PCI
215-057.006

[redacted]

PREPARED FOR:

[redacted]

PREPARED BY:

[redacted]

GEOCON PROJECT NO. E8762-04-03

DECEMBER 2014

[redacted]

[redacted]

Project No. E8762-04-03
December 31, 2014

[redacted]

Attention: [redacted]

Subject: [redacted]
PROPOSED MIXED-USE DEVELOPMENT
SOUTHEAST CORNER OF BERNAL AVENUE AND STANLEY BOULEVARD
PLEASANTON, CALIFORNIA
GEOTECHNICAL INVESTIGATION

Dear Mr. Joosen:

In accordance with your authorizations dated June 3 and November 17, 2014, we have performed a geotechnical investigation for the subject mixed-use project in Pleasanton, California. The purpose of this study was to observe the soil and geologic conditions that may impact site development and provide conclusions and recommendations pertaining to the geotechnical aspects of the project. The findings of this study indicate the site is suitable for development as planned provided the recommendations of this report are implemented during design and construction.

If you have any questions regarding this report, or if we may be of further service, please contact the undersigned at your convenience.

Sincerely,

[redacted]

[redacted]

[redacted]
Senior Engineer

[redacted]

(3) Addressee

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6. SOIL AND GROUNDWATER CONDITIONS

6.1 Artificial Fill

The majority of the site has experienced prior grading and fill placement. To aid in the delineation of artificial fills, we reviewed numerous aerial images (including stereoscopic pairs, where available) dated from 1949 to present. Most of the prior fills were placed to backfill the former gravel quarry pit that generally trended from east to west within the northern portion of the site (see Site Plan, Figure 2). In addition, significant thicknesses of fill were placed along the eastern margin of the site to bring that area up to present grade. The soil conditions encountered in our recent explorations generally corroborated the limits of the fills as shown in historic aerial imagery. Information related to the fill placement (compaction test records, reports, etc.) was not provided and the fills are therefore considered undocumented. The fill materials may contain constituents that differ from those reported herein and/or deleterious materials. Additional areas of artificial fill may be present. Based on historic aerial photographs, the southern portion of the site (south of the former gravel pit) experienced some grading activity in the 1970s, prior to the mass grading episode(s) that filled in the pit and raised site grades along the eastern margin. Based on our recent exploratory test pits, soils conditions in the southwestern area of the site generally consist of two to three feet of artificial fill (including the upper approximately one foot of tilled soil) underlain by native alluvial silts. Remedial grading recommendations are provided in Section 7.5 of this report.

The artificial fills at the site have been investigated during prior studies by others and were a focus of our current investigation. The fill materials are comprised of a variety of soil types but are predominantly silts and clays with variable amount of sand and gravel. In general, below depths of 5 to 10 feet, the fill materials appear to be well-compacted and possess in-situ moisture contents that are above optimum based on the laboratory testing performed during this investigation and prior testing by others. Selected samples of fill materials below depths of approximately 10 feet were subjected to laboratory consolidation testing to loads slightly higher than existing overburden and at saturated conditions. Our consolidation testing generally indicated very low increases in axial strain under these test conditions. In addition, bulk samples for our recent test pits were subjected to laboratory testing for maximum dry density and optimum moisture content (proctor testing). Laboratory in-situ density and moisture content test results from relatively undisturbed samples of fill material were compared to laboratory proctor values and indicated suitable relative compaction and moisture content.

6.2 Alluvium

The site is underlain by Holocene-age alluvium according to several geologic references. Our soil borings and prior explorations by others at the site encountered alluvium at grade in some areas and beneath fill materials where present. Where present below fills in the former quarry pit and along the eastern site margin, the alluvium is generally comprised of stiff to hard silts and clays and medium dense to very dense sands and gravels. Outside of the aforementioned fill areas, the alluvial materials at/near existing grade are typically soft to stiff silts with moisture contents near optimum below depths of approximately 5 feet. The field investigation for this study and prior explorations at the site encountered alluvium to the maximum depth explored - approximately 40 feet below the existing ground surface.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 General

7.1.1 It is our opinion that neither soil nor geologic conditions were encountered during the investigation that would preclude the project provided the recommendations presented herein are followed and implemented during design and construction.

7.1.2 Key geotechnical considerations are the presence of undocumented fills throughout the site and significant cut/fill transitions within the limits of some building pads. Specific remedial grading recommendations are presented herein to mitigate the potential for differential settlements and total settlements due to consolidation in the fill materials.

7.1.3 Based on the subsurface conditions at the site and the anticipated structural loadings, shallow foundation systems such as conventional strip and spread footings and slab-on-grade and/or post-tensioned foundation systems can be used to support the proposed multi-family structures. Specific recommendations for each proposed building are set forth in Section 7.8 below.

7.1.4 It should be understood that the proposed project redevelops a site with past episodes of grading that are not documented. As such, unknown subsurface conditions and additional areas of artificial fill may be present. If warranted, supplemental recommendations will be provided during site development.

7.1.5 Expansive soils are present at the site. Based on our laboratory testing and prior testing by others, the clayey portions of the native alluvium and existing fills possess a low to moderate expansion potential. However, due to the thickness of the fills that underlie portions of the site and cut/fill transitions beneath several building pads, the expansion potential of the site soils does not drive foundation design for most of the structures.

7.1.6 Provided the site is graded in accordance with the recommendations of this report and foundation systems are constructed as described herein, we estimate that post-construction settlement due foundation loads will be less than approximately 1½ inch, and corresponding differential settlement will be less than ¾ inch across a horizontal distance of 50 feet.

7.1.7 A community swimming pool is proposed between Residential Clusters 1 and 2. Specific recommendations for the pool will be provided during project design once pool details are available. For planning purposes, it should be assumed that remedial grading will be required to provide a mat of compacted fill beneath the pool and that pool backfill will consist of select imported materials.

7.1.8 All references to relative compaction and optimum moisture content in this report are based on ASTM D 1557 (latest edition).

7.1.9 Any changes in the design, location or elevation, as outlined in this report, should be reviewed by this office. Geocon should be contacted to determine the necessity for review and possible revision of this report.

7.2.3 Conformance to the criteria presented in Tables 7.2.1 and 7.2.2 for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur if a maximum level earthquake occurs. The primary goal of seismic design is to protect life and not to avoid structural damage, since such design may be economically prohibitive.

7.2.4 Conformance to the criteria in the above table for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur if a large earthquake occurs. The primary goal of seismic design is to protect life, not to avoid all damage, since such design may be economically prohibitive.

7.3 Soil and Excavation Characteristics

7.3.1 We anticipate the existing fills and native alluvial soils can be excavated with moderate effort using conventional excavation equipment. We do not anticipate excavations in the native alluvium at the site will generate oversize material (greater than 6 inches in nominal dimension). However, artificial fills associated with past site activities are present and may contain unknown constituents.

7.3.2 It is the responsibility of the contractor to ensure that all excavations and trenches are properly shored and maintained in accordance with applicable Occupational Safety and Health Administration (OSHA) rules and regulations to maintain safety and maintain the stability of adjacent existing improvements.

7.3.3 The clayey portions of the alluvium and fill materials that underlie the site are considered to be expansive per CBC Section 1803.5.3. Our laboratory testing indicates the clays possess a low to moderate expansion potential. The recommendations in this report assume that foundations for the project will derive support in compacted fill generated from onsite excavations in expansive alluvial soils and the existing undocumented fills.

7.4 Materials for Fill

7.4.1 In general, excavated soils generated from cut operations at the site are suitable for use as engineered fill provided they do not contain deleterious matter, organic material, or cementations larger than 6 inches in maximum dimension.

7.4.2 Import material should be reasonably well-graded from coarse to fine with an Expansion Index less than 50, a Plasticity Index less than 15, be free of organic material and construction debris, and not contain cobble or rock larger than 3 inches in greatest dimension.

7.4.3 Environmental characteristics and corrosion potential of import soil materials may also be considered. Proposed import materials should be sampled, tested, and approved by Geocon prior to transportation to the site.

grade. Strip footings should be at least 12 inches wide. Isolated spread footings should be at least 3 feet square.

7.8.4 Foundations at building perimeters should be continuous strip footings. Where column spread footings are required at the perimeter for structural purposes, they should be integral with the continuous strip footing.

7.8.5 Footings proportioned as recommended may be designed for an allowable soil bearing pressure of 2,500 pounds per square foot (psf). The allowable bearing pressure is for dead + live loads may be increased by up to one-third for transient loads due to wind or seismic forces.

7.8.6 The allowable passive pressure used to resist lateral movement of the footings may be assumed to be equal to a fluid weighing 300 pounds per cubic foot (pcf). The allowable coefficient of friction to resist sliding is 0.30 for concrete against soil. Combined passive resistance and friction may be utilized for design provided that the frictional resistance is reduced by 50%.

7.8.7 Minimum reinforcement for continuous strip footings should consist of four No. 5 steel reinforcing bars; two placed near the top of the footing and two near the bottom. Reinforcement requirements for spread footings should be provided by the project structural engineer.

7.8.8 The foundation dimensions and minimum reinforcement recommendations presented herein are based upon soil conditions only and are not intended to be used in lieu of those required for structural purposes.

7.8.9 The use of isolated footings, which are located beyond the perimeter of the building and support structural elements connected to the building, are not recommended. Where this condition cannot be avoided, the isolated footings should be connected and tied to the building foundation system with grade beams.

7.8.10 Underground utilities running parallel to footings should not be constructed in the zone of influence of footings. The zone of influence may be taken to be the area beneath the footing and within a 1:1 plane extending out and down from the bottom edge of the footing.

7.8.11 The foundation subgrade should be sprinkled as necessary to maintain a moist condition without significant shrinkage cracks as would be expected in any concrete placement. Our representative should observe all footing excavations prior to placing reinforcing steel.

7.9 Post-Tensioned Foundation Recommendations

7.9.1 Post-tensioned foundations should be used to support the proposed multi-family structures in Residential Clusters 1 and 2 and the common buildings to the north of Residential Cluster 2. The foundation systems should be designed by a structural engineer experienced in post-tensioned slab design and design criteria of the Post-Tensioning Institute (PTI), Third Edition, as required by the 2013 California Building Code. In addition to the estimated settlements provided in Section 7.1.6, the post-tensioned design should incorporate the geotechnical parameters presented on the table below. The parameters presented are based on the guidelines presented in the PTI, Third Edition design manual.

7.9.8 Subgrade for post-tensioned foundations should be tested immediately prior to placing underlayment materials (crushed rock and vapor barrier) to verify that subgrade moisture content is appropriate.

7.10 Concrete Slabs-on-Grade

7.10.1 Concrete slabs-on-grade for structures and the parking garage floor should be a minimum of 5 inches thick and minimum slab reinforcement should consist of No. 3 steel reinforcing bars placed 18 inches on center in both horizontal directions. Steel reinforcing should be positioned vertically near the slab midpoint.

7.10.2 Interior slabs should also be underlain by 4 inches of ½-inch or ¾-inch crushed rock with no more than 5 percent passing the No. 200 sieve to serve as a capillary break. The crushed rock should be subjected to several passes with a walk-behind vibratory compactor or similar equipment prior to placing a vapor barrier or rebar for the slab-on-grade.

7.10.3 The podium parking garage slab should be underlain by at least 6 inches of Class 2 Aggregate Base conforming to Caltrans Section 26. The aggregate base should be compacted to at least 95% relative compaction and near optimum moisture.

7.10.4 The slab-on-grade dimensions and minimum reinforcement recommendations presented herein are based upon soil conditions only and are not intended to be used in lieu of those required for structural purposes.

7.10.5 Crack control joints for slabs-on-grade should be spaced at intervals not greater than 10 feet (for 5-inch slabs) and should be constructed using saw-cuts or other methods as soon as practical following concrete placement. Crack control joints should extend a minimum depth of one-fourth the slab thickness. Construction joints should be designed by the project structural engineer.

7.10.6 The recommendations of this report are intended to reduce the potential for cracking of slabs due to soil movement. However, even with the incorporation of the recommendations presented herein, foundations, stucco walls, and slabs-on-grade may exhibit some cracking due to soil movement. This is common for project areas that contain expansive soils since designing to eliminate potential soil movement is cost prohibitive. The occurrence of concrete shrinkage cracks is independent of the supporting soil characteristics. Their occurrence may be reduced and/or controlled by limiting the slump of the concrete, proper concrete placement and curing, and by the placement of crack control joints at periodic intervals, in particular, where re-entrant slab corners occur.

7.11 Moisture Protection Considerations

7.11.1 A vapor barrier is not required beneath slab-on-grade or post-tensioned foundation systems for geotechnical purposes. Further, the migration of moisture through concrete slabs or moisture otherwise released from slabs is not a geotechnical issue. However, for the convenience of the owner, we are providing the following general suggestions for consideration by the owner, architect, structural engineer, and contractor. The suggested procedures may reduce the

7.13 Pavement Recommendations

7.13.1 The upper 12 inches of pavement subgrade should be scarified, moisture conditioned to at least 2% above optimum and compacted to at least 95% relative compaction. Prior to placing aggregate base, the finished subgrade should be proof-rolled with a laden water truck (or similar equipment with high contact pressure) to verify stability.

7.13.2 Sidewalk, curb, gutter, driveway encroachments and public streets should be designed and constructed in accordance with City of Pleasanton requirements, as applicable.

7.13.3 Unless specifically designed and evaluated by the project structural engineer, where concrete paving will be utilized for support of vehicles, we recommend the concrete be a minimum of 6 inches thick and reinforced with No. 3 steel reinforcing bars placed 18 inches on center in both horizontal directions. In addition, doweling, reinforcing steel or other load-transfer mechanism should be provided at joints if desired to reduce the potential for vertical offset. The concrete should have a minimum 28-day compressive strength of 3,500 psi.

7.13.4 We recommend that at least 6 inches of Class 2 Aggregate Base be used below rigid exterior concrete pavements. The aggregate base should be compacted to at least 95% relative compaction near optimum moisture content.

7.13.5 In general, we recommend that concrete pavements be designed, constructed and maintained in accordance with industry standards such as those provided by the American Concrete Pavement Association.

7.13.6 We recommend the following asphalt concrete (AC) pavement sections for design to establish subgrade elevations in pavement areas. The project civil engineer should determine the appropriate Traffic Index (TI) based on anticipated traffic conditions. The flexible pavement sections below are based on estimated design TIs. We can provide additional sections based on other TIs if necessary. A design R-value of 15 was chosen based on site soil conditions and prior lab testing by others. Additional soil sampling and R-value testing may be performed during site grading to confirm or modify the recommendations presented below.

7.14 Retaining Wall Design

7.14.1 Lateral earth pressures may be used in the design of retaining walls and buried structures. Lateral earth pressures against these facilities may be assumed to be equal to the pressure exerted by an equivalent fluid. The unit weight of the equivalent fluid depends on the design conditions. Table 7.14.1 summarizes the weights of the equivalent fluid based on the different design conditions.

TABLE 7.14.1
RECOMMENDED LATERAL EARTH PRESSURES

Condition	Equivalent Fluid Density
Active	45 pcf
At-Rest	60 pcf

7.14.2 Unrestrained walls should be designed using the active case. Unrestrained walls are those that are allowed to rotate more than 0.001H (where H is the height of the wall). Walls restrained from movement such as basement walls should be designed using the at-rest case. The above soil pressures assume level backfill under drained conditions within an area bounded by the wall and a 1:1 plane extending upward from the base of the wall and no surcharges within that same area. Unless project-specific loading information is provided by the structural engineer, where vehicle loads are expected atop the wall backfill, an additional uniform surcharge pressure equivalent to 2 feet of backfill soil should be used for design.

7.14.3 Retaining walls greater than 2 feet tall (retained height) should be provided with a drainage system adequate to prevent the buildup of hydrostatic forces and should be waterproofed as required by the project architect. Positive drainage for retaining walls should consist of a vertical layer of permeable material positioned between the retaining wall and the soil backfill. The permeable material may be composed of a composite drainage geosynthetic or a natural permeable material such as crushed gravel at least 12 inches thick and capped with at least 12 inches of native soil. A geosynthetic filter fabric should be placed between the gravel and the soil backfill. Provisions for removal of collected water should be provided for either system by installing a perforated drainage pipe along the bottom of the permeable material which leads to suitable drainage facilities.

7.14.4 We recommend that all retaining wall designs be reviewed by Geocon to confirm the incorporation of the recommendations provided herein. In particular, potential surcharges from adjacent structures and other improvements should be reviewed by Geocon.

7.15 Surface Drainage

7.15.1 Proper surface drainage is critical to the future performance of the project. Uncontrolled infiltration of irrigation excess and storm runoff into the soils can adversely affect the performance of the planned improvements. Saturation of a soil can cause it to lose internal

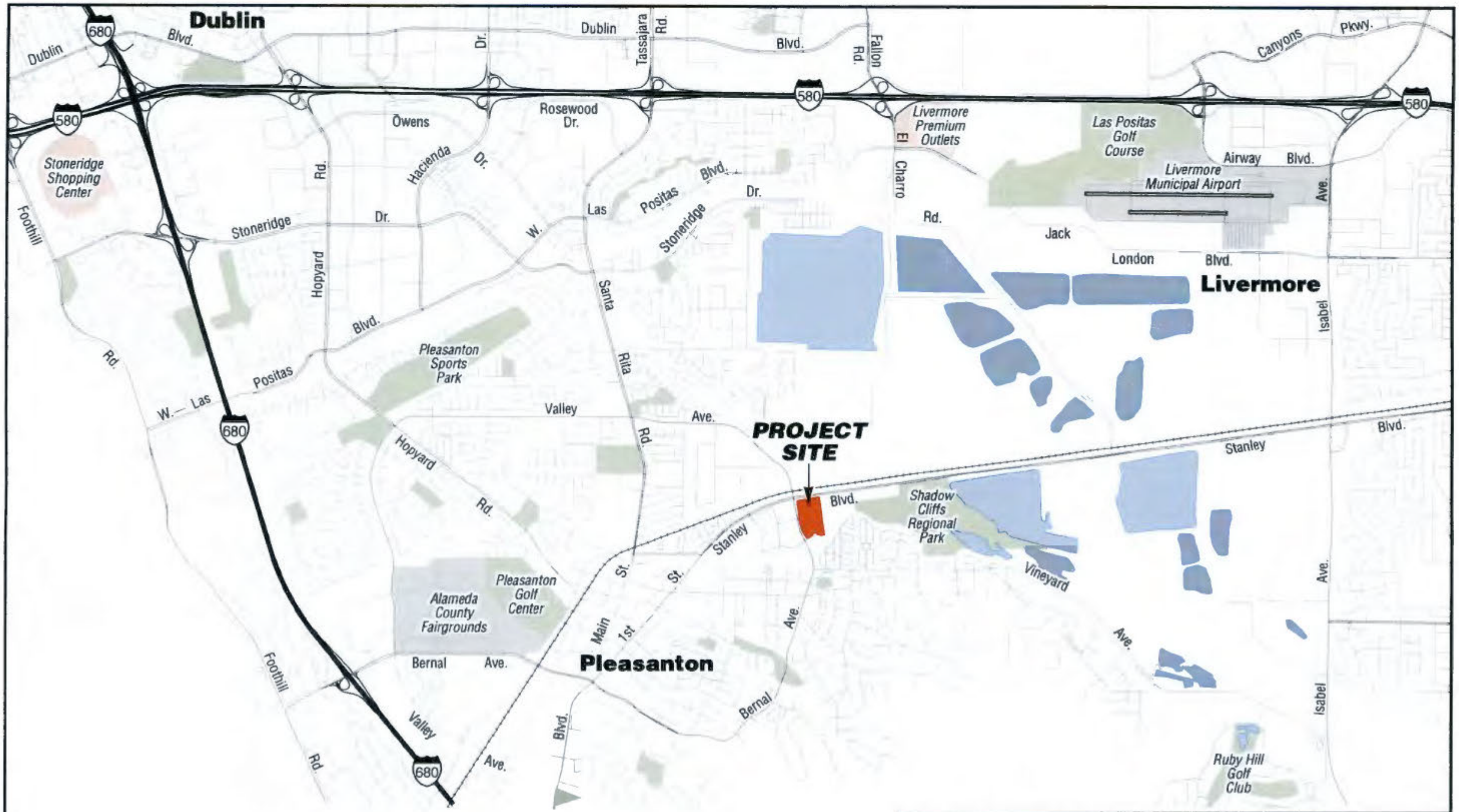
8. FURTHER GEOTECHNICAL SERVICES

8.1 Plan and Specification Review

8.1.1 We should review project plans and specifications prior to final design submittal to assess whether our recommendations have been properly implemented and evaluate if additional analysis and/or recommendations are required.

8.2 Testing and Observation Services

8.2.1 The recommendations provided in this report are based on the assumption that we will continue as Geotechnical Engineer of Record throughout the construction phase and provide compaction testing and observation services and foundation observations throughout the project. It is important to maintain continuity of geotechnical interpretation and confirm that field conditions encountered are similar to those anticipated during design. If we are not retained for these services, we cannot assume any responsibility for others interpretation of our recommendations, and therefore the future performance of the project.



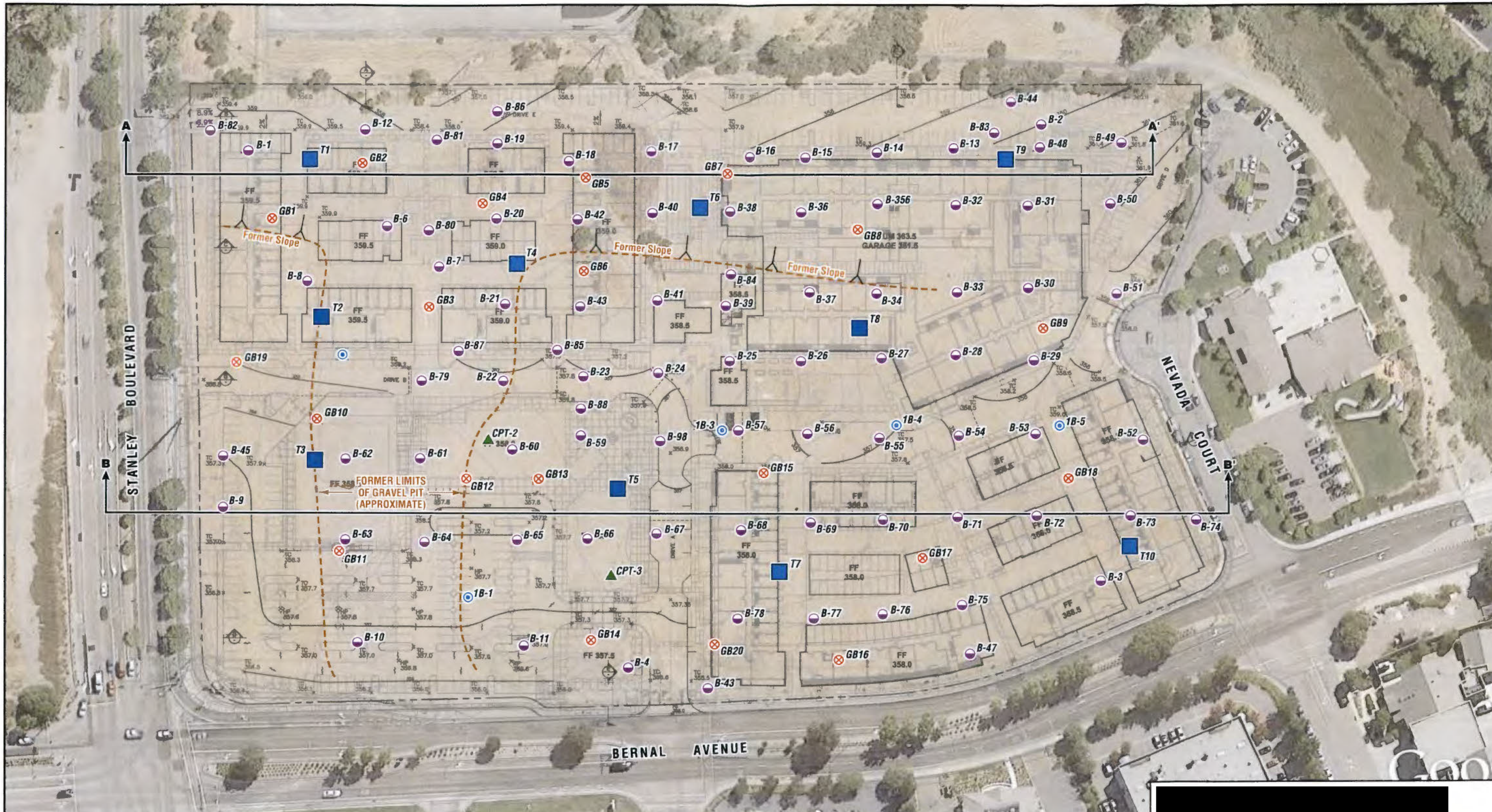
0 1
Scale in Miles

[redacted]

Southeast Corner of Stanley Blvd. and Bernal Ave.
Pleasanton, California

VICINITY MAP

E8762-04-03	December 2014	Figure 1



LEGEND:

GB20 Approximate Location of Exploratory Boring

1B-5 Approximate Location of Soil Boring (Engeo, 2010)

CPT-3 Approximate Location of Cone Penetrometer Test (Engeo, 2010)

B-88 Approximate Location of Soil Boring (Consolidated, 2004-2007)

T10 Approximate Location of Test Pit

A A' Geologic Cross-Section Location (See Figures 3 and 4)

0 100 Scale in Feet

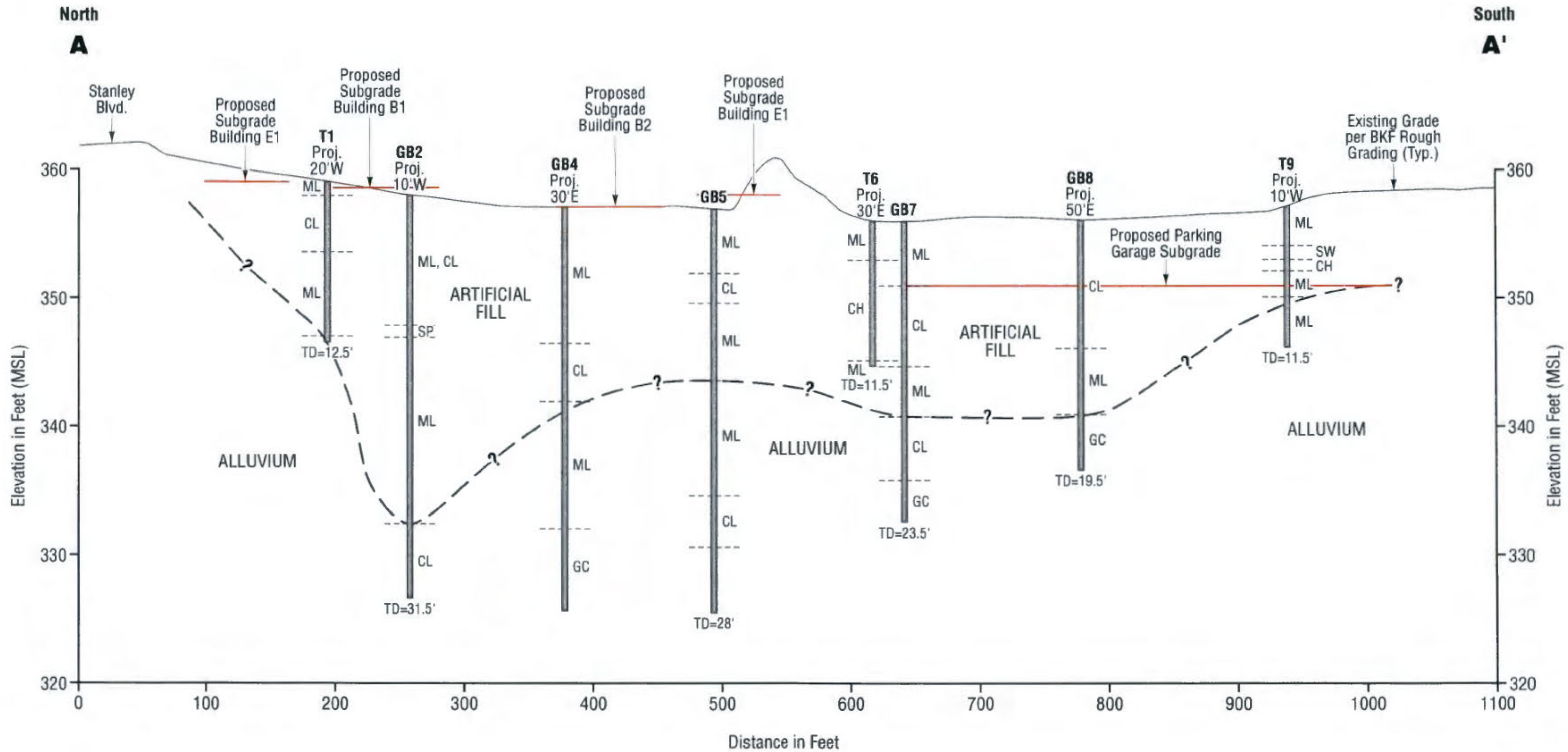
[redacted]

[redacted]

Southeast Corner of Stanley Blvd. and Bernal Ave.
Pleasanton, California

SITE PLAN

E8762-04-03	December 2014	Figure 2

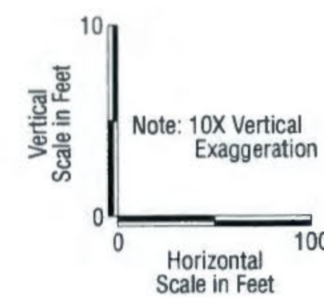


LEGEND: T9 Exploration Location

TD= Total Depth

?— — — Geologic Contact (queried where uncertain)

ML, CL, GC, Etc. USCS Soil Classification



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Southeast Corner of Stanley Blvd. and Bernal Ave.
Pleasanton, California

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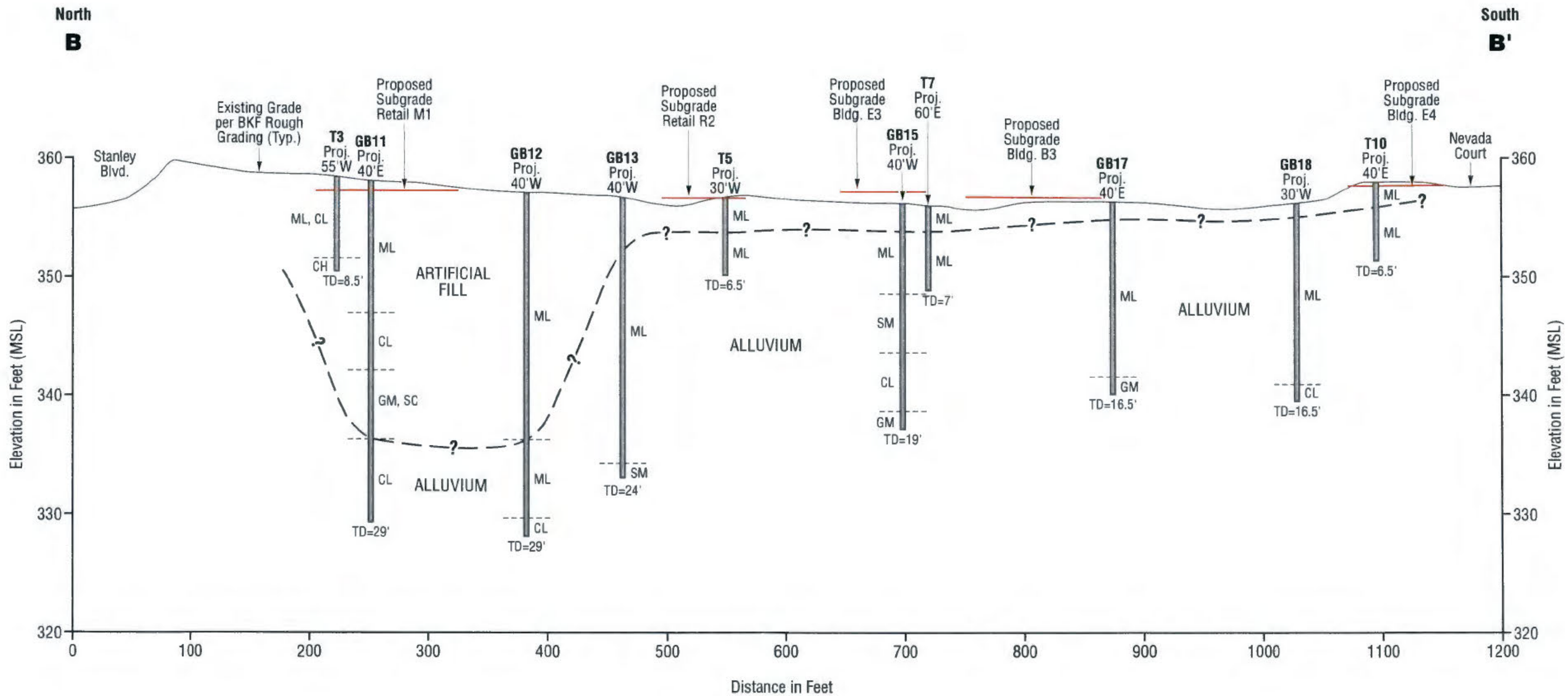
E8762-04-03	December 2014	Figure 3



LEGEND: T9 Exploration Location

TD= Total Depth

?— — — Geologic Contact (queried where uncertain)

ML, CL, GC, Etc. USCS Soil Classification

Vertical Scale in Feet 0–10

Note: 10X Vertical Exaggeration

Horizontal Scale in Feet 0–100

[redacted]

[redacted]

Southeast Corner of Stanley Blvd. and Bernal Ave.
Pleasanton, California

[redacted]

E8762-04-03	December 2014	Figure 4

APPENDIX A

APPENDIX A
FIELD EXPLORATION

Fieldwork for our investigation included a site visit, subsurface exploration, and soil sampling. The locations of the exploratory borings are shown on the Site Plan, Figure 2. Boring logs for our exploration are presented in figures following the text in this appendix. Borings were located in the field by pacing from existing reference points. Therefore, actual boring locations may deviate slightly.

Our subsurface exploration was performed on June 13 and 17, 2014 and included the drilling and sampling of existing soils with a Mobile B-40 drill rig equipped with 8-inch hollow-stem augers. Sampling in the borings was accomplished using a 140-pound downhole-wireline hammer with a 30-inch drop. Samples were obtained with a 3-inch outside-diameter (OD), split spoon (California Modified) sampler, and a 2-inch OD, Standard Penetration Test (SPT) sampler. The number of blows required to drive the sampler the last 12 inches (or fraction thereof) of the 18-inch sampling interval were recorded on the boring logs. The blow counts shown on the boring logs should not be interpreted as standard SPT "N" values; corrections have not been applied. Samples were collected at appropriate intervals, classified by our field geologist, retained in moisture-tight containers, and transported to the laboratory for testing and further classification. The applicable type of each sampling interval is noted on the exploratory boring logs.

Exploratory test pits were also performed during our field investigation. Two test pits to maximum depths of approximately 8 feet were excavated with a John Deere 135D track-mounted excavator equipped with an 18" bucket; relatively undisturbed and bulk samples were obtained for further examination and laboratory testing.

Subsurface conditions encountered in the exploratory borings were visually examined, classified and logged in general accordance with the American Society for Testing and Materials (ASTM) Practice for Description and Identification of Soils (Visual-Manual Procedure D2488). This system uses the Unified Soil Classification System (USCS) for soil designations. The logs depict soil and geologic conditions encountered and depths at which samples were obtained. The logs also include our interpretation of the conditions between sampling intervals. Therefore, the logs contain both observed and interpreted data. We determined the lines designating the interface between soil materials on the logs using visual observations, drill rig penetration rates, excavation characteristics and other factors. The transition between materials may be abrupt or gradual. Where applicable, the field logs were revised based on subsequent laboratory testing.

A soil boring permit was issued by Zone 7 Water Agency. Upon completion, our borings were backfilled in accordance with permit requirements.

PROJECT NO. **E8762-04-03** PROJECT NAME: [redacted]

TRENCH T1

ELEV. (MSL.)		DATE COMPLETED	12/8/2014
ENG./GEO.	LC	DRILLER	GCI
EQUIPMENT	JD 135D Excavator w/18-inch bucket	HAMMER TYPE	

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				ML	Soft, moist, dark brown, Gravelly SILT with sand and clay, no to low plasticity, upper 1 foot disturbed by tilling; (ARTIFICIAL FILL)			
1				CL	Stiff to very stiff, moist, light brown to medium brown, Sandy CLAY with gravel, low to moderate plasticity			
2								
3					-very stiff -pp>4.5			
4					-pp>4.5			
5					-pp>4.5			
6				ML	Very stiff, moist, dark gray, Clayey SILT with gravel, low to moderate plasticity -pp>4.5			
7					-pp>4.5			
8					-pp>4.5			
9					-pp>4.5			
10					-pp>4.5			
11								
	T1-12				-very stiff to hard, damp to moist, dark gray to tan, with (f-c) sand			
12	T1-12-12.5 (BULK)			SM	Medium dense to dense, moist, tan, Silty Clayey (f-m) SAND; (ALLUVIUM) -pp>4.5		110.4	12.2

TEST PIT TERMINATED AT APPROXIMATELY 12½ FEET
NO FREE WATER ENCOUNTERED
BACKFILLED IN LIFTS AND TAMPED WITH BUCKET

Figure A1, Log of Trench T1, page 1 of 1

[redacted]

[redacted]

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... DISTURBED OR BAG SAMPLE
- ... STANDARD PENETRATION TEST
- ... CHUNK SAMPLE
- ... DRIVE SAMPLE (UNDISTURBED)
- ... WATER TABLE OR SEEPAGE

[redacted]CE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS

PROJECT NO. **E8762-04-03** PROJECT NAME: [redacted]

TRENCH T3

ELEV. (MSL.) ____ DATE COMPLETED **12/8/2014**

ENG./GEO. **LC** DRILLER **GCI**

EQUIPMENT **JD 135D Excavator w/18-inch bucket** HAMMER TYPE ____

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0 – 3				ML	Loose, moist, dark brown, Gravelly Sandy SILT, no to low plasticity, upper 1 foot disturbed by tilling; (ARTIFICIAL FILL) -firm to stiff, brown, less sand			
3 – 5				CL	Very stiff, moist, brown, Gravelly Silty CLAY, low to moderate plasticity, mottled orange and black -pp>4.5 -pp>4.5			
5 – 7				ML	Stiff to very stiff, moist, brown, Clayey SILT with gravel, no to low plasticity -pp=4.0 -dark gray, more gravel, less clay -pp=4.5			
7 – 8½	T3-8 T3-8-8.5 (BULK)			CH	Very stiff, moist, dark gray to black, Gravelly Silty fat CLAY, moderate to high plasticity -pp>4.5		112.9	17.1

TEST PIT TERMINATED AT APPROXIMATELY 8½ FEET
NO FREE WATER ENCOUNTERED
BACKFILLED IN LIFTS AND TAMPED WITH BUCKET

Figure A3, Log of Trench T3, page 1 of 1

[redacted]

[redacted]

SAMPLE SYMBOLS
- ... SAMPLING UNSUCCESSFUL
- ... DISTURBED OR BAG SAMPLE
- ... STANDARD PENETRATION TEST
- ... CHUNK SAMPLE
- ... DRIVE SAMPLE (UNDISTURBED)
- ... WATER TABLE OR SEEPAGE