan was provided to us at the time of our investigation. We request the opportunity to review the final grading and drainage plans prior to construction.

Positive site drainage will be a critical consideration both during construction and after the project is completed. The finish grading must provide for positive drainage gradients away from the site improvements. The final grading and landscaping must not obstruct the site drainage or allow moisture to accumulate adjacent to foundations, slabs, pavements, or other improvements. Exterior slabs and driveway pavements should be positively sloped for drainage. Diligent maintenance of the drainage improvements to control surface runoff and seepage will remain the owners' responsibility for the life of the improvements. Drainage improvements should be easily accessible for maintenance and should incorporate durable materials to provide a long service life.

The following recommendations should be used as guidelines for preparing project plans and specifications:

Site Grading

1. Fills supporting new structures, slabs, or pavements, should be placed in compacted lifts as engineered fill. Where referenced in this report, Percent Relative Compaction and Optimum Moisture Content shall be based on ASTM Test Designation D1557-09. The soil engineer should be notified **at least four (4) working days** prior to any site clearing or grading so that the work in the field can be coordinated with the grading contractor, and arrangements for testing and observation can be made. The recommendations of this report are based on the assumption that the soil engineer will perform required testing and observation during grading and construction. It is the owner's responsibility to make the necessary arrangements for these required services.

2. Areas to be graded should be cleared of all obstructions including loose fill, existing improvements, trees and their principal roots, and other debris or unsuitable material. New building pads should be subexcavated to expose firm native soil and then brought to finish pad grade with compacted lifts of engineered fill. We anticipate that the required depth of subexcavation within each pad would be 24 inches for the majority of the site. Where site clearing or demolition disturbs the native soil at greater depth, the disturbed soil should be subexcavated to expose firm native soil and then replaced in lifts

as compacted engineered fill. Subexcavation should extend 5 feet horizontally beyond the proposed building envelope for each pad. Engineered fills should bear on firm native soil. Depressions or voids created during site clearing should be backfilled with engineered fill.

3. Areas to receive engineered fill should be scarified to a depth of 6 inches, moisture conditioned, and compacted. These areas may then be brought to design grade with engineered fill. Engineered fill should be placed in thin lifts not exceeding 8 inches in loose thickness, moisture conditioned, and compacted to at least 90 percent relative compaction. Moisture content should be about 2 to 6 percent above the optimum moisture content. Portions of the site may need to be moisture conditioned to achieve a moisture content suitable for effective compaction. The upper 6 inches of pavement subgrades should be compacted to at least 95 percent relative compaction. The aggregate base below pavements should likewise be compacted to at least 95 percent relative compaction.

4. If grading is performed during or shortly after the rainy season, the grading contractor may encounter compaction difficulty, due to excessive moisture in the subgrade soil. If compaction cannot be achieved by adjusting the soil moisture content, it may be necessary to over excavate the subgrade soil and replace it with select import angular crushed rock to stabilize the subgrade. The depth of over excavation is typically about 12 to 24 inches under these adverse conditions. Specialized grading procedures will require observation by the soil engineer or his representative.

5. Proposed fill materials should be evaluated by the soil engineer prior to placement. The native on-site soils generally appear suitable for use as engineered fill. Import materials used for engineered fill should be non-expansive, free of organic material, and contain no rocks or clods greater than 6 inches in diameter. Larger cobbles should

be broken down or removed from engineered fills. We estimate shrinkage factors of about 10 to 20 percent for the on-site materials when used in engineered fills.

6. Following grading, all disturbed areas should be planted as soon as possible with erosion-resistant vegetation. After the earthwork operations have been completed and the soil engineer has finished his observation of the work, no further earthwork operations shall be performed except with the approval of and under the observation of the soil engineer.

Foundations

7. Conventional spread footings are recommended for the proposed new residential construction. Foundations should be embedded into compacted engineered fill or below the engineered fill within firm native materials. Continuous interior footings or tie beams are recommended below all interior shear walls and bearing walls. Isolated footings should generally be limited to interior floor loads, exterior decks, and other lightly loaded structures.

8. Spread footings should extend at least 18 inches below the lowest adjacent grades. Continuous footings should be 12 inches wide. Isolated footings should be at least 18 inches in diameter. Actual footing depths should be determined in accordance with anticipated use and applicable design standards. The footings should be reinforced as required by the structural designer based on the actual loads transmitted to the foundation.

9. The foundation trenches should be kept moist and be thoroughly cleaned of all slough or loose materials prior to pouring concrete. In addition, all footings located adjacent to other footings or utility trenches should have their bearing surfaces founded

below an imaginary 1.5:1 plane projected upward from the bottom edge of the adjacent footings or utility trenches.

10. Foundations designed in accordance with the above may be designed for an allowable soil bearing pressure of **2,000 psf** for dead plus live loads. This value may be increased by one-third to include short-term seismic and wind loads.

11. For lateral loads, a friction coefficient of **0.35** may be assumed at the base of the footing. Additional passive resistance may be assumed where footings are poured neat against firm native materials. An equivalent passive fluid pressure of **500 pcf** may be applied to the sidewalls of the footings when poured against firm native materials.

12. Total and differential settlements under the proposed light building loads are anticipated to be less than 1 inch and ½ inch respectively.

Concrete Slabs-on-Grade

13. Concrete slabs-on-grade are anticipated for the garage floors, driveways, exterior patios, and exterior walkways. Prior to construction of each slab, the subgrade surface should be cleared of loose soil and debris. The subgrade should be thoroughly moisture conditioned and proof rolled below proposed slab sections to provide a smooth, firm, uniform surface for slab support. The subgrade below new concrete slabs-on-grade should not be allowed to dry out prior to placing concrete.

14. We recommend that new concrete slabs-on-grade be supported on at least 4 inches of non-expansive granular material bearing on uniformly compacted subgrades. In areas

where floor wetness would be undesirable, a blanket of 4 inches of clean free-draining gravel should be placed beneath the floor slab to act as a capillary break. In order to minimize vapor transmission, a durable impermeable membrane should be placed over the gravel. The membrane may be covered with 2 inches of sand or rounded gravel to protect it during construction. The sand or gravel should be lightly moistened just prior to placing the concrete to aid in curing the concrete but should not have free water within the sand or gravel above the membrane.

15. To minimize random cracks, new slabs-on-grade should be relieved with control joints or headers to divide the slabs into smaller, approximately square sections. Control joint spacing should not exceed 12 feet. Slab reinforcing should be provided in accordance with the anticipated use and loading of the slab.

16. Exterior concrete slab-on-grade sections should be founded on firm, uniformly moisture conditioned and compacted subgrades. Reinforcing should be provided in accordance with the anticipated use and loading of the slab. The reinforcement should not be tied to the building foundations. These exterior slabs can be expected to suffer some cracking and movement. However, thickened exterior edges, a well-prepared subgrade including premoistening prior to pouring concrete, adequately spaced expansion joints, and good workmanship should minimize cracking and movement.

Site Drainage

17. Positive site drainage is critical to the future performance of the proposed improvements. Roof and surface runoff must be intercepted and rapidly diverted away from improvements in a controlled fashion. Landscaping and irrigation include positive

drainage to prevent moisture intrusion below the proposed improvements. The finish grades along the building perimeter should be slightly higher in elevation than the surrounding yard areas and hardscaping for positive drainage. Diligent maintenance of completed drainage improvements is required for the life of the improvements. The drainage improvements should be both durable and easily accessible to promote frequent routine maintenance by the owner. Collected water should be discharged in a controlled fashion. It will be the owner's responsibility to maintain the site drainage system in good working condition for the life of the improvements.

18. Surface drainage must include provisions for positive slope gradients so that surface runoff flows away from the foundations, driveways, and other improvements. Minimum positive slope gradients of two percent are recommended for all concrete and landscape surfaces in the vicinity of the site improvements. Where the ground surface currently slopes toward the building perimeter, the finish grading and landscaping should modify the slope gradients to promote positive surface drainage. Surface drainage must be directed away from the building foundations and concrete slabs. Collected water should be dispersed in a controlled fashion.

19. Full roof gutters should be placed around all eaves. Discharge from the roof gutters should be conveyed away from the downspouts by splash blocks, lined gutters, pipes or other positive drainage. Collected runoff should be discharged away from the building foundations and other improvements.

20. The migration of water or spread of extensive root systems below foundations, slabs, or pavements may cause undesirable differential movements and subsequent damage to these structures. Landscaping should be planned accordingly.

Plan Review, Construction Observation, and Testing

21. Our firm must be provided the opportunity for a general review of the final project plans and specifications prior to construction so that our geotechnical recommendations may be properly interpreted and implemented. If our firm is not accorded the opportunity of making the recommended review, we can assume no responsibility for misinterpretation of our recommendations. We recommend that our office review the project plans prior to submittal to public agencies, to expedite project review. The recommendations presented in this report also require our observation and, where necessary, testing of the earthwork and foundation excavations. Observation of grading and foundation excavations allows anticipated soil conditions to be correlated to those actually encountered in the field during construction.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the exploratory excavations. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that planned at the time, our firm should be notified so that supplemental recommendations can be given.

2. This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information and recommendations contained herein are called to the attention of the Architects and Engineers for the project and incorporated into the plans, and that the necessary steps are taken to ensure that the Contractors and Subcontractors carry out such recommendations in the field. The conclusions and recommendations contained herein are professional opinions derived in accordance with current standards of professional practice. No other warranty expressed or implied is made.

3. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they be due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or partially, by changes outside our control. Therefore, this report should not be relied upon after a period of three years without being reviewed by a soil engineer.

REFERENCES

Barclay Maps, 2000, Santa Clara County 2000 Locaide, California, 150 sheets.

California Building Code, 2013

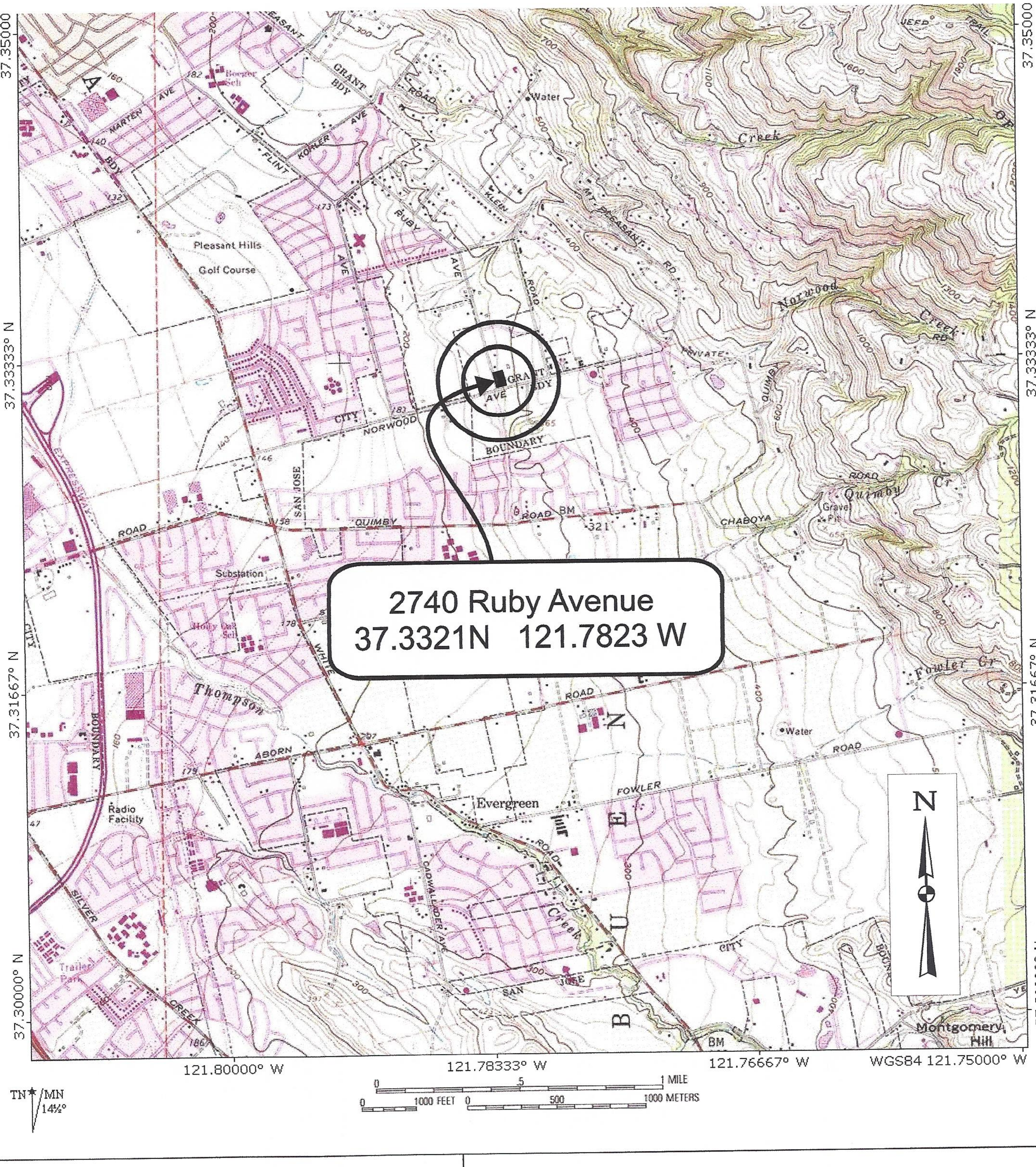
California Division of Mines and Geology, 1998, Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada, International Conference of Building Officials, scale 1/4"=1km.

Rogers, T.H. and Williams, J.W., 1974, Potential seismic hazards in Santa Clara County, California: California Division of Mines and Geology Special Report 107, 39 p., 6 plates, scale 1:62,500.

Wentworth, C. M., et. al., 1999, Preliminary Geologic Map of the San Jose 30X 60 Minute Quadrangle, USGS, OF98-795, scale 1:100,000

Working Group on California Earthquake Probabilities, 1999, Earthquake Probabilities in the San Francisco Bay Region: 2000 to 2030–A Summary of Findings: U.S. Geological Survey Open File Report 99-517, 43 p.

LIST OF FIGURES



2740 Ruby Avenue
37.3321N 121.7823 W

REDWOOD GEOTECHNICAL ENGINEERING, INC.

CONSULTING SOIL, FOUNDATION
& FORENSIC ENGINEERS

SITE VICINITY MAP
2740 Ruby Avenue
San Jose, California

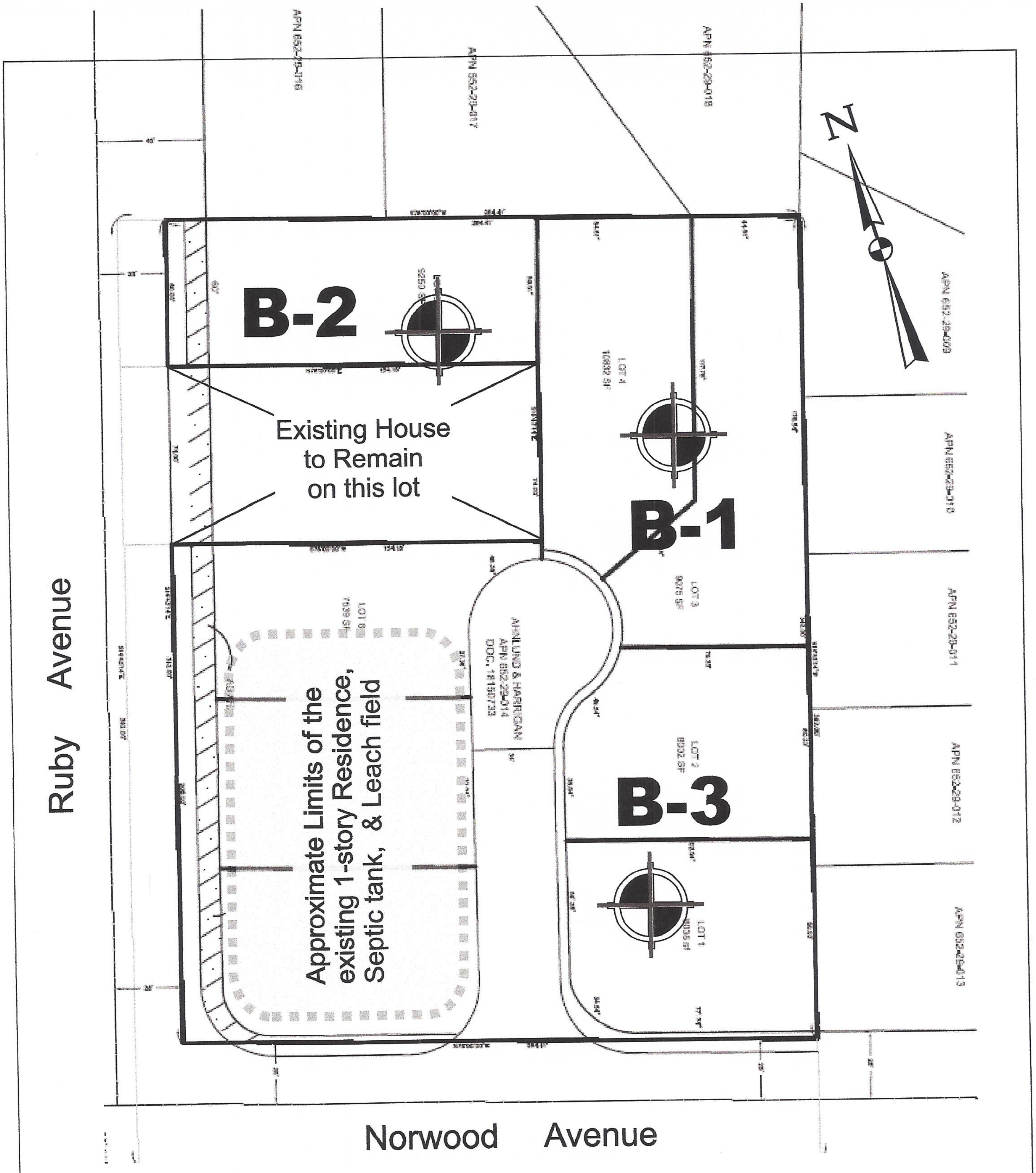
PROJECT NUMBER: 2284SCL

BASE MAP: USGS San Jose East Quadrangle

Octoberber, 2015

Scale: As Shown

Figure 1



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Site Plan Schematic
2740 Ruby Avenue
San Jose, California

PROJECT NUMBER: 2284SCL

BASE: Preliminary Site Plan

October 2015

Approximate Scale: 1 in = 60 ft

Figure 2

LOGGED BY NJR **DATE DRILLED** 9/29/15 **BORING DIAMETER** 4 inches **BORING NUMBER** B1

Depth (ft)	Sample Number and Type	Symbol	SOIL DESCRIPTION	Unified Soil Classification	Blows/foot 350 ft-lb	Pocket Pen. Qu (tsf)	Dry Density (pcf)	Moisture Content (%)	MISC. LAB RESULTS
			~9" of tilled topsoil						
1			Grey brown silty SAND	SM					1-1a
2	1-1 L	B A	damp, medium dense Some clay, some small angular gravels, some reddish brown mottling		23	4.5+	97 112	8.2 8.5	Atterberg Limits: LL=28 PI=11
3	1-2 T		Lighter color Yellow brown silty SAND	SM					
4			damp, medium dense		21	4.5+		7.1	
5			Minor clay, abundant small angular gravels, some white calcareous seams						
6	1-3 L	B A	Gradual increase in clay Brown clayey SAND	SC	31	4.5+	110 118	12.3 5.7	
7	1-4 T		slightly moist, medium dense Some angular gravels, some white calcareous seams						
8					20	4.5+		7.3	
9									
10	1-5 T								
11					59	4.5+		14.7	
12									
13									
14			Uniform drilling in brown clayey sand						
15									
16									
17									
18									
19									
20									
21	1-6 T				43	4.5+		12.3	
22			Terminated @ 21'6"						
23			No groundwater encountered						

PROJECT NUMBER 2284SCL

October 2015

BORING LOG
2740 Ruby Avenue
San Jose, California

Figure 3

LOGGED BY NJR **DATE DRILLED** 9/29/15 **BORING DIAMETER** 4 inches **BORING NUMBER** B2

Depth (ft)	Sample Number and Type	Symbol	SOIL DESCRIPTION	Unified Soil Classification	Blows/foot 350 ft-lb	Pocket Pen. Qu (tsf)	Dry Density (pcf)	Moisture Content (%)	MISC. LAB RESULTS
			Grey brown silty SAND	SM					
1	2-1		damp, medium dense Some clay, abundant small angular						
2	L		gravels, some reddish brown & yellow brown mottling		21		98	9.8	
3	2-2								
4	T				27	4.5+		5.6	
5									
6	2-3 T				29	4.5+		9.6	
7			Increasing clay						
8			Brown clayey SAND slightly moist, medium dense	SC					
9			Some small gravels						
10									
11	2-4 T				21	4.5+		11.2	
12			Terminated @ 11'6"						
13									
14			No groundwater encountered						
15									
16									
17									
18									
19									
20									
21									
22									
23									

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October 2015

BORING LOG
2740 Ruby Avenue
San Jose, California

Figure 4

LOGGED BY NJR **DATE DRILLED** 9/29/15 **BORING DIAMETER** 4 inches **BORING NUMBER** B3

Depth (ft)	Sample Number and Type	Symbol	SOIL DESCRIPTION	Unified Soil Classification	Blows/foot 350 ft-lb	Pocket Pen. Qu (tsf)	Dry Density (pcf)	Moisture Content (%)	MISC. LAB RESULTS
			Grey brown silty SAND damp, medium dense	SM					
1									
2	2-1 L		Some clay, abundant small angular gravels, some reddish brown & yellow brown mottling		36	4.5+	107	12.5	
3	2-2 T								
4					21	4.5+		8.1	
5									
6	2-3 T		More clayey @ 6' Some calcareous mottling Numerous gravels from 6' to 10'		24	4.5+	107	12.5	
7	2-4 T				50/6"			4.0	
8									
9									
10			Grey brown silty SAND damp, dense	SM					
11	2-5 T		Abundant small gravels, some clay		31	4.5+		12.4	
12			Terminated @ 11'6"						
13			No groundwater encountered						
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									

PROJECT NUMBER 2284SCL
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BORING LOG
2740 Ruby Avenue
San Jose, California

Figure 5