Planning Commission Staff Report

July 10, 2013
Item 6.a.

SUBJECT: **PUD-97**

APPLICANT: Ponderosa Homes / Pamela Hardy

PROPERTY OWNER: Thrivent Financial

PURPOSE: Application for rezoning of an approximately 2.1-acre site at 4202 Stanley Blvd from C-F (Freeway Interchange Commercial) District to PUD-MDR/OS-PH & WO (Planned Unit Development – Medium Density Residential/Open Space – Public Health and Wildland Overlay) District and for PUD Development Plan approval to retain the existing residence, remove the washroom structure with residential unit, storage accessory structure, and the 32 mobile home spaces (hook-up, concrete pads, etc.), to construct 12 detached single-family homes.

GENERAL PLAN: Medium Density Residential – 2 to 8 dwelling units per gross developable acre, Public Health and Safety with Wildland Overlay

SPECIFIC PLAN: Downtown Specific Plan – Medium Density Residential and Open Space

ZONING: Freeway Commercial (C-F)

LOCATION: 4202 Stanley Boulevard

EXHIBITS:

A. Draft Conditions of Approval
B. Site plans, grading and utility plan, slope classification plan, stormwater treatment plan, existing trees plan, floor, roof, and elevation plans, landscape site plan, landscape streetscape, and landscape details plan dated "Received June 14, 2013"
C. Planning Commission Meeting Minutes Excerpt dated November 28, 2012
D. Planning Commission Work Session Staff Report dated November 28, 2012
E. HortScience Tree Report dated "Received June 19, 2013"
F. GreenPoint Rated Checklist for Single-Family dated "Received May 8, 2013"

G. Historic Architecture Evaluation Report dated "Received February 6, 2013"
H. Cultural Resources Review dated "Received February 6, 2013"
I. Preliminary Geotechnical Report dated "Received February 6, 2013" and Addendum dated "Received June 13, 2013"
J. Riparian Survey dated "Received February 6, 2013"
K. Noise Assessment Study dated "Received February 6, 2013" and Addendum dated "Received June 13, 2013"
L. Climate Action Plan Checklist
M. Location and Noticing Maps

BACKGROUND

Preliminary Review Application

In October of 2012, Ponderosa Homes submitted a preliminary review application to demolish the existing residences facing Stanley Boulevard and washroom structure with unit and remove the 32 mobile home spaces and construct 14 single-family homes. Figure 1, below, reflects the preliminary review site plan submitted with the preliminary review application.

Figure 1: Preliminary Review Site Plan

Development of the area raised issues pertaining to the historic evaluation of the existing residence facing Stanley Boulevard, site layout, and house designs. Therefore, staff referred the preliminary review application to the Planning Commission for its review, comments, and direction on the preliminary concept. On November 28, 2012, the Planning Commission held a work session to discuss Ponderosa Homes' preliminary review application and provided feedback on the following specific questions (additional comments made by the Commission are located in the attached minutes – Exhibit C):

1. *Is the proposed density acceptable?*

Some Commissioners were not opposed to 14 lots; however, several Commissioners wanted more space between the homes, a public amenity and a reconfigured layout that placed more of the homes at the rear of the site to allow for more open space within the development. Commissioner Blank felt that the project was too dense and wanted one or two fewer lots to allow for more amenities. Commissioner Pearce felt it would have been appropriate to have a project that was significantly lower in density with more space between the homes and was open to a concept that created more open space by having a development of attached housing (e.g., townhomes).

2. *Is a pedestrian walkway to Vervais Avenue an appropriate amenity to exceed the mid-point density?*

The Commission felt that the proposed private pedestrian walkway to Vervais Avenue, located on the south side of lot 5, shown in Figure 1 on page 2, was not beneficial to the public and, therefore, not necessary since it would not be a public amenity.

3. *Should the structure be demolished to accommodate the proposed development or should the applicant restore and relocate the structure to one of the proposed lots fronting Stanley Boulevard?*

And

4. *Given the age of the structure, should the historic evaluation be revised to reflect information in the Pleasanton Downtown Historic Context Statement?*

The Commission found it difficult to say whether they could support demolishing the home given that the Historic Preservation Task Force was in the process of re-evaluating the Downtown Historic Preservation policies, guidelines, and processes. There was a consensus that more information was needed and that the Commissioners should take a tour of the home in order to better assess whether the structure should be demolished.

Staff notes that the Historic Preservation Task Force is still on-going.

5. *Is the site layout, lot sizes, and home locations acceptable?*

And

6. Are the length of the driveways for lots 1-6 acceptable?

Some of the Commissioners felt that two of the lots should be oriented towards the end of the cul-de-sac and alternatives to the configuration should be considered in order to get larger size lots and more space between the homes. Commissioner Narum preferred a layout that would save the heritage trees that had a good health and structural condition (four or five out of five rating). Commissioner Pearce preferred the proposed layout over a redesigned layout that placed more homes in the back and Commissioner Blank preferred that the layout had one or two fewer lots to create a larger open space.

The Commission did not have any concerns regarding the length of the driveways.

7. Is the on-street guest parking adequate?

The Commission agreed that if parking was available on all of the curb area, then on-street guest parking would be adequate.

8. Should the layout be revised to preserve any of the heritage trees?

The Commission agreed that two of the trees on the eastern side of the property and three of the trees on the western side of the property could be saved and that moving the homes south, or eliminating lots to create more variation in the spacing, could potentially allow a few more heritage trees to be preserved.

9. Should the open space, located on east side of the street bulb, include amenities (e.g., play structure, benches, etc.)?

The Commissioners agreed that an amenity for the proposed open space would be needed, but the type of amenity would be dependent on whether those purchasing the lots have children or couples that are downsizing. It was suggested by Commissioner Pearce that Ponderosa should put money into a fund and then ascertain what type of amenity would be best after the majority of the lots have been sold.

10. Are the FARs appropriate for the development?

The Commissioners were not concerned with the actual FAR number as long as: 1) the density was lower; 2) the lots were re-arranged to allow for more lot space; or 3) the separation between the lots was appropriate.

11. *Does the Commission wish to make any suggestions regarding the house designs or setbacks?*

Commissioner O'Connor requested that the houses look more historic in order to have more character and be in keeping with the Downtown. He asked that the applicant use materials used for real craftsman or cottage homes without using newer techniques; discouraging the

use of fake rock, stackable rock, or cement rock that are found in new developments. Commissioner Olson generally agreed with Commissioner O'Connor's comments.

Commissioner Narum requested that more articulation be provided on the sides of lots 1 and 14 facing Stanley Boulevard. Commissioner Narum suggested that the applicant consider incorporating more details into the homes, similar to the home on Peters Avenue, near St. John Street (referred to as Kimberly Commons). Commissioners Pearce and Blank agreed.

Work Session Public Comments

The work session also provided the public with an opportunity to review and comment on the proposed plan. Christine Bourg, member of the Pleasanton Heritage Association, requested that the existing residence facing Stanley Boulevard be retained and restored so that there would be a heritage home on the south side of Stanley Boulevard. She felt that retaining the home would create great frontage for the new homes. She agreed with the Commission that the new homes should be designed to look more like a craftsman style or have some of the characteristics of the "100-year-old Victorian home on the front of the lot."

Michael Swift, property owner on the east side of the subject site, stated his support for the project and requested that a wall be constructed instead of a fence along the shared property line.

Staff has included the November 28, 2012, Planning Commission meeting minute excerpts as Exhibit C for reference and additional information on the site's history can be found in the "Background" section of the November 28, 2012, Planning Commission work session staff report (Exhibit D).

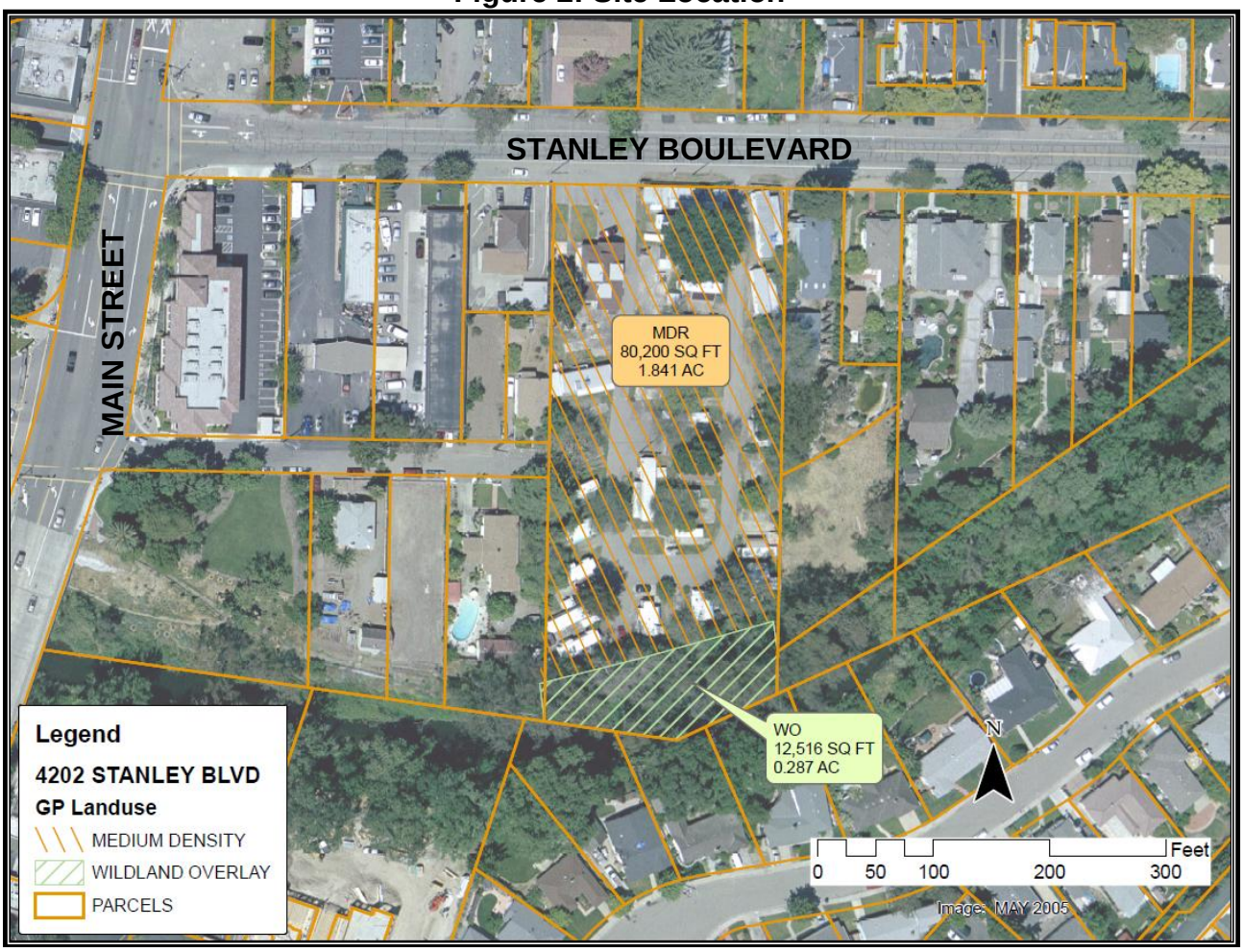
Based on the feedback received at the November 28, 2012, Planning Commission work session, the applicant made revisions to the plans to address the Commissions comments. The application being presented to the Planning Commission is for a formal recommendation to the City Council for review and final decision.

SITE DESCRIPTION

The subject site is approximately 2.1-acres (80,200 square-feet) in size and is located on the south side of Stanley Boulevard. The lot is relatively flat with the exception of the rear portion of the rear lot, approximately 12,516 square-feet (0.287-acres), which has a moderate to steep downward terrain into the Arroyo del Valle. The Arroyo del Valle portion has a General Plan Land Use designation of Public Health and Safety with Wildland Overlay and, therefore, is undevelopable. Please refer to Figure 2 on page 6.

Please refer to the next page for Figure 2

Figure 2: Site Location



The site contains 32 mobile home spaces, with several of the spaces containing mobile homes, and/or hook-ups, a caretaker's home (facing Stanley Boulevard) that was converted to a duplex and two accessory structures; one is used for storage and the other contains the laundry facility and an illegal unit. There are 39 trees on-site, the majority of which border the property, with 18 of them being heritage trees.

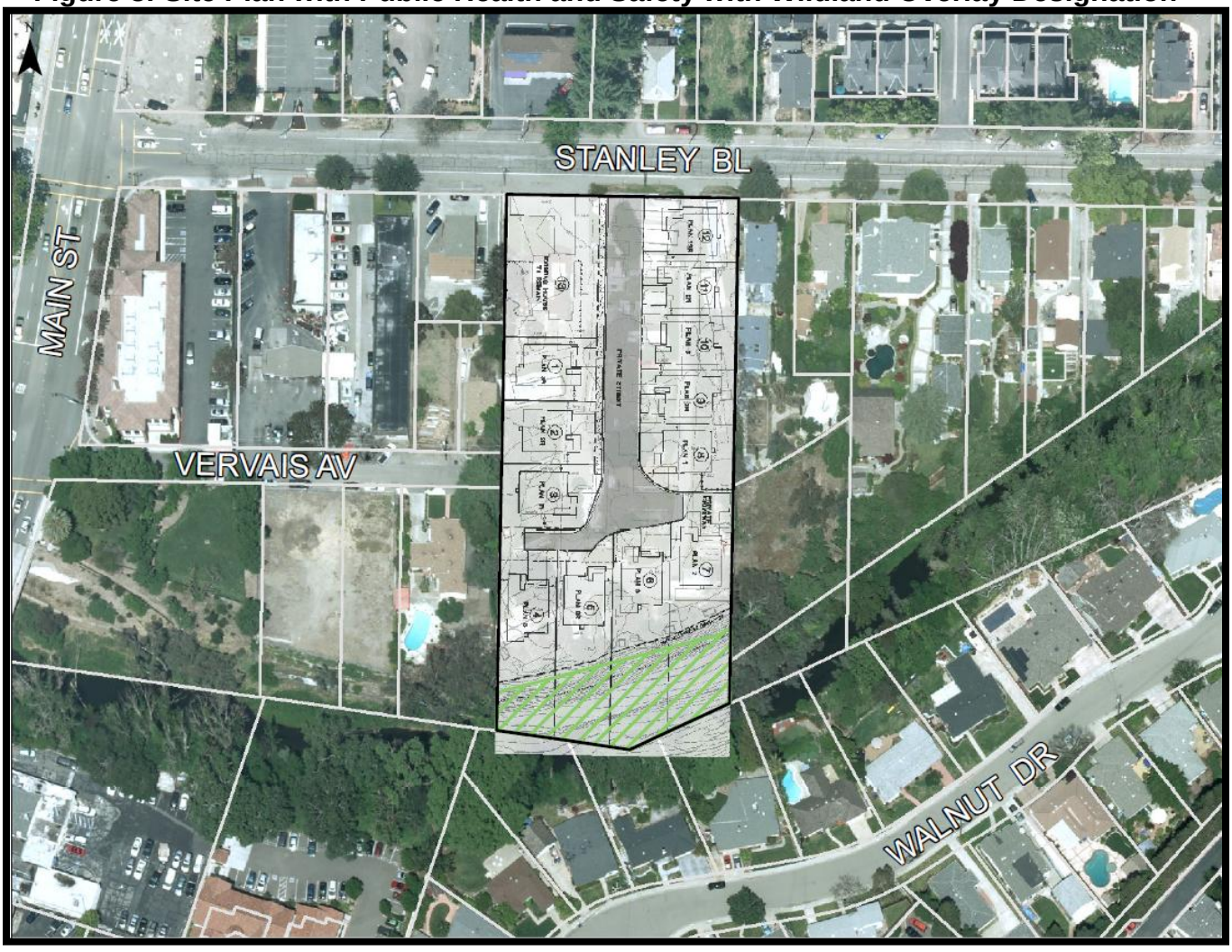
The property is bordered on the east by a single-family home and vacant lot, the south by single-family homes, and the west by a chiropractor's office and single-family homes. The recently approved 13-lot, single-family home development (located at 4171 Stanley Boulevard) and Window-ology are located directly north of the subject site, on the other side of Stanley Boulevard.

PROPOSAL

The proposed rezoning from the present C-F (Freeway Interchange Commercial) District to the PUD-MDR/OS-PH & WO (Planned Unit Development – Medium Density Residential/Open Space – Public Health and Wildland Overlay) District will make the zoning consistent with the General Plan and Downtown Specific Plan Land Use Designations as well as applying the PUD designation to the site to accommodate the proposed development plan.

The image below, Figure 3, reflects Ponderosa's proposal to retain the existing home facing Stanley Boulevard, demolish two existing structures (i.e., washroom structure with unit and storage accessory structure), remove the 32 mobile home spaces, and remove 29 of the 39 trees on-site, 18 of which are heritage-sized trees, 12 of the 18 having a rating of three, four or five out of five rating, to accommodate their proposal for a single-family home development. The conceptual proposal includes retaining the existing residence (lot 13 on the site plan in Figure 3 below) and constructing 12 single-family homes over the approximately 1.84 northern acres of the property, not to extend beyond the property's Public Health and Safety with Wildland Overlay designation, as shown on Figure 3 below. The proposal would result in a density of 7.1 dwelling units per acre. A new private cul-de-sac street with on-street parking off Stanley Boulevard would provide access to the new lots. There is no proposal to alter the rear portion of the lot that is designated as Public Health and Safety with Wildland Overlay or the Arroyo del Valle.

Figure 3: Site Plan with Public Health and Safety with Wildland Overlay Designation



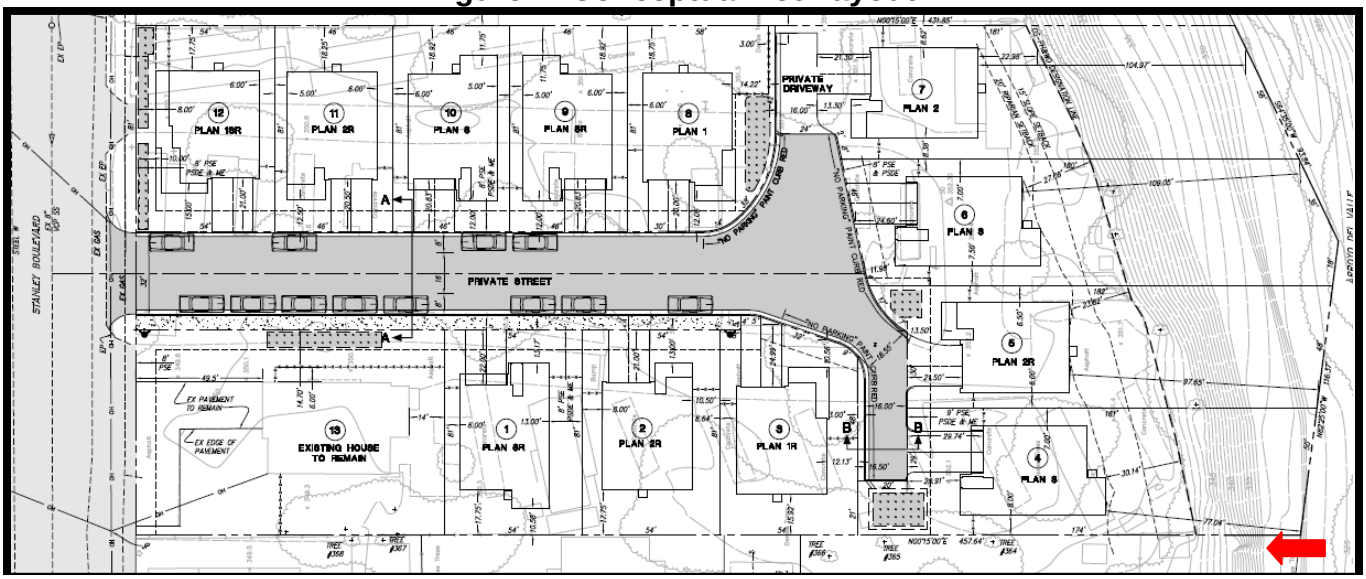
Density: The development plan reduced the proposed density from 14 to 13 detached single-family homes; this includes retaining the existing residence (referenced as lot 13 on the site

plans in Exhibit B). The two previously proposed buildable lots along the west side of the property were removed and "replaced" with lot 13.

Building Design Lot Standards: Ponderosa is proposing "Craftsman" and "Cottage" architecture designs that have three proposed house plan types that will be mixed throughout the development for lots 1-11; however, given the high visibility from Stanley Boulevard, Lot 12's design, referred to as Plan 1SR, has a wraparound porch whereas the other Plans have entry porches. The three house models will range in floor area from 2,182 square feet to 2,624 square feet. All models are two-stories tall, would vary in building height depending on the elevation and building type, and contain two garage parking spaces with driveways that range in length from 20-feet, 6-inches to 29-feet, 8-inches. Ponderosa is proposing six facades, three "Cottage" and three "Craftsman," that all incorporate brown earthtone colors. Please refer to Exhibit B – sheets 1.3-1.5, 1.7, 2.3-2.5, and 3.3-3.5, for the elevation drawings.

Plan 1 and Plan 2 will have three bedrooms, with the option of converting the den into a fourth bedroom and Plan 3 has three bedrooms, with the option of converting the den and bonus rooms into fourth and/or fifth bedrooms. Please refer to Figure 4 below for the Plan designation and corresponding lot.

Figure 4: Conceptual Lot Layout



Note: Figure 4 can be found on page 2 of 7 in the attached development plans (Exhibit B)

Table 1, located on page 9, lists the lot sizes, house model proposed on each lot, the house size, and proposed development standards (i.e., setbacks, height, and floor area ratio). Each Plan is proposed as two-story with two-car garages and, with the exception of lots 3, 8, and 12, each lot will have the option of having an architectural style of either "Craftsman" or "Cottage." Lots 3, 8, 12 are proposed as utilizing Plan 1, with lot 12 including a wraparound porch.

Table 1: Lot Specific Standards

LOT	GROSS LOT SIZE (1)	NET LOT SIZE (2)	HOUSE MODEL (3)	HOUSE MODEL MAX HEIGHT (4)	HOUSE SIZE (5)	FAR (6)	MIN FRONT SETBACK (PORCH/ HOUSE/DWY)	MIN REAR SETBACK	MIN SIDE SETBACK
1	4,360	4,360	PLAN 2 OR 3	32'	2,226-2,624	51 OR 60%	5'/11'/20'	10'	5'
2	4,360	4,360	PLAN 2 OR 3	32'	2,226-2,624	51 OR 60%	5'/11'/20'	10'	5'
3	4,358	4,358	PLAN 1	32'	2,261	52%	5'/11'/20'	10'	5'
4	8,330	5,821	PLAN 2 OR 3	32'	2,226-2,624	38 OR 45%	5'/11'/20'	10'	5'
5	8,046	4,750	PLAN 2 OR 3	32'	2,226-2,624	47 OR 55%	5'/11'/20'	10'	5'
6	9,136	4,931	PLAN 2 OR 3	32'	2,226-2,624	45 OR 53%	5'/11'/20'	10'	5'
7	9,898	5,599	PLAN 2 OR 3	32'	2,226-2,624	40 OR 47%	5'/11'/20'	10'	5'
8	4,450	4,450	PLAN 1	32'	2,261	51%	5'/11'/20'	10'	5'
9	3,715	3,715	PLAN 2 OR 3	32'	2,226-2,624	60 OR 71%	5'/11'/20'	10'	5'
10	3,715	3,715	PLAN 2 OR 3	32'	2,226-2,624	60 OR 71%	5'/11'/20'	10'	5'
11	3,755	3,755	PLAN 2 OR 3	32'	2,226-2,624	60 OR 70%	5'/11'/20'	10'	5'
12	4,401	4,401	PLAN 1S	32'	2,182	50%	5'/11'/20'	10'	5'
13	9,878	9,878	EXISTING HOUSE	N/A	< 2,000	< 20%	10'/49'/49'	14'	N/A

1) The gross lot size includes the area within the Open Space, Public Health and Safety, and Wildland Overlay area.
2) Net lot sizes do not include areas with the Open Space, Public Health and Safety, and Wildland Overlay area.
3) FAR is calculated using net lot area.

The maximum height listed in Table 1 (above) reflects the "PUD Lot Specifications Summary" shown on the site plan in Exhibit B, which is higher than what is shown on the elevation drawings in Exhibit B. The following heights, measured from finished grade to the highest point, for the homes are as follows:

Plan 1
Craftsman Design – 26'1"
Cottage Design – 29'8"

Plan 2
Craftsman Design – 25'9"
Cottage Design – 29'8"

Plan 3
Craftsman Design – 27'9"
Cottage Design – 30'8"

Table 2, found on page 10, reflects the proposed development standards for accessory structures.

Please refer to the next page for Table 2

Table 2: Accessory Structure Standards

LOTS	MINIMUM SETBACK
1-3, 8-12	5' MIN. TO SIDE AND REAR PROPERTY LINES WITH THE EXCEPTION THAT CORNER LOTS SHALL HAVE A MIN. 10' SETBACK FROM THE STREET SIDE YARD PROPERTY LINE
4-7	5' MIN. TO SIDE PROPERTY LINE MAX. 10' PROJECTION FROM REAR BLDG WALL. NO ENROACHMENT WITHIN 20' OF THE SLOPE SETBACK LINE OR WITHIN 30' OF THE CENTER LINE OF THE CREEK, WHICHEVER IS GREATER
1-12	POOLS NOT ALLOWED

Accessory structures will not be allowed to exceed 50% of the rear or side yard area or be allowed to exceed 10-feet in height and covered patios attached to the dwelling, if desired by future owners, will be required to adhere to the following development standards:

Attached Patio Covers: Covered patios attached to a main structure and open on three sides may come to within five feet of the rear property line and three feet from the interior side property lines of the property. Corner lots shall be required to maintain a 10-foot minimum setback from the street side yard property line. For Lots 4-7, covered patios shall not encroach into the 20-foot slope setback or be allowed within 30-feet from the center line of the creek, whichever is greater. Covered patios attached to a main structure and enclosed on two or more sides shall not be allowed on Lots 1-12.

Staff notes that Table 2 does not address accessory structure standards for the existing home that faces Stanley Boulevard (lot 13). Therefore, the applicant and staff have developed the following proposed accessory structure standards for lot 13.

Lot 13 Accessory Structure Standards

Proposed accessory structures that are taller than six feet in height or greater than 80 square-feet in size, shall be located between the house and west side property line only. The accessory structure may come no closer than three feet to the side property line and five feet to the rear property line and shall not exceed a height of 10-feet.

Accessory structures that are six feet or less in height, screened by the good-neighbor solid redwood fence and less than 80 square-feet in area shall be setback a minimum of 10-feet from the street side yard but may adjoin the west side property line and/or rear yard property line but may not be attached to the fence.

Accessory structures shall not exceed 50% of the rear or side yard area.

Covered patios attached to a main structure and open on three sides may come to within five feet of the rear property line, three feet from the west side property line and 10-feet from the street side property line. Covered patios attached to a main structure and enclosed on two or more sides shall not be allowed.

Staff has added conditions of approval to reflect the development standards outlined above.

Open Space and Amenities: In order to retain the existing home that faces Stanley Boulevard and provide more separation between the new lots, Ponderosa reconfigured the layout and removed the private, gated landscaped pedestrian walkway, previously proposed on the west side of the development, and the small open space area, previously proposed on the east side of the development. Please refer to Figure 1 on page 2 for the location of the previously proposed pedestrian pathway and open space. Given the natural constraints of the subject site (i.e., steep-slope towards the Arroyo Del Valle), retaining the existing home, and providing more separation between the new homes, there was no feasible area for an open space amenity. In regards to the pedestrian walkway, the applicant will be required to install a pedestrian walkway within the development that would provide access to Vervais Avenue and the Arroyo Green at Main, located on the south side of Vervais Avenue. The Arroyo Green at Main is an undeveloped park and is one of the eight park sites in the Master Plan for the Downtown Parks and Trails System (MPDPTS). The MPDPTS recommends the development of Arroyo Green at Main into a park suitable for a variety of uses (e.g., access to the Arroyo, picnic areas, etc.). Staff notes that it is unknown when the park will be developed, but the installation of the pedestrian walkway will provide residents with direct access to this public amenity once the park is developed. Please refer to the "Climate Action Plan" section (page 27 of this report) regarding the intent to incorporate the pedestrian walkway in the project.

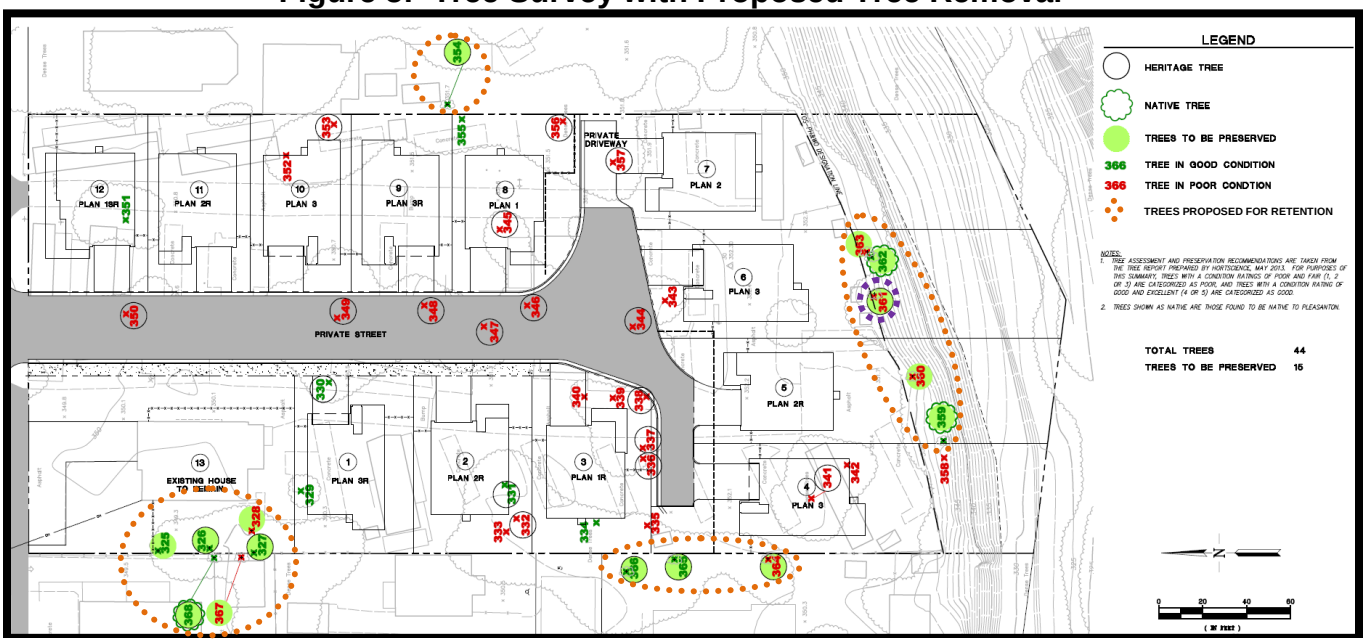
The Community Trails Master Plan, the Pleasanton Pedestrian and Bicycle Master Plan, and the Master Plan for the Downtown Parks and Trails System recommend installing a public trail along the rear of the subject property, near the creek. The applicant will be dedicating an easement to the City along the rear of the subject site, near the creek along lots 4-7, for the potential public trail that the City would construct on the southernmost portion of the property. With the easement for the City's potential trail along the Arroyo del Valle and retention of the caretaker's house, the applicant will be providing public amenities in-lieu of a traditional open space area.

Private Street: A 32-foot wide (curb-to-curb) private street will provide access to the development from Stanley Boulevard. The private street will have one internal sidewalk along a portion of lot 3 and continuing to the northern end of lot 13, ending at Stanley Boulevard. There are 12 on-street guest parking spaces proposed and no parking will be allowed on the southern end of the street to ensure appropriate fire turnaround clearance.

Homeowners/Maintenance Association: The proposed development plan shows a private street with 12 on-street parking spaces; a public trail amenity easement will be granted to the City along the rear portion on four of the private lots (lots 4-7) for a possible future trail along the Arroyo del Valle. The maintenance of these areas will be handled through a Homeowners or Maintenance Association. The applicant prefers a Maintenance Association for the development's private street with guest parking areas, common utilities, etc. since there will not be a traditional common/shared space which is typically maintained through a Homeowners Association. Staff has included a condition that the applicant will be required to indicate what type of association will be established, subject to the approval of the Director of Community Development, prior to submitting a Vesting Tentative Subdivision Map to the Planning Division. No matter the type of association established, the homeowners will maintain their private lots including homes, yards, and driveways.

Existing Trees: The applicant is proposing to remove 29 of the 39 trees on-site, 18 of which are heritage-sized trees (as defined by the Municipal Code) to accommodate the proposed development. Of the 18 heritage-sized trees, 12 have a rating of three, four or five out of five. The tree report is attached as Exhibit E for the Commissions consideration. Please refer to Figure 5 below for the location of the trees to be removed.

Figure 5: Tree Survey with Proposed Tree Removal



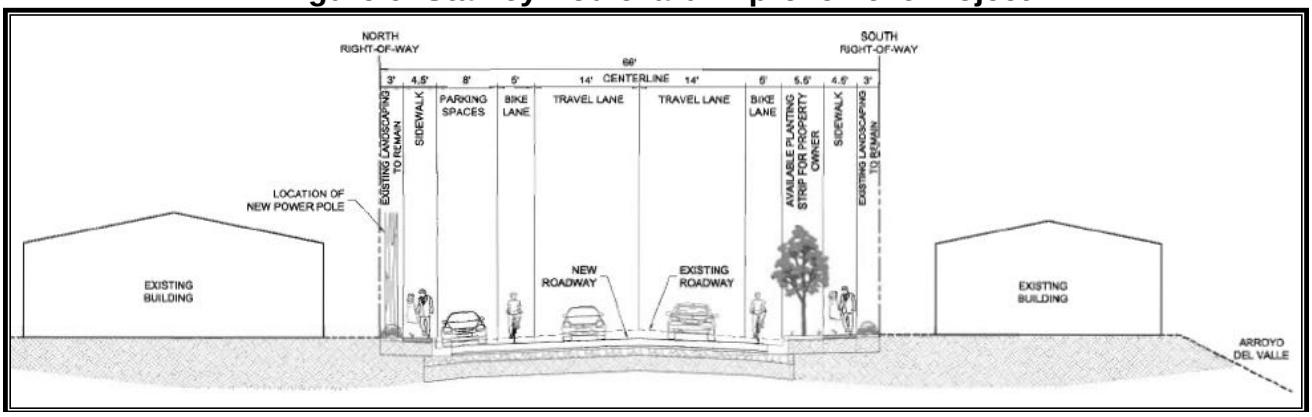
Green Building: As required by the City's Green Building Ordinance, the proposed project is required to qualify for at least 50 points on BuildItGreen's GreenPoint Rated Single-Family Checklist. The applicant has proposed to incorporate green building measures into the project that allow each home to qualify for 87 points. Staff has included the Single-Family GreenPoint checklists in Exhibit F for the Commission's consideration.

STANLEY BOULEVARD IMPROVEMENT PROJECT

As one of the Capital Improvement Projects (CIP) approved by the City Council, the Stanley Boulevard widening project is scheduled to begin in the Spring of 2016. It would include eliminating the on-street parking to allow for a bike lane, landscaping strip, and sidewalk in front of the subject property (see Figure 6 on page 13).

Please refer to the next page for Figure 6

Figure 6: Stanley Boulevard Improvement Project



Ponderosa may choose to construct frontage improvements prior to the Stanley Boulevard improvements. Should that occur, Ponderosa will be required to pay a pro-rata share of the City's CIP to reconstruct Stanley Boulevard along the project frontage. Reconstruction would only be required if Ponderosa's improvements gave the appearance of piecemealing - not having a continuous tie-in with Stanley Boulevard. If it can be demonstrated to the satisfaction of the City Engineer at the time Stanley Boulevard CIP project is completed that the street improvements that Ponderosa constructed as a part of the project are consistent in appearance and quality with the balance of the CIP project, the pro-rata share will be adjusted.

ANALYSIS

Land Use

General Plan and Downtown Specific Plan

The proposed density complies with the site's General Plan and Downtown Specific Plan Land Use Designation of Medium Density Residential which requires projects to have densities of 2 to 8 dwelling units per acre. The General Plan requires Medium Density Residential designated properties to provide public amenities, such as the dedication of parkland or open space, beyond the standard City requirements in order to exceed the midpoint density (5 du/ac) of this land use designation. Ponderosa is not proposing amenities for the subject site; however, they would be dedicating an easement to the City along the rear of lots 4-7 that would provide public access to a future trail along the Arroyo del Valle. Staff notes that it is unknown when the trail will be developed, if at all.

The undevelopable southern portion of the property (please refer to Figure 2 on page 6) would retain its Public Health and Safety with Wildland Overlay designation and the area would not be modified.

As described on pages 14 and 15, the proposal will further the General Plan Land Use Element and Housing Element, and Downtown Specific Plan goals, policies, and/or programs.

General Plan - Land Use Element

Sustainability

Program 2.1: Reduce the need for vehicular traffic by locating employment, residential, and service activities close together, and plan development so it is easily accessible by transit, bicycle, and on foot.

Program 2.3: Require transit-compatible development near BART stations, along transportation corridors, in business parks and the Downtown, and at other activity centers, where feasible.

Overall Community Development

Policy 4: Allow development consistent with the General Plan Land Use Map.

Special Interest Areas

Policy 7: Continue to implement adopted specific plans along with relevant rezoning.

Residential

Policy 9: Develop new housing in infill and peripheral areas which are adjacent to existing residential development, near transportation hubs or local-serving commercial areas.

Policy 10: Provide flexibility in residential development standards and housing type consistent with the desired community character.

Program 10.1: Use planned unit development (PUD) zoning for residential properties that have unique characteristics or to accommodate development that does not fit under standard zoning classifications.

General Plan - Housing Element

Goal 1: Attain a variety of housing sizes, types, densities, designs, and prices which meet the existing and projected needs of all economic segments of the community.

Policy 33: Encourage the preservation of historically and architecturally significant residential structures citywide including in the Downtown area, pursuant to the General Plan and the Downtown Specific Plan.

Goal 14: Provide adequate locations for housing of all types and in sufficient quantities to meet Pleasanton's housing needs.

Policy 36: Strongly encourage residential infill in areas where public facilities are or can be made to be adequate to support such development.

Program 36.1: Maintain existing zoning of infill sites at densities compatible with infrastructure capacity and General Plan Map designations.

Downtown Specific Plan

Land Use

Goal: Preserve the character and development traditions of the Downtown while improving upon its commercial and residential viability.

Objective 1: Retain the small-town scale and physical character of the Downtown through the implementation of appropriate land use and development standards.

Objective 7: Ensure that future land use development areas do not negatively impact the Arroyo del Valle as a riparian habitat resource.

Zoning and Uses

The proposed project would change the zoning from C-F (Freeway Interchange Commercial) District to PUD-MDR/OS-PH & WO (Planned Unit Development – Medium Density Residential/Open Space – Public Health and Wildland Overlay) District. The rezoning would permit and conditionally permit those uses listed in the Section 18.32.030 and 18.32.040 of the PMC, which include, but are not limited to, one-family dwellings, household pets, and small family daycare homes as permitted uses and charitable institutions, religious institutions, rabbits or fowl, and large family daycare homes as conditionally permitted uses.

Site Plan

A PUD development plan allows flexibility in applying Municipal Code Standards in order to achieve a better overall plan for the site and the area. The current site plan was developed through input from the Planning Commission and residents during the work session and several discussions with staff and the applicant after formally submitting the PUD application. Staff worked with the applicant to position the homes to provide adequate setbacks from the property lines, street frontages, and in order to maximize the usability of the site. The applicant has responded to the Commission's and staff's requests by increasing the side yard setbacks between the homes, repositioning the lots towards the rear of the site, and retaining the existing caretaker's home. Staff finds the proposed setbacks to be acceptable and similar to other small-lot PUD developments that the City has approved, some of which are located in the Downtown.

A Downtown Specific Plan Design Policy indicates that the established size and spacing of buildings in residential neighborhoods should be protected by avoiding excessive lot coverage and maintaining appropriate separations between buildings. The property is surrounded by residential uses, offices and commercial buildings. Since all of these buildings vary in size, shape, and setbacks, staff did not find an established size or spacing of buildings to use and believes the project should be reviewed on its own merit.

Staff believes that the proposed siting, massing, and size of the units are appropriate for this site and would result in an attractive development for this area of Stanley Boulevard. The homes would be in keeping with the scale and massing of the homes on Stanley Boulevard.

Retaining the Existing Home

The existing home, located on the northern portion of the property facing Stanley Boulevard, was not included in the Historic Neighborhoods and Structures table of the General Plan nor was it included in the Downtown Historic Resource List and Map that was created for the 2002 update of the Downtown Specific Plan to identify individual properties and neighborhoods that contain outstanding examples of heritage structures. The project site is also not located in one of the five Heritage Neighborhoods that are identified in the Downtown Specific Plan.

While the property is not specifically listed in the General Plan or Downtown Specific Plan as an historic resource, the General Plan, Downtown Specific Plan, and Downtown Design Guidelines contain policies regarding the City's preservation goals. The General Plan has a policy which states:

> *Preserve and rehabilitate those cultural and historic resources which are significant to Pleasanton because of their age, appearance, or history.*

The Downtown Specific Plan has policies that state:

> *Require the completion of the State of California Department of Parks and Recreation (DPR) Survey Form-523 to develop and document a statement of historic significance prior to the issuance of demolition permits for any historic resource older than 50 years. Evaluate these properties using the State of California criteria for the California Register of Historic Resources.*

> *Prohibit the demolition of any building found to be historically significant with regard to the California Register criteria unless such building is determined by the Chief Building Official to be unsafe or dangerous, and if no other reasonable means of rehabilitation or relocation can be achieved.*

AND

> *Future residential development should generally provide for the preservation and rehabilitation of existing on-site frontage homes which exceed 50 years in age or which otherwise substantially contribute to the "small town" character of the neighborhood in terms of architecture and scale. Exceptions may be permitted to: (1) relocate such homes to other appropriate Downtown locations for permanent preservation and rehabilitation; or (2) demolish and replace such homes which are specifically found by the City to demonstrate minimal redeeming historic and/or architectural significance.*

The Downtown Design Guidelines indicate that demolition of buildings over 50 years of age is generally discouraged and that remodeling is encouraged over replacement.

In order to determine the historic significance of the structure, the structure was analyzed and a DPR survey was prepared by Ward Hill, Consulting Architectural Historian (Exhibit G), who specializes in historic research, historic architecture, and historic preservation. In order to be considered eligible for listing in the California Register, the structure must meet one or more of the following California Register criteria:

1. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

2. It is associated with the lives of persons important to local, California, or national history.

3. It embodies the distinctive characteristics of a time period, region, or method of construction, or represents the work of a master, or possesses high artistic values.

4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, state or the nation.

As described in the study, Mr. Hill found the structure does not meet any of the criteria listed above and the structure is not eligible for listing in either the California Register of Historical Resources or the National Register of Historic Places.

In 2011, the City Council appointed a seven member committee, comprised of two Planning Commission members and five members of the public, who were tasked with re-evaluating the City's Downtown Historic Preservation policies, guidelines, and process. This committee is referred to as the Historic Preservation Task Force. The Task Force has the following objectives:

- Create a definition for teardown verses remodel.

- Evaluate historic neighborhoods.

- Ensure consistency with the General Plan, Downtown Specific Plan, and Downtown Historic Resource List and Map.

In September 2012, the Task Force developed a Draft Pleasanton Downtown Historic Context Statement (PDHCS). The PDHCS document is intended to bring a greater level of consistency to the city's historic preservation efforts and would establish criteria for determining the historical significance of properties in the downtown area which would assist decision makers in considering what is important to preserve or restore. The PDHCS describes several themes important to the historic development of Pleasanton. The Context Statement provides a framework for evaluation potential historic resources in Pleasanton.

Although the Historic Architecture Evaluation Report states that the existing house does not meet the criteria of a historic resource or place, the applicant is aware that the work of the Task Force is still on-going and, therefore, the applicant is proposing to retain the two-story, two-unit residential building, located on the northern portion of the property. Ponderosa is not proposing any façade improvements (e.g., paint, roof, etc.) for the existing house. Ponderosa is proposing site improvements that consist of a new 6-foot tall wood fence and landscape (i.e., trees, shrubs and groundcover) along the eastern side yard and a portion of the front yard where asphalt currently exists. The Planning Commission may want to consider a dialogue with the applicant regarding their willingness, if any, for additional improvements (e.g., paint, reroof, carport/garage, etc.).

Cultural Resources

At the applicant's request, Basin Research and Associates prepared a Cultural Resources Review of the subject property and house. Dr. Colin Busby, the Report's author, found no archaeological resources in or adjacent to the proposed project site. Furthermore, the house is not designated or determined for any state, local or federal historic resource listing. Dr. Busby noted that no subsurface testing for buried archaeological resources was conducted and that if any unanticipated prehistoric or significant historic cultural material, as defined in the Report, are exposed during construction grading and/or exaction, operations should stop within 25-feet of the find and a qualified professional archaeologist contacted for evaluation and further recommendations. Staff has added a condition of approval to reflect this recommendation. The Cultural Resources Review Report is attached as Exhibit H for reference.

Traffic and Circulation

The Pleasanton General Plan exempts the Downtown Specific Plan area from the Citywide Level of Service (LOS) D standards although improvements at downtown intersections may occur where necessary and when consistent with the character of the downtown. Downtown Specific Plan streets and intersections were built prior to modern road standards and lack the necessary right-of-way for major roadway improvements. Furthermore, removing on-street parking, adding additional travel lanes, and reducing sidewalk width – the types of traffic improvements that are typically required – would be inconsistent with the desired pedestrian character for the Downtown.

The proposed project is considered a small-scale project located in the Downtown, and, for these reasons, does not require a traffic study. The residential use and proposed site layout are not anticipated to create any unique traffic or circulation circumstances. The applicant would be required to pay the City and Tri-Valley traffic fees as part of the project.

The applicant will pay the proposed development's pro-rata share of the City's planned Stanley Boulevard reconstruction to modify and improve Stanley Boulevard that will improve vehicular, pedestrian, and bicycle circulation on this section of Stanley Boulevard between Main Street and Stanley Boulevard. Vehicular access to the development will only be provided from the single private street off Stanley Boulevard, which is preferred from a traffic safety and flow standpoint.

Therefore, the reduced density project combined with the Stanley Boulevard reconstruction will result in a proposed development that will be consistent with the City's traffic safety and accessibility standards.

Parking
As part of the Stanley Boulevard reconstruction project, a paved parallel parking lane will be provided on the north side of Stanley Boulevard with no parking allowed on the south side of Stanley Boulevard. Two garage parking spaces will be provided per new unit. The proposed parking ratio for the revised development plan with 12 new units, a total of 24 garage parking spaces, and 12 on-street guest parking spaces will equal three parking spaces per new unit. The residential driveways will be at least 21-feet long and able to accommodate parked vehicles with the garage door in a closed position. Adding each unit's driveway apron parking will increase the assigned and guest parking to a total of 60 parking spaces or five parking spaces per unit with each unit having four "assigned" parking spaces in the unit's garage and driveway apron.

As conditioned, the garages will not be allowed to be modified by the residents or used for storage in a manner that interferes with the ability to park two cars within the garage; residents will be required to park their vehicles in the garages; and driveways shall remain free of boats, trailers, campers, etc., to provide additional parking for guests and any additional vehicles owned by the residents. A condition of approval requires that these parking restrictions shall be recorded as restrictive covenants that will "run with the land" and, therefore, shall be binding on all future property owners.

Grading
The subject property generally has flat terrain, with the exception of the steeply-sloped portion at the rear of the property. Grading for the proposed project would be limited to that required for preparation of the building pads and foundations, streets, and utilities. Staff finds the proposed grading to be minor and acceptable. The Preliminary Geotechnical Investigation report with addendum and the Riparian Survey report provide recommendations for grading and related site improvements for the rear lots (4-7) due to their proximity to the Arroyo del Valle and steeply-sloped portions of the lot. A condition of approval requires the applicant to adhere to the recommendations in the two reports. Staff has included the Preliminary Geotechnical Report as Exhibit I and the Riparian Survey Report as Exhibit J.

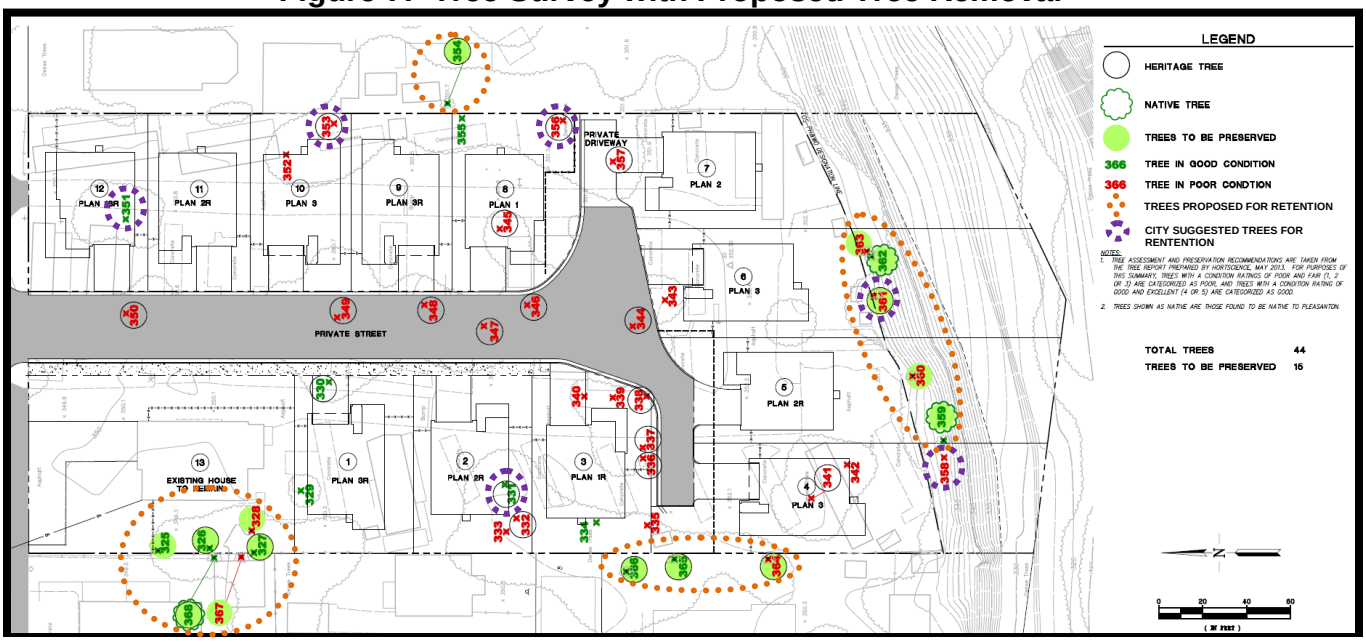
Drainage
In order to reduce stormwater runoff and polluntatns form the site, drainage from the roofs and lot surface drainage would be conveyed to and treated by vegetated swales. The landscaped treatment areas/swales are located on the east side of lot 13, south side of lot 8, and the north side of lot 4.

Utilities
Water, storm drain, and sanitary sewer lines would be private and extended from existing City mains in Stanley Boulevard up the private street to serve the new homes. All new on-site utilities to serve the proposed development (i.e., power, phone, cable TV, etc.) will be installed underground in joint utility trenches.

Tree Removal

The applicant is proposing to remove 29 of the 39 trees on-site, 18 of which are heritage-sized trees (as defined by the Municipal Code) to accommodate the proposed development. Of the 18 heritage-sized trees, 12 have a rating of three, four or five out of five. Please refer to Figure 7 (below) for the location of the trees to be removed.

Figure 7: Tree Survey with Proposed Tree Removal



The City's Landscape Architect, Mike Fulford, reviewed the tree report for the proposed development (Exhibit E) and conducted a site visit to the subject property to confirm the observations/summary that was prepared by HortScience. Mr. Fulford agrees with the estimated value of the trees, the health observations and other conclusions regarding the on-site trees. As indicated in the tree report, many of the trees are 'not suitable for preservation' based on the fact that they are located in areas that are proposed for development (i.e., building envelopes, roadway, etc.). Mr. Fulford noted that many of the trees that are 'not suitable for preservation' that are proposed for removal are "excellent specimens" and if the site plan were to be re-worked the trees could/should be retained. These trees include:

- Modesto Ash tree #351 (referred to as #251 [as a typo] on page 2 of the Report)
- Canary Island date palm #331
- Modesto Ash trees #353, 356 and 361
- Tree of Heaven # 358

The trees referenced above are circled in purple in Figure 7 (above). If the applicant were interested in rearranging the lot layout, the trees noted above could be saved.

Mr. Fulford believes that all of the trees located along the steeply-sloped creek bank should be retained. He also noted that the large Paradox walnut, located on the adjacent property to the east (tree #354), is an unusual and "magnificent" specimen and will require significant pruning in order to accommodate the proposed development and due to the sensitive nature of this species, its survival is questionable. The tree has an appraised value of $12,700 and Mr. Fulford would like the Tree Preservation Guidelines presented in the Report to be followed meticulously.

Ponderosa will be required to remit the full appraised value of all trees to be removed, similar with other development projects they have constructed in Pleasanton, and a bond, or other financial security acceptable to the City, will be required for no less than two years after project completion to ensure the survival of the trees to be preserved (both on- on off-site). A condition of approval has been added to reflect these requirements.

Noise and Vibration

External noise sources that could affect the site include noise from the railroad to the north and traffic on Stanley Boulevard, also to the north. For single-family housing projects, the City's General Plan requires that private yard areas excluding front yards not exceed 60 day/night average decibels (dB Ldn) and that indoor noise levels not exceed 45 dB Ldn. In addition, if the noise source is a railroad, an exterior noise level up to 70 dB Ldn is allowed and indoor noise levels cannot exceed a maximum instantaneous noise level (Lmax) of 50 dB in bedrooms and 55 dB in other rooms. Please refer to Exhibit K for the noise analyses, with addendum, that were prepared for the proposal.

In order to meet the General Plan noise standards, the noise study required the following mitigation measures:

- Install a 6-foot tall acoustically effective barrier along the rear and portion of the street side yard of Lot 12. The applicant proposes a 6-foot tall wood sound fence at these locations.

- Install windows and exterior doors per the Sound Transmission Class (STC) ratings of 28 to 42 depending on lot, floor level, and occupancy of the room/area shown in Table III on page 7 of the Noise Assessment Report (Exhibit K).

- The homes would need to be provided with forced air mechanical ventilation (i.e., air conditioning) so that windows and doors may be closed at the discretion of the occupants to control noise.

A condition of approval requires that the applicant comply with the recommendations of the noise study. Staff notes that the above mitigations address train engine/wheel noise but exclude mitigation for train horns, which may require mitigations that are infeasible and/or unacceptable from a design and neighborhood impact standpoint (e.g., tall sound walls). The General Plan indicates the City Council will evaluate the requirement to achieve the General Plan noise standards in the Downtown on a case-by-case basis. A condition of approval is included that requires disclosure of frequent train whistle noise.

Noise Impacts on Adjacent Properties

The development of residential uses on the property will generate added urban noise, such as traffic, landscape maintenance activities, etc. However, noise levels will not change substantially from those currently experienced in the area. Ambient noise levels could actually decrease for some of the adjacent properties due to the shielding of traffic noise by the proposed fencing and buildings.

Short-term construction noise would be generated during any new construction on this site. The City normally allows construction hours from 8:00 a.m. to 5:00 p.m., Monday through Friday, with Saturday construction allowed if nearby residents are unlikely to be impacted by construction noise or activities. Since there are existing residences directly adjacent to the proposed project site, staff is recommending that Saturday construction not be allowed. Staff is recommending a condition that would allow the Director of Community Development to approve earlier construction "start times" or later "stop times" only for specific construction activities (e.g., concrete pouring) if it can be demonstrated to the satisfaction of the Director of Community Development that the expanded construction hours are necessary (e.g., the concrete foundations need to be poured early due to weather conditions). Construction equipment would be required to meet DMV noise standards and be equipped with muffling devices.

Vibration

As required by the General Plan, the noise study is required to include an analysis of railroad-induced ground vibration. The General Plan requires that the project demonstrate that it would be compatible with the vibration impact criteria established by the Federal Transit Administration (FTA). Some of the homes may need to have spread foundation footings or post/beam foundations, resulting in a raised first floor with a "crawl" space underneath the floor, instead of slab on-grade foundations in order to meet the FTA criteria.

The foundation system design will be determined with the building permit based on the analyses provided by the applicant's consultants including the architect, soils engineer, structural engineer, and noise consultant subject to City review and approval. A raised foundation, if found to be necessary, may increase the height of the homes on these lots by 30-inches to 36-inches. The draft conditions of approval allow for flexibility should this be required.

Green Building

The proposed homes exceed 2,000 square feet; therefore, the applicant is required to comply with the City's Green Building Ordinance. The applicant has submitted a Green Building checklist that incorporates a number of green building measures into each new home. The PMC requires a minimum of 50 total points. As proposed, each home is anticipated to achieve 87 points. Please refer to Exhibit F for the Green Building checklist. The State's Green Building Standards Code (CALGreen) will also apply to the proposed development and is similar to the green building measures that the City's Green Building Ordinance currently requires.

Architecture and Design
The Downtown Specific Plan (DTSP) states that the design of new buildings should draw upon the primary exterior features of the Downtown's traditional design character in terms of architectural style and materials, colors, details of construction, height, floor area, bulk, massing, and setbacks. These elements should be consistent with those elements of buildings in the immediate neighborhood, and the design of the new buildings should not represent a significant departure from the existing neighborhood character.

The DTSP and Downtown Design Guidelines (DTDG) outline parameters related to new construction of residential structures and also provide guidance related to architectural details, materials, and windows. The DTSP and the DTDG have the following design criteria.

DTSP Design and Beautification Design Criteria (page76):

> Policy 17
> "Protect the established size and spacing of buildings in residential neighborhoods by avoiding excessive lot coverage and maintain appropriate separations between buildings."
>
> Policy 20
> "Encourage garages at the rear of lots."

DTDG Residential Guidelines for New Construction, Remodels and Additions (page 35) states:

> Siting
> "Continue the existing density and spacing of homes. Match the side yard setbacks of surrounding homes."
>
> "New homes should face the street."
>
> "Place garages in the rear of lots."
>
> Height & Mass
> "Floor area of new homes and additions to existing homes are to be compatible with surrounding houses."
>
> "Reflect the general massing of surrounding homes, including roof forms and step backs, front porches, bay windows, and balconies."
>
> Design
> "New construction, additions and remodels should reflect the architectural style and detailing of the surrounding neighborhood."

The project proposes three different plans that are all two-story homes with two elevation styles ("Craftsman" and "Cottage"). Six different color schemes generally comprised of brown earthtone colors, with other accent colors, are proposed for exterior paint, stone, siding, and roofs. Copies of the proposed color and material board for each color palette have been

included with the Commission's packet (Exhibit B). The color and material boards with the original color paint chips will be available at the hearing for the Commission's viewing.

The "Craftsman" and "Cottage" style of architecture is an acceptable style for Downtown and would be compatible with the eclectic style of homes on Stanley Boulevard and found in the Downtown. The design guidelines adopted for the Downtown (Downtown Design Guidelines) stress the use of traditional materials, finishes, colors, and detailing. Staff finds the stucco, siding, and stone wall materials, composition shingles, garage doors, porch railings, and wrought-iron and wood planter boxes to be consistent with the guidelines. Window treatments (sills and trim) meet the guidelines' suggestions for traditional details in such features. The applicant has provided architectural detailing and accent relief on the front building elevations to break up the two-story facades and provide visual relief. Staff believes that the proposed color schemes are reminiscent of typical subdivision projects that are located throughout Pleasanton. The Planning Commission may wish to discuss alternative colors for the proposed homes within this development in order to add more character which is typically found in homes located in the Downtown area.

The applicant has proposed to use quality vinyl windows. In the Downtown, staff prefers that traditional wood-framed/sashed windows be used. Staff acknowledges the cost of these windows and generally supports the use of quality fiberglass- or vinyl-framed/sashed windows provided they have a similar frame and sash thickness as found on a traditional wood-framed/sashed window. Furthermore, when simulated mullions (grids) are used, staff prefers that the mullions be raised on the exterior of the window rather than located between the glass panes. For this project, some of the windows will require high STC ratings to mitigate train noise and staff acknowledges that it may be difficult for the applicant to find windows that comply with these window requirements. Therefore, staff's recommended condition requires that the proposed vinyl windows have a similar frame and sash thickness as found on a traditional wood-frammed/sashed window and that raised exterior mullions be used unless the required noise mitigation for this project prevents compliance with this condition.

The Downtown Design Guidelines state that detached garages are preferred and should be placed at the rear of the lots. All of the homes would have attached garages located at the front of the home. Staff believes that the garages, although attached and located at the front of the homes, meet the intent of the guidelines in that they would not be highly visible from Stanley Boulevard.

Overall, staff believes that the building designs are attractive, and that the articulation, finish, and materials are appropriate for the Downtown, comply with the Downtown Design Guidelines, and would complement the existing buildings on Stanley Boulevard and other areas in the Downtown.

Floor Area Ratio (FAR)

The new lots would range in size from 3,715 square feet (lots 9 and 10) to 5,821 square feet (lot 4) (net area) and the homes would range in size from approximately 2,182 square feet to 2,624 square feet. The resulting FARs would range from 38 to 70 percent. While FARs higher than the 40% maximum are allowed for the R-1-6,500 Zoning District, which requires a

minimum lot size of 6,500 square feet, the proposed FARs are not exceptionally large when compared to FARs on similarly sized lots in recent PUD projects in the Downtown.

For comparison purposes, the table below lists the lots sizes, house sizes, and FARs of the proposed project and some other small-lot single-family developments that were approved in the Downtown. Staff notes that these represent what was approved with the PUD development plans.

Table 3: Downtown PUD Comparison Table

Project	Lot Sizes	House Sizes	FARs
PUD-97 **(Proposed Project)** 13 (1 existing and 12 new) single-family homes	Lot 13 9,878 sq. ft. New Units 3,715 to 5,821 sq. ft.	Existing House < 2,000 New Units 2,182 to 2,624 sq. ft.	Existing House <20% New Units 38% to 70%
PUD-82 **4171, 4189 Stanley Blvd** 13 single-family homes	2,603 to 3,965 sq. ft.	1,599 to 1,920 sq. ft.	49% to 67%
PUD-90-08 **201-297 Del Valle Ct** 13 units (1 existing and 6 new single-family homes; and 6 new attached single-family homes)	3,947 to 6,647 sq. ft. (excluding attached single-family homes)	Existing House 1,735 sq. ft New Detached Units 1,628 to 1,993 sq. ft.	Existing House 26% New Detached Units 33% to 48%
PUD-37 **520 St. John Street** 6 units (4 single-family homes and a 2 unit apartment)	1,960 to 2,274 sq. ft (excluding apt. unit)	1,221 sq. ft. (excluding apt. unit)	54% to 62% (excluding apt. unit)
PUD-55, **225 W. Angela St.** 5 (1 existing and 4 new) single-family homes	1,156 to 3,187 sq. ft.	Existing House 1,036 sq. ft New Detached Units 1,117 to 1,586 sq. ft.	Existing House 33% New Detached Units 75% to 97%
PUD-64 **4238 First St.** 5 (1 existing and 4 new) single-family homes	2,018 to 4,606 sq. ft.	Existing House 1,210 sq. ft New Detached Units 1,713 to 1,919 sq. ft.	Existing House 26% New Detached Units 81% to 89%
PUD-72 **4693, 4715 Augustine St** 6 (3 existing and 3 new) single-family homes	2,010 to 3,820 sq. ft.	Existing Homes 878 to 1,844 sq. ft New Detached Units 1,630 to 2,360 sq. ft	Existing Homes 29% to 53% New Detached Units 66% to 81%

Staff notes that townhomes typically do not have front or side yards included in the lot areas and typically have FARs exceeding 100%. Therefore, a comparison of the proposed project's FARs with the nearby Del Valle Manor Townhome project would not be helpful. Table 4 (below) is a comparison of the combined total FAR of the subject site (total square footage of all of the homes divided by the total developable land area of the site) and the nearby Del Valle Manor townhouse development.

Table 4: Del Valle Manor Townhome and PUD-97

Project	Lot Sizes	House Sizes	FARs
PUD-97 (Proposed Project) 13 (1 existing and 12 new) single-family homes	80,150 sq. ft. (Developable land)	28,738 to 32,320 sq. ft.	36% to 40%
PUD-85-07 Del Valle Manor Townhomes 36 townhomes	112,454 sq. ft.	49,080 sq. ft. ±	44%

Staff finds the proposed lot sizes, house sizes, and FARs to be acceptable and consistent with the pattern of approved residential developments within the Downtown.

Site Development Standards

The applicant is not proposing house additions; therefore, there are no site development standards for future additions to the homes. Should an addition, façade changes, site improvements, etc. be proposed for the existing house (lot 13) at a later date, said improvements will be subject to the development standards of the R-1-6,500 Zoning District and will be subject to review and approval by the City prior to any improvements taking place. Said review could include, but is not limited to, staff level Design Review with supplemental documentation (i.e., addendum to the DPR) for said improvements. The proposed accessory structure site development standards, discussed on pages 9 and 10 of this report, are satisfactory and similar to standards created for other small-lot developments in the City. A condition of approval has been added pertaining to rear yard improvements for lots 4-7. Grading, improvements, development, including, but not limited to, accessory structures, etc. will not be allowed within 30-feet of the center line of the creek or 20-feet from the top of bank. Given these lots proximity to the Arroyo del Valle, lot specific Geotechnical Reports will be required should future property owners' desire site improvements/changes that will alter the draining, grade, etc. of the rear lot.

Common and Private Open Space

No common open space/recreation areas are proposed. Private, individual open space would be provided in the yard areas of each lot. Being a small-scale, infill project located in the Downtown, the steep-slope of the southern portion of the project site, and given the proposed retention of the existing residence, staff does not believe it would be feasible to accommodate

a common open space/recreation area within the development. The General Plan indicates that parks should be located within one-half mile of the residential area they serve. The project site is located within one-half mile of the following: Amador Valley Community Park, Kottinger Village Community Park, Delucchi and Lions Wayside Parks, Veterans Plaza Park, and Main Street Green. Staff acknowledges that some of the above-listed parks would entail crossing an arterial to reach them, making them less desirable for day-to-day use by residents. Overall, staff is satisfied that the private yards and surrounding parks will substantially meet the residents' park and open space needs. Furthermore, the applicant will be providing an easement to the City for a future trail. The easement and trail would generally be aligned below the top of slope and along the flatter portions of the embankment, near the creek.

Landscaping and Fencing

Staff finds the proposed landscape design, densities, and species to be acceptable. The Planning Commission may want to discuss the feasibility of Ponderosa including landscaping in the front yard area of the existing caretaker's home (lot 13). A condition of approval requires the frontage landscaping be adjusted to accommodate the City's planned Stanley Boulevard street improvements.

Fencing locations and elevations have been shown on the landscaping and site plan in Exhibit B. Ponderosa has indicated that they will work with the adjacent, east side, property owner regarding an enhanced fence or masonry wall along the shared east boundary line. However, Ponderosa would like to receive final City approval regarding the number of lots and a better understanding of the associated grading, survey of boundary lines and potential encroachments onto the new rear lots (lots 7-12) prior to committing to a masonry wall along the shared property line. A condition of approval has been added to reflect any change in fencing design, material, height, location etc.

Climate Action Plan

On February 7, 2012, the City of Pleasanton adopted a Climate Action Plan (CAP). The CAP was reviewed by the Bay Area Quality Management District and was deemed a "Qualified Greenhouse Gas Reduction Strategy" in accordance with the District's CEQA guidelines. Implementation of the CAP will occur over several years and will consist of amendments to regulations and policies related to Land Use and Transportation, Energy, Solid Waste, and Water and Wastewater, which will result in reductions in greenhouse gas emissions in compliance with the targets set by AB 32 California's Global Warming Solutions Act. Staff has analyzed the consistency of this project with the CAP and is recommending several conditions of approval which address specific supporting actions included in the CAP.

Staff and the applicant met on multiple occasions to discuss changes to the plans prior to presenting a formal application to the Planning Commission. As a part of those conversations, staff initially believed that retaining the existing house that faces Stanley Boulevard and the topography of the rear of the site warranted removing the proposed pedestrian walkway to Vervais Avenue and, thus, it would not be required as a part of the CAP. However, staff has reassessed the CAP requirements and found that the pedestrian walkway is a requirement. Although the new street will be private, the Climate Action Plan requires new projects to include pedestrian and bicycle access through cul-de-sacs, therefore, the applicant will be required to install a pedestrian walkway that provides direct access to Vervais Avenue and

Arroyo Green at Main. Staff has added a recommended condition of approval that the applicant will work with staff in incorporating a pedestrian walkway within the development, likely to be located on the south side of lot 3, to Vervais Avenue. However, the applicant does not agree with staff's recommendation to add the pedestrian walkway and requests the Planning Commission discuss this requirement prior to making a formal recommendation on the project.

Additional CAP conditions include, but are not limited to, drought-resistant planting in lieu of lawns, reclaimed wastewater, and rain harvesting. Staff believes, as conditioned, the project meets the CAPs requirements for a detached, single-family, in-fill development. Staff has included the CAP checklist as Exhibit L of this report.

PUD CONSIDERATIONS

The Zoning Ordinance of the Pleasanton Municipal Code sets forth purposes of the Planned Unit Development District and "considerations" to be addressed in reviewing a PUD development plan. Staff has provided those considerations and staff's analysis below.

1. **Whether the plan is in the best interests of the public health, safety, and general welfare:**

The proposed project, as conditioned, meets all applicable City standards concerning public health, safety, and welfare. The subject development would include the installation of all required on-site utilities with connections to municipal systems in order to serve the new lots. The project will not generate volumes of traffic that cannot be accommodated by the existing City streets and intersections in the area. The structures would be designed to meet the requirements of the Uniform Building Code, Fire Code, and other applicable City codes. The proposed development is compatible with the adjacent sites and uses and would be consistent with the existing scale and character of the area. Adequate setbacks would be provided between the new dwellings and the existing structure and adjacent properties. Additional improvements (e.g., structures, grading, fencing, etc.) are prohibited along the rear portion of lots 4-7 as required by the Preliminary Geotechnical Report in Exhibit I.

Therefore, staff believes that the proposed PUD development plan is in the best interests of the public health, safety, and general welfare, and that this finding can be made.

2. **Whether the plan is consistent with the City's General Plan and any applicable specific plan:**

The subject site's General Plan and Downtown Specific Plan Land Use Designation of "Medium Density Residential" requires projects to have densities between two to eight dwelling units per acre. The proposed detached single-family residential housing development with a density of 7.0 units per acre is consistent with the General Plan and Downtown Specific Plan land use designation for the site. The proposed project would further several General Plan Programs and Policies encouraging new housing to be developed in infill and peripheral areas which are adjacent to existing residential development, near transportation hubs, or local-serving commercial areas and for the City to attain a variety of housing sizes, types, densities,

designs, and prices which meet the existing and projected needs of all economic segments of the community.

Staff concludes that the proposed development plan is consistent with the City's General Plan and Downtown Specific Plan, and staff believes that this finding can be made.

3. Whether the plan is compatible with previously developed properties in the vicinity and the natural, topographic features of the site:

The project site is surrounded by a variety of uses: single-family homes, townhomes, offices, and personal services. As conditioned, staff believes that the proosed residential lots and homes would be compatible with the surrounding uses. The homes have been sited to minimize impacts on surrounding neighbors to the extent feasible and have been designed to reduce their mass and not overpower the site. The majority of the subject property generally has flat terrain, except for the rear steeply-sloped portion of the lot. The rear portion has a General Plan Land Use Designation of Open Space – Public Health and Wildland and will not be developed. Grading of the site will be limited to the creation of the pads for the future homes and to achieve proper drainage. The new homes are generally at the same elevation as the existing structures on the adjacent properties.

Therefore, staff believes that this finding can be made.

4. Whether grading takes into account environmental characteristics and is designed and keeping with the best engineering practices to avoid erosion, slides, or flooding to have as minimal an effect upon the environment as possible:

Graded areas have been minimized to the extent feasible to preserve the natural topography of the site. City building code requirements would ensure that building foundations, on-site driveways, and parking areas are constructed on properly prepared surfaces. The proposed development would provide adequate drainage to prevent flooding. Erosion control and dust suppression measures will be documented in the building permit plans and will be administered by the City's Building and Safety Division and Engineering Division. The site is not located within an Alquist-Priolo Earthquake Fault Zone. The flood hazard maps of the Federal Emergency Management Agency (FEMA) indicate that the subject property is not located in a flood hazard zone.

Therefore, staff believes that this finding can be made.

5. Whether streets and buildings have been designed and located to complement the natural terrain and landscape:

The project site is in a developed area of the City and would not involve the extension of any new public streets. The flat, developable portion, urban infill site has no constraints to either roads or buildings. Development of the site complements the natural terrain by making only minor changes as necessary to the site's existing, developable, relatively flat topography, The proposed buildings will be compatible in size and scale with surrounding structures and new landscaping would be installed to mitigate the loss of the existing trees.

Therefore, staff believes that this finding can be made.

6. Whether adequate public safety measures have been incorporated into the design of the plan:

As conditioned, the private street entry off Stanley Boulevard would be located and configured to provide adequate line-of-site viewing distance and to facilitate efficient ingress/egress to and from the project site. The private street is designed to provide adequate circulation for fire, police, and other emergency vehicles. The new homes would be equipped with automatic residential fire sprinklers.

Although the sites are not located within an Alquist-Priolo Earthquake Fault Zone, it would be subject to seismic shaking during an earthquake. The State of California provides minimum standards for building design through the California Building Standards Code. The California Uniform Building Code is based on the UBC and has been modified for California conditions with numerous more detailed and/or stringent regulations. Specific seismic safety requirements are set forth in Chapter 23 of the UBC. The State earthquake protection law requires that buildings be designed to resist stresses produced by lateral forces caused by earthquakes. The City implements the requirements of the California Building Code through its building permit process. The proposed project will be required to comply with the applicable codes and standards to provide earthquake resistant design to meet or exceed the current seismic requirements. A site specific soils analysis would be conducted in conjunction with the building permit review.

Therefore, staff believes that the plans have been designed to incorporate adequate public safety measures.

7. Whether the plan conforms to the purposes of the PUD district:

The proposed PUD development plan conforms to the purposes of the PUD district. One of these purposes is to insure that the desires of the developer and the community are understood and approved prior to commencement of construction. Another is to provide a mechanism whereby the City can designate parcels and areas requiring special consideration regarding the manner in which development occurs. Staff believes that the proposed project implements the purposes of the PUD ordinance in this case by providing a medium-density single-family housing project that is well-designed and sited on the subject property, that fulfills the desires of the applicant, and that meets the City's General Plan and Downtown Specific Plan goals and policies. Moreover, input from the adjacent property owners and Pleasanton residents has been sought and obtained through one work session; further opportunity for public comment will occur at the Planning Commission and City Council hearings.

Staff feels that through the PUD process the proposed project has provided residents, the developer, and the City with a development plan that optimizes the use of the infill site in a sensitive manner. Therefore, staff believes that this finding can be made.

PUBLIC NOTICE

Notice of this application was sent to all property owners within 1,000 feet of the subject property. Staff has provided the location and noticing maps as Exhibit M for reference. At the time this report was published, staff had not received public comments regarding this application.

ENVIRONMENTAL ASSESSMENT

In 2012, the City Council certified a Supplemental Environmental Impact Report (SEIR) and adopted the CEQA (California Environmental Quality Act) Findings and a Statement of Overriding Considerations for the Housing Element update and Climate Action Plan General Plan Amendment and Rezonings. This SEIR was a supplement to the EIR prepared for the Pleasanton 2005-2025 General Plan which was certified in July 2009. The subject property was one of the 21 potential housing sites analyzed in the SEIR. A total of 54 multi-family housing units were analyzed in the SEIR for this site.

The California Environmental Quality Act specifies that residential development projects, such as this site, that are proposed pursuant to the requirements of an adopted SEIR that has been prepared and certified are exempt from additional environmental review provided: 1) there are no substantial changes to the project or to the circumstances under which the project is being undertaken that involve new significant environmental effects or that substantially increase the severity of previously identified effects; or 2) that new information of substantial importance which was not known at the time the previous EIR was certified shows the project will have one or more significant effects not discussed in the EIR. Although the subject site was removed as a potential multi-family housing site, the SEIR analyzed development for 54 multi-family units. The project density currently proposed, 13 detached, single-family units, is significantly lower than analyzed in the SEIR and, therefore, staff does not believe that there are any changes in the project, circumstances, or new information causing new significant environmental effects. The applicant has provided site specific studies (e.g., noise, riparian, cultural resources, geological, etc.) to address development mitigations and staff has added conditions of approval to address additional mitigation measures that are specific to this site that were discussed in the SEIR and the Mitigation Monitoring and Reporting Program. Thus, staff recommends this project be reviewed without any additional CEQA review or process.

STAFF RECOMMENDATION

1. Find that no substantial changes have occurred and no new information has become available since the preparation of the SEIR, and find that the previously prepared SEIR, including the adopted CEQA Findings and Statement of Overriding Considerations are adequate to serve as the environmental documentation for this project and satisfy all the requirements of CEQA;

2. Find that the proposed PUD rezoning and development plan are consistent with the General Plan and Downtown Specific Plan;

3. Make the PUD findings for the proposed development plan as listed in the staff report; and

4. Adopt a resolution recommending approval for PUD-97, PUD rezoning of an approximately 2.1-acre site at 4202 Stanley Blvd from C-F (Freeway Interchange Commercial) District to

PUD-MDR/OS-PH & WO (Planned Unit Development – Medium Density Residential/Open Space – Public Health and Wildland Overlay) District and for PUD Development Plan approval to retain the existing residence, demolish the washroom structure with unit and storage accessory structure, remove the 32 mobile home spaces, and construct 12 detached single-family homes, subject to the conditions of approval listed in Exhibit A, and forward the application to the City Council for public hearing and review.

Staff Planner: Natalie Amos, Associate Planner, 925.931.5613, namos@cityofpleasantonca.gov.

P12-1731, Jeff Schroeder, Ponderosa Homes

Work Session to review and receive comments on a preliminary application to demolish the existing residence and remove the 32 mobile home spaces and to construct a 14-unit, single-family residential development on an approximately 2.09-acre site located at 4202 Stanley Boulevard. Zoning for the property is C-F (Freeway Interchange Commercial) District.

Ms. Amos presented the staff report and described the scope, layout, and key elements of the proposal. She pointed out an error on page 9 of the staff report, which stated that 27 heritage trees are proposed to be removed; the actual number of heritage trees to be removed is 21.

Commissioner O'Connor inquired what the planned average distance between the homes is in terms of setbacks.

Ms. Amos replied that the typical side yard setback would be about five feet from the property lines.

Commissioner O'Connor requested clarification that the distance between the homes would be five feet on each side for a total of only ten feet of separation.

Ms. Amos said yes.

Commissioner Narum requested that a copy of the slide on the trees be provided to the Commission tonight as this would be one of the topics to be discussed.

THE PUBLIC HEARING WAS OPENED.

Jeff Schroeder, Ponderosa Homes, stated that he is pleased to be before the Commission tonight with this first look at a proposal for the two-acre site off of Stanley Boulevard. He noted that this site has been a mobile home park since the 1970s and is probably one of the most unsightly properties in and around Downtown Pleasanton.

Mr. Schroeder stated that the 2.09-acre site, which is actually 1.82 acres from a density calculation because of the wildland overlay, has 31 pads, plus an older single-family home on the site. He noted that including that portion of the property in the density calculation would result in 6.6 units per acre, which is a significant difference in the calculation. He indicated that an aerial picture of the site shows a pretty significant part of the Arroyo that is included in this property and will have to be owned by whoever buys this property. He added that a Homeowners Association will have to be established to maintain this common space. He noted, however, that he did look at some site plan alternatives and is open to having houses back up to the Arroyo, although that would be less desirable from a public planning perspective. He indicated that the current plan ends with a cul-de-sac, which would be a public street with public access to the open space and wildland area. He further noted that pretty much every other property along that section of the Arroyo is private property with no public access.

Mr. Schroeder stated that the pedestrian pathway is really not something that Ponderosa would normally propose. He indicated that it was raised by staff as a possible way to provide circulation, but they would prefer not to provide it. He noted that they do not usually have a lot of success selling homes next to those types of pathways, and those homes would have to be discounted. He added that in this case, staff has agreed that it could be gated and locked so only those people who live in the community can use it, thereby preventing a cut-through space for people coming to or from the Downtown through the neighborhood in a small area like that instead of going down a block. He noted that it is not a shortcut that would shorten the distance as it is the same distance as getting around the corner. He indicated that it would not be a big deal to keep this wildland open space in the plan if it is important to the City.

Mr. Schroeder then talked about the historic aspects of the property, which is the most controversial issue about this proposal. He stated that they are proposing to demolish the residence and the rest of the mobile home park. He indicated that early on, they hired a qualified historical architect/archaeologist to do a State-level survey on the property, and his report stated that there is nothing of significance about the property in terms of California requirements for historical registration. He added that he has gone through the entire historical context document which is currently being used by the Historic Preservation Task Force, looked at every category in the document, and found that this property does not qualify under any of the categories therein to make it worthy of preservation. He added that within what might be considered the residential context, the house does not meet any of the State requirements and does not have integrity either. He noted that the property has been modified: a second-floor apartment with dormers has been added, and the interior is completely modernized to a 1970's standard. He further noted that the house is in very poor condition and would require extensive remodeling and a considerable amount of dollars to bring up to habitable standards, and would probably exceed the value of the property if it were to be sold as a home. He pointed out that just because a property is old does not mean it is worthy of preservation. He reiterated that the property does not have any significance from any of the perspectives in the historical contexts or from the State standards.

Mr. Schroeder noted that the trees were brought up as an issue. He stated that the property has a considerable number of trees and that all of the heritage trees on the property within the development area are decorative trees that were planted at some point by a developer or property owner. He added that the only heritage trees that are native trees are within the creek setback area and would not be touched by the proposal. He noted that because these are small lots, it would be difficult and pretty much impossible to save the trees on the site plan. He indicated that they obviously went through the standard process for evaluating these trees in the tree report and created a value for the trees to be removed. He added that they would replace those trees that would be removed by their development proposal, which, they believe, would resolve that issue.

Commissioner Olson noted that there is a large heritage tree all the way back with a mobile home sitting right against it and inquired if that tree is in the wildland overlay.

Mr. Schroeder replied that that tree would not be removed. He explained that the site plan indicates a 25-foot setback from the top of the bank, right where the chain link fence is. He noted that he was not certain if that matches with the wildland overlay. He stated that the geologist did a preliminary slope stability analysis based on that setback and indicated that it was fine; however, it also incorporated some concerns over the wildland area, so the biologist is now working with staff to go back and look at where the actual top of the bank is from a Fish and Game standpoint. He indicated that it may actually be somewhat lower because this is the accretive side of the creek; the creek is migrating away from this property and accreting soil over time to this side of the property. He stated that if staff and the policy-makers were not concerned with that and would allow them some flexibility, they could adjust the setback closer to the creek, which would mean more development of the site, although it could change the configuration of the site. He noted that this would allow homes to be closer to the creek, and that goes back to the whole discussion about whether that area should be open space with public access or if it should be a private space. He explained that having the site plan configured as it is now would make that area a common space to be owned by a homeowners association, as opposed to if the houses are lined up to the back like the rest of the property along Stanley, it would then be private space and would have to be maintained by the property owners. He indicated that he is indifferent to either configuration and requested feedback from the Commission.

Commissioner O'Connor inquired if the lots would be the same size as what is currently being proposed if homes were constructed in that green area.

Mr. Schroeder said yes and that they would just have to reconfigure the plan. He noted that the proposed site plan represents this as a cul-de-sac design. He added that when they originally proposed this, they looked at two or three different designs with the Fire Department, including a hammerhead, which is a little unusual, and the cul-de-sac, which they thought worked better. He stated that if they did a hammerhead, two or three houses could be lined up that would back-up to the creek and facing the end of the cul-de-sac or street.

Commissioner O'Connor inquired if this would be a kind of land-locked private area if it were left as a common area open space with no public access.

Mr. Schroeder replied that was correct. He added, however, that it is a public street so anyone could drive down the public street and park there. He stated that for him personally, it is more of a visual thing; it feels open, as opposed to feeling closed off if there were houses at the end. He indicated that a builder/developer or someone who has to sell homes to the public wrestles with these kinds of issues because they will have to sell homes to people who have to figure out if they want to buy that house which has a creek in the backyard that is part of their lot.

Acting Chair Blank noted that houses at the end of a cul-de-sac are generally the premium homes.

Mr. Schroeder agreed. He noted that some people will not want to buy that lot because they do not want to be responsible for that open space. He added that if the open space were to be the backyard, the lot would probably be developed in a way that the top of the bank would have a tube steel fence to prevent any access down the slope; but the lot line would still go down to the middle of the creek. He noted that the lot would actually be larger, but most of it would be unusable.

Commissioner O'Connor stated that he was just trying to contemplate whether or not, if some or all of that area is utilized for construction, more open space could be created between the homes so they did not look like they were stacked on one another. He added that if the Pleasanton Heritage Association (PHA) is concerned about preserving the house on Lot 1, one or two more lots could be added into the back area, and that could offset any cost associated with renovating that house. He stated that he has not seen the house so he has no idea what it is or if it is even worth preserving.

Mr. Schroeder stated that he was trying to address that point. He noted that when they get the study about where the top of the bank actually is, and if there is an opportunity to move the setback line based on further geological analysis, his thought would be to try to open up the side a little bit more and probably do a little more side yard setback. He indicated that the five-foot side yard setback is not unusual and is the standard subdivision side yard that they used in the homes they built all over Pleasanton. He added that the lots are conventionally plotted lots and the houses will be ten feet apart. He stated that this site was on the 30-to-the-acre and 23-to-the-acre Housing Element list, and, therefore, in his mind, this could be considered relatively low density for the site with a much different type of development than was potentially envisioned and is really fairly different than most of what else is out there. He noted that the site has a higher General Plan designation, and the properties adjacent to this site as well as those on the other side of Stanley Boulevard are significantly denser than this. He further noted that there is a lot of second buildings, detached garages, and other buildings that have been built on those properties and have a higher coverage ratio than what is being proposed on the site. He added that this kind of project is a PUD and has standards: it is going to be what it is approved to be, and it is not going to change; the property owners will not be adding buildings on their lots.

Commissioner O'Connor stated that he was trying to change the aesthetics because having some green area as one drives down the back road or come through the court gives that feel of open space. He added that the houses on Lots 7 and 8 in the cul-de-sac are pretty close, and he just did not know if there were any options available; for example, moving another 10 or 15 feet just on one side of the street without wrapping around could result in more open space between the houses. He noted that a lot is gained from having that more open feel between the homes as well if it does not dramatically impact the feel of the open space at the end of the court.

Mr. Schroeder stated that he is certainly willing to look at that and is what they hope to accomplish with this additional analysis they are doing. He indicated that as is stated in the staff report and as has already been discussed a bit, to retain the existing house where it is would lose take away three lots in this plan, and to get the same lot count, they would have to do smaller lots and obviously some smaller, tighter product. He noted that there would also be the issue of ownership of that house, which would be retained by the property owner. He added that it is not something he would really want to be selling new homes next to as it is not very attractive and he does not see anybody having any real economic incentive to do anything with it.

Commissioner O'Connor asked Mr. Schroeder if the loss of three lots would be because of the positioning of that house.

Mr. Schroeder said yes.

Commissioner O'Connor inquired if the house would crumble if it were lifted and what it would cost to move it ten feet.

Mr. Schroeder replied that he has not looked into that. He indicated that he has a full home inspection report which he has not yet submitted to staff; it does not even include a structural analysis but is pretty extensive in terms of the outdated nature of the property in its existing condition, termite damage, structural damage, outdated wiring, plumbing, etc. He added that from the outside, the house appears to have some endearing characteristics, but inside, there is nothing really endearing about it with its popcorn ceilings and a 1970s kitchen. He noted that from a historical perspective, it does not have that much significance. He further noted that in Pleasanton's Historic Context Statement, there is a lot of really attractive examples of homes that would be worthy of preservation, and this house does not approach that level of detail or characteristic.

Commissioner Pearce disclosed that she met with the applicant a few months ago, walked the property, and walked inside the house. She then asked Mr. Schroeder if this application is time-sensitive.

Mr. Schroeder replied that from his standpoint, it is as he has an obligation to proceed with this project. He indicated that he has a contractor who purchased the property and that he had only so much time to do it with him.

Commissioner Pearce explained that she is trying to understand why Mr. Schroeder would bring this project forward in the middle of a Task Force process designed to ascertain a new method of doing things, specifically within the Downtown Specific Plan area.

Mr. Schroeder replied that he has had this property under contract for quite some time and that he is really somewhat behind schedule. He indicated that he had told the property owner that they need to wait and see how this rolls out, and it has taken a lot

longer than he had expected it to roll out and he could not wait any longer; they needed to move forward.

Commissioner Pearce asked Mr. Schroeder if he wanted to move forward before the Task Force finishes its work.

Mr. Schroeder replied that he did not have an option. He stated that he had hoped the Task Force process would have been done a little more quickly but that he understands that these things take time and that he obviously has had no control over that.

Acting Chair Blank told Mr. Schroeder that since he was at the last Task Force meeting, he would have heard the Task Force discussing the possibility of setting a hard date. He noted that had that happened, the Task Force would be over. He asked Mr. Schroeder how he would have proposed this property.

Mr. Schroeder replied that he would have proposed it just as it is: demolish the property as it is not of significance. He noted that just because the house is old does not mean it is significant. He indicated that he has a report here by a professional which indicates that the house is not historical. He added that he is certain another professional would say the same thing.

Acting Chair Blank noted that Mr. Schroeder had specifically mentioned a homeowner association and stated that he wants to make sure Mr. Schroeder is not talking about a maintenance association, which is a lot different.

Mr. Schroeder replied that if there is common property, there needs to be a homeowners association.

Acting Chair Blank commented that he thought a maintenance association could also serve that purpose. He then asked Mr. Schroeder what he speculates the properties would sell for.

Mr. Schroeder replied that in today's market and just off the top of his head, it would probably be in the low to mid-$700,000's. He added that it is going to take a while from where they are right now to actually bring this property to the market, and he does not know what the market is going to be like then.

Acting Chair Blank inquired how long it would take.

Mr. Schroeder replied that it would depend on the Planning Commission and the City Council.

Acting Chair Blank asked how long it would take after he gets a final approval.

Mr. Schroeder replied that should the project is approved before the middle of 2013, it would be winter by the time they complete designing the plans and getting through plan

check and everything else, so realistically, they would be starting the demolition and grading in the Spring of 2014.

Commissioner O'Connor noted that this site is located in a sensitive area of Historic Downtown and inquired about the design of the homes and the materials to be used. He stated that at final project submission, he would like to get better drawings that would make the project look like it is more of a historic area as opposed to using too much stucco or the wrong type of stucco on a craftsman-style home. He indicated that a lot of craftsman homes have a lot of stucco but they also have other architectural design elements that make them look a little more unique. He noted that some of the actual drawings display false rocks that stack very evenly, which make it look more like a newer development as opposed to a historic development. He asked Mr. Schroeder if he is open to having some different materials but would not drive costs up more than they already are.

Mr. Schroeder said they are certainly open to alternative materials and variations in elevations. He indicated that he has a project architect who has knowledge of these items and will be in shortly. He noted that the architect did consult the Downtown Specific Plan Guidelines in looking to develop the elevations, and so those materials are an attempt to create the type of elevations and character, using materials that are in those Guidelines. He pointed out that this is their first pass and that they are definitely willing to hear comments.

Commissioner O'Connor stated that he is aware it is tight as far as setbacks in front are concerned; however, he was hoping to get an extra foot or two to create a little deeper porch where people could actually sit as was done in the old homes.

Mr. Schroeder replied that he would certainly be willing to look at those types of details. He added that he would shoot for at least six feet on the portions that are useable porches for an elevational character. He noted that this project would have a different character because of its density, and the goal is to create a more typical, conventionally-plotted single-family detached home subdivision rather than the cluster-type project reflecting what was done across the street. He indicated that they believe there is a real need and demand for this type of housing in the Downtown area and that it would bring the type of buyers with disposable income who can walk to the Downtown and spend there. He added that this would be a real positive thing for the Downtown and certainly be an improvement over what is on the site now.

Mr. Schroeder stated that one of the issues of concern is the Floor Area Ratio (FAR). He indicated that they had pushed the FAR a little bit, although not a bad way in terms of design of the homes, and this was driven by what they think the market is. He referred to his earlier discussion about the density and coverage of the surrounding neighborhood, and he pointed out that with this FAR and this design, they are certainly not exceeding but probably would be on the lower end of the overall coverage compared to the surrounding neighborhood.

Mr. Schroeder then summarized other points that may not have been discussed:

- General Plan Amendment – If he had the time to go through a General Plan Amendment, he would raise the density on this site because he thinks it is too low for this location
- Pedestrian walkway – He is open to whatever the Commission thinks is best for the community.
- Existing Structure – The proposal is to demolish the structure because it really will not work by keeping the structure. They will not buy the property if they have to keep the structure. The sellers will retain ownership, and he [Mr. Schroeder] is not sure he wants to do the project with that structure there. He reiterated that the structure is not historically significant and that it would be uneconomical to make it useable; it is a detriment to the neighborhood.
- Lot Sizes and the Homes – He has heard some comments about design. He believes the driveway length of 20 feet is adequate; 22 feet can be considered depending on what setbacks are acceptable. He can fiddle these footprints a little bit and tighten them up to get better setbacks in those areas where there is enough room.
- On-Street Parking – This is adequate; it is a conventional public street with parking on both sides. All the houses have full driveways and two-car garages.'
- Heritage Trees – The native trees in the setback area along the creek will be preserved, but not the others.
- Cul-de-Sac – He is willing to look at various configurations, and he is open to having a common public space versus private space.

Christine Bourg, PHA Boardmember and resident and owner of a Downtown Historic home, stated that she has attended all the Historic Task Force meetings, although she is not a member of that Task Force. She indicated that she concurs with the comments made by Commissioner Pearce about considering the demolition of the 100-year home while the Task Force is still meeting. She agreed that Ponderosa Homes has done its work based on what the Downtown Specific Plan and the Downtown Design Guidelines currently say, and to establish the house in order to save the house sometimes requires proof that it would be a historic resource according to the California Historic Register. She noted that these are not being considered now in the Task Force; however, the documents indicate that an early occupant of the home, the Hall Family, has significant history here in Pleasanton. She recalled that during discussions on a Neal Street application to build a home, the Hall Family home at 215 Neal Street came up and the family was considered to be significant locally as they were involved in bringing the County Fair to Pleasanton. She added that Mr. Hall had significant holdings Downtown in warehouses and granaries, and the Hall Family also purchased this land and built the house that Ponderosa is proposing to demolish.

Ms. Bourg noted that the staff report states that the house shows some disrepair, but it could possibly be restored and/or relocated. She stated that rather than looking at this as an opportunity to demolish a house and develop 14 new homes, it should be considered as an opportunity to save the old home in front and restore it so that there will actually be a heritage home on that south side of Stanley Boulevard, the side that

has most of the old homes left. She continued that it could be a win/win situation with a great frontage to whatever homes are put behind it, and it could also be used as a great marketing tool as people come to Pleasanton because they like the old homes and the old feel.

Ms. Bourg stated that if the City required restoration/relocation in more cases, the City would have kept more of the homes we had/have, which are diminishing in number. She noted that there was one building demolished on Third Street within the last six months and building is starting on that; and the one directly across the street from the subject property is the 1908 bungalow which was approved for demolition within the last year, and which the developer of the property would now like to relocate that home. She added that it would be a great idea to relocate it across the street so there could be two actual heritage homes which fit in with the character of the Downtown.

Ms. Bourg agreed with Commissioner O'Connor that the homes be designed to look a little bit more like craftsman, and it would really be great if they took on some of the characteristics of the 100-year-old Victorian home in front.

Michael Swift stated that he owns the property on the east side of the project site and that they are also looking at developing. He indicated that he bought the property about six years ago and plans to build on the property, expanding the actual residence there and having a big backyard for his children to play in. He stated that he was worried that there would be high-density buildings next to him with people looking into his backyard while his children were playing there. He wanted to be on record that he supports the proposal. He added that he supports this plan because it had nice homes in a nice development, and he would rather have that than high-density residential buildings. He expressed only one concern regarding the kind of wall or fence that would be installed between the two properties

Mr. Schroeder indicated his appreciation for the comments on the historical property. He noted that he understands what the Task Force is doing, but he also thinks it is important to consider people's property rights when looking at historic property because this is about a subjective area. He stated that a lot of time, what is worth preserving or not is up to people's judgment, and that would be restricting people's rights. He indicated that this is one of those cases where he does not think it is a historic property. He noted that if this were something that were really valuable and could be a perfect example of a Queen Anne Victorian or a craftsman bungalow home with all the details, then maybe there would be incentive to spend half a million dollars to repurpose this house and make it something that could actually be sold to someone who would actually want to buy it; unfortunately, this is not the case, and neither he nor the property owner are willing to do that.

Mr. Schroeder stated that, which it was not discussed, the reality is that the property owners could continue to operate this mobile home park forever, and it is actually worth more money as a mobile home park. He added that he could buy it and operate it as a mobile home park, but he did not think that is the best thing for the community. He

indicated that he believes what would be best for the community is to add a plus through the creation of a new neighborhood on this site within the confines of the General Plan and bring the type of housing into the Downtown area that supports the Downtown businesses in the area.

Mr. Schroeder stated that there are a lot of other houses in town that are worthy of preserving, but this is not one of them for a lot of reasons that he has already brought up and which, he is sure, will be discussing again.

Commissioner Pearce referred to Mr. Schroeder's comment that the property could continue to operate as a mobile home park and stated that it was her understanding that the place was outdated, the hook-ups were from the 1960's, and unless it has significant upgrades, it could not be utilized as a mobile home park.

Mr. Schroeder replied that it has a legal right to operate as a mobile home park and can still do so.

Commissioner Pearce asked if this was true as a practical matter.

Mr. Schroeder replied that it may not be a mobile home park that is up to current standards as may be found in other mobile home parks, but it is a great location. He indicated that he could guarantee that pads there could be rented and it would be worth more in that configuration; and the value of it is such that putting capital into it to upgrade it can be justified and then get even better rental rates. He indicated that Mr. Wagner left the property in trust to the Lutheran Church, and Thrivent Financial Bank is the financial arm of the Lutheran Church. Mr. Schroeder stated that he does not think the property owner has the desire to operate a mobile home park. He further stated that he could also repurpose it as a mobile home park, upgrade it, and then run it that way; but that is not what Ponderosa does, and it is not what the community wants.

THE PUBLIC HEARING WAS CLOSED.

Acting Chair Blank noted that Ms. Greene just arrived in the audience and would like to speak on an item on the Consent Calendar. He advised Ms. Greene that the Commission will have to get through this part of the hearing and will then come back and revisit that Consent Item.

The Commission then proceeded to the Discussion Points

Discussion Points No. 1 and No. 2 were considered together.

1. Is the proposed density acceptable?

2. Is a pedestrian walkway to Vervais Avenue an appropriate amenity to exceed the mid-point density?

Commissioner Olson stated that his initial reaction when he received the packet was that it was too dense at 14 lots, but driving through it, there is quite a bit of space there. He stated that he liked the idea of trying to put a couple of homes at the very end up against the wild life overlay, and then put a little more space between the homes along the common road and still end up with 14 homes. He noted that he would not want to buy a home next to a pedestrian walkway. He added that from a marketing point of view, the walkway should not be done.

Commissioner Pearce stated that the 14 units are reminiscent of the DiDonato property. She noted that she has concerns when she see projects come before the Commission that have one unit less than the 15 units required to trigger the Inclusionary Zoning Ordinance. She indicated that she would rather see it significantly lower with more space between the homes and that she was not opposed to a concept that creates more open space by having a development of attached housing such as townhomes. She noted that going over the mid-point requires a public amenity, and this project does not appear to be proposed to be anything remotely public; it is a private landscape pedestrian walkway that is now being proposed to be gated. She indicated that she is not inclined to go over the mid-point at all if there is not provision for any kind of public amenity. She stated that her answers to No. 1 and No. 2 are "No."

Commissioner O'Connor asked Commissioner Pearce what density she was thinking about.

Commissioner Pearce replied that she would like to look at something closer to the mid-point. She added that 14 makes her edgy for a variety of reasons and without any kind of public amenity.

Commissioner Narum stated she was fine with the density but would prefer to see a couple of houses more at the end of the cul-de-sac to free up some space and spread out the houses a bit with a little more distance between them. She indicated that she lived in a development in Santa Rosa where they had a homeowners group to maintain common area, and then people trespassed and damaged and they had no control. She indicated that she sees this as fraught with that sort of problem, particularly if it gives the public access to a creek. She added that she does not think it necessarily bodes well in the long-term. She then stated she would like to see an effort to save a couple of the heritage trees that were rated 4 and 5, even though they are not necessarily native, because they still look pretty nice and would be a benefit to the project.

With respect to the walkway, Commissioner Pearce stated that it does not really make sense to her because the talk is about helping to continue to vitalize Downtown by bringing more people there. She indicated that she would rather see funds put into the Downtown for art or a bench. She agreed with Commissioner Olson that she would not want to live in Lot 5 or Lot 6 because she would be irritated with people probably tossing beer cans around.

Commissioner O'Connor stated that he is not thrilled with the walkway either and does not know how much it really adds to the development itself. He noted that it is not that far to walk out to the court and go Downtown. He indicated that it might cause other problems with the public jumping fences or coming into this green space for other purposes, thereby causing more problems for these homeowners. He stated that one way to discourage or close it off to the public may be to move these homes down into that space and somehow make the walkway less attractive to outsiders. He added that it would also create more space between the homes and thereby give the development a nicer look and add value to the homes.

Commissioner O'Connor stated that he is not opposed to the density but would really like to see something in exchange for that. He added that if the property does not have anything to offer the public and there is no public amenity, and if the older home up front were to be demolished, then it might be good to use any additional funds for that amenity to dress up the two front lots so that from the front of Stanley Boulevard, those two front houses would look more in line with what is on Stanley Boulevard rather than like brand new homes.

Acting Chair Blank expressed concern about the 14 homes. He stated that it feels like a lot to him but that he did not go inside the other home. He suggested that before this proposal comes back to the Commission, a tour be arranged for all the Commissioners to go inside the older home. He indicated that in his opinion, the walkway, as it is currently constructed, looks like a blocked-off private amenity and does not appear to be a public amenity at all. He stated that he lived on a cul-de-sac with a homeowners association and did not have problems with the common lands; he was on the Board of Directors and it was very rare that they got damage. He agreed with Commissioner Pearce that if there will not be a public amenity, then he does not understand why it wants to be above mid-point. He stated that considering making the two front homes historic-looking as a public amenity is a whole different discussion. He noted that for him, density is all about the public amenity; the walkway can be included if they wish, but it does not fulfill the requirement for a public amenity.

Discussion Points No. 3 and No. 4 were considered together.

3. Should the structure be demolished to accommodate the proposed development or should the applicant restore and relocate the structure to one of the proposed lots fronting Stanley Boulevard?

4. Given the age of the structure, should the historic evaluation be revised to reflect information in the Pleasanton Downtown Historic Context Statement?

Commissioner Narum stated that she is torn: she hears what the applicant is saying that the house needs work, but at the same time, every house that is torn down cannot be taken back. She added that it is unfortunate that the Commission is being asked to make a decision while the Task Force is going on because it was this Commission that went to the City Council and asked to redo that portion of the Specific Plan as the Commission is so conflicted when it has to make decisions like this. She indicated that she would like to see the house for herself as it is hard to get a good feel from pictures where it looks fairly intact; however, if the wiring does not work and the heating does not work, then it is not livable. She agreed with Acting Chair Blank that she would like to have a tour and get a little more information before she makes a hard and fast decision.

With respect to No. 4, Commissioner Narum stated that is part of the problem. She indicated that they can talk about where the Task Force is today, but her understanding of what is going on is a lot like the Downtown Hospitality Guidelines Task Force where there is a lot of different opinions and difficulty finding consensus. She stated that just to step in the middle of the Task Force process and use whatever it has at this point to make a decision is kind of problematic. She added that she does not have enough information on this Context Statement in the picture of the Task Force, particularly since she has not attended its meetings.

Acting Chair Blank agreed and disclosed that both he and Commissioner Pearce are members of the Task Force.

Commissioner Pearce stated that she is in the Task Force and that she has the Historic Context Statement in front of her. She noted that there was a statement made earlier that the Historic Context Statement was a series of criteria. She explained that it is not actually that; it certainly talks about the national criteria and the state criteria, but the purpose was the identification of the City's historic resources. She added that the reason the City spent $25,000 to do this is because the Task Force is tasked with developing more appropriate criteria for preservation of historic structures in the City, and the way the Task Force decided to go about doing this was to ascertain what periods of history are important to the City of Pleasanton and extrapolate City values from that. She indicated that the Task Force is in the middle of this process, and that is the reason she asked the question about whether or not this project is time-sensitive.

Commissioner Pearce continued that the Task Force was formed by the City Council because the criteria in place no longer made any sense to this City. She noted that she

does not care if somebody important lived there or if something important happened there; she cares about whether or not it is important to the City. She reiterated that the Task Force is in the middle of this process, and she is not inclined to make a decision about the demolition of a house at this time because she does not know what the Task Force is going to do. She added, however, that if the applicant really needs to go forward with this, she is inclined to be more conservative and promote the preservation of this structure because she certainly does not want to say it can be demolished only to have the Task Force come back when it has completed its mission and say that this would have been something the City would have encouraged preservation of.

Commissioner Pearce stated that she has walked this structure; she was inside it and around it, and this structure is certainly in much better shape than the structure at the DiDonato site. She indicated that she loves Ms. Bourg's idea, and that ideally, she would like to see this preserved. She indicated that she has talked to David DiDonato and to Paul Martin, and they are encouraging moving the DiDonato house even though they have been given license to demolish it. She stated that she would love to see it moved across the street. She concluded that because the Task Force is in the middle of ascertaining what is important to the City, she cannot support demolishing the structure at this point.

Commissioner O'Connor indicated that he has not been on the inside of the home so it is difficult to really comment on whether or not it should be demolished. He stated that with respect to No. 4, however, given the age of the structure, his gut feeling is that lacking a final conclusion of the Task Force at this time and just going by the historic documents that the Commission is asking applicants to go out and fund in connection with what it takes to get on a registry, there will be no more than five or six homes in the City that will make it. He noted that the Commission is talking about preserving a look and a feel in this town, which means that a lot more than just those that meet the registry-type homes needs to be preserved. He added that when structures are 80, 90, or 100 years old, he thinks the Commission really needs to be very careful. He noted that the City has already taken down too many of them, and if in these sensitive areas, it is much easier for a developer to clear the land and start fresh than it is to have to work around something like this, the City is going to be wiped out of all its older-looking homes. He added that at this point, without having any further information from the Task Force, he would not suggest demolishing the house that quickly.

Commissioner Olson agreed with Commissioner O'Connor's idea to do something with the two front homes on Stanley Boulevard. He indicated that it was a great idea and would trade it for demolition. He expressed concern, however, that there is a Task Force that is, in his opinion, the tail wagging the dog. He stated that he has not been inside the structure, but it is sitting there like a sore thumb. He added that the Commission has heard tonight that the applicant will probably not go forward with this project if that home has to stay there, and therefore, the Commission can decide that it wants that property to continue to be a mobile home park, which he thinks would not serve the Downtown area as well as a properly planned development on that property. He indicated that he is totally in favor of demolition.

Acting Chair Blank stated that one of the challenges both Commissioner Pearce and he have is to drive the Task Force to represent community values. He noted that if it were not for some Task Force members, nothing old would be demolished, so it is important that the pendulum not swing into "demolish everything" or "demolish nothing" as some of the Task Force members really want. He stated that it is really difficult for him to answer No. 3 because he has not had the chance to walk the inside of the structure, touch it, and feel it; he drove by it, looked at it, and was not all that impressed from the outside. He indicated that he thinks the timing needs to be considered. He recalled that the City has had a lot of events where a hillside development and other very controversial items have come in and suddenly shown up when other Task Forces were working on exactly those items. He stated that he is really concerned about the disruption this could cause in the middle of the Task Force process, and, that is why he recommended earlier that the Commissioners have a tour of the facility to at least provide them with some additional information.

Commissioner Olson inquired if the Task Force has looked at the possibility of moving homes. He stated that if the community feels strongly enough about this, then moving the home, if it is moveable, should be considered because it is standing in the way of a development that is probably going to help the Downtown area.

Acting Chair Blank replied that would be an option if the house is movable; or if the developer came back and said that they can move this home if they get the density they want, or if they get this amenity; or if they put this home 200 feet the other way; or bring that other home in and make them the cornerstones. He stated that the Task Force has not specifically talked about moving homes versus what is a historic home. He noted that right now, they are struggling to create a reliable definition that builders and developers can consider "a stake in the sand"; for example, if it is a home that was built, say, before 1890, it is historic; if it is after 1890, it is not.

Commissioner O'Connor clarified that he did not want to say he is opposed to demolishing the home because I does not have enough information at this time.

Acting Chair Blank stated that he was in the same position.

Commissioner O'Connor continued that if the Commission decided to demolish the home because it just was not worth saving, then he would like the public amenity to be to improve these two front lots and do something special.

Acting Chair Blank stated that he would not want to link the public amenity to the demolishment of the home.

Commissioner O'Connor noted that it would be in lieu of a public amenity.

Acting Chair Blank stated that he is not even thinking of that because a public amenity has to be because they are above the mid-point. He noted that if the developer

demolishes the house, doing the two front houses would be in addition to the public amenity.

Commissioner Pearce agreed that a public amenity cannot be a house.

Acting Chair Blank stated that it would be unusual.

Commissioner Pearce stated that what the General Plan considers public amenities are parkland and open space, unless it is going to be a museum which would be interesting. She agreed that Commissioner O'Connor's idea is a great one but it just does not qualify.

Commissioner O'Connor agreed that there should be another public amenity of some type if they are going to go above the mid-point; they could contribute to the park on Main Street; however, if they will be given increased density and if the house will be demolished, he would really like to see an additional investment on those two front homes to make them look a little extra special.

Discussion Points 5 and 6 were considered together.

5. Is the site layout, lot sizes, and home locations acceptable?

6. Are the length of the driveways for Lots 1-6 acceptable?

Commissioner Pearce stated that she is assuming the density of the lot size is fine. She noted that the site layout looks typical and something the Commission has seen. She added that the length of the driveways appears to be fine and sounds like the purpose is to accommodate extra cars, which seems appropriate. She indicated that the home locations seem fine and that she prefers this over squashing the homes in the back. She noted that she would love to see if something could be done to make the back more of an open space, which would be an amenity. She stated that she would rather leave it like this but would prefer to see less houses and larger lot sizes.

Commissioner Narum stated that she would like to see some other configurations at the end of the cul-de-sac; if it is a hammerhead with a couple of houses towards the back, she would like to see this with the goal of bigger lots and positioning of the houses such that a couple of the heritage trees that really had good to excellent ratings could possibly be saved. She indicated that the driveways are fine as long as they can accommodate a couple of parked cars and get them off the street.

Commissioner Olson agreed with Commissioner Narum and indicated that he would like to see two of the homes at the end. He indicated that it could be problematic to create an open space back there and provide public access down to that creek as any number of things can happen as a result of that and it would be a problem to the people who would be living there along the road. He noted that the driveways are fine.

Commissioner O'Connor stated that he is fine with the driveways as there is a constraint with the depth of the lots. He indicated that he would like to move two homes, one from each side, so the distance between these homes can be bigger and it would just be a lot more attractive.

Acting Chair Blank stated that he kind of agrees with everybody that what they have here is fine and that there are other ways this could potentially be arranged. He indicated that he still thinks it is a little too dense and would like to see one or two lots less because that would really allow the amenities to come forward. He stated that the driveways are fine

7. Is the on-street guest parking adequate?

Commissioner O'Connor stated that if parking is available on all the curb area, then the on-street guest parking is adequate.

Commissioners Narum, Pearce, Olson, and Acting Chair Blank agreed.

8. Should the layout be revised to preserve any of the heritage trees?

Commissioner Olson stated that he would like to preserve the two heritage trees located right up against the property line on the eastern boundary, those marked with a blue "x" on the right hand side.

Commissioner Pearce inquired about all those trees marked in purple on the left.

Commissioner Olson inquired if those could also be saved. He indicated, though, that they may be too crowded and the one in the middle might have to be taken out. He indicated that as he drove through there today, he noticed a lot of trees that looked very scrubby that ought to come out. He noted that this property, the way it is right now, is just an eyesore. He added that if somebody came in to Pleasanton and this was the first thing they saw, they would probably leave.

Commissioner Olson added that he would also like to save the huge heritage tree right in the far rear portion on the left on the west side with a mobile home right up against it.

Commissioner Pearce agreed with Commissioner Olson regarding saving the two trees on the right side and the two or three on the left side. She noted that 15 heritage trees that are rated 3 or 4 or 5 are being proposed for removal. She wanted to see how many of those can be saved. She indicated that she is always hesitant to take out heritage trees and that she is aware of the conversations at Council as to whether they are worth preserving if they do not look very good. She noted that the whole point of the heritage tree is that it is old, it has been there a long time, and it has this diameter trunk. She stated that she is not on the Heritage Tree Board but that she understands the broad picture; therefore, if more of them could be saved, it would be great.

Commissioner Narum stated that she would want to look at saving as the priority, the trees with the 4 or 5 rating unless there is something totally wrong with them. She noted that one of them may be a palm tree, which may not make sense to save, but some of the others are not. She added that if some of the ones with the 3 rating can also be saved, that would be fine as well. She noted that this is one of the reasons she would like to see the houses moved around to the end of the cul-de-sac to provide a little bit of an ability to reposition houses to save some of those trees.

Commissioner O'Connor agreed that if a couple of homes were moved down or eliminated to create more variation in the spacing, it would free up potentially a lot of space to save at least a few of the heritage trees. He also agreed with saving the trees to the east with a 3 to 5 rating, and those to the west as well. He added that depending on if the houses can be moved a bit, there are also a couple of trees against the back fence and even one along the roadway that looks like it is in the front yard area that can be saved. He indicated that this is worth looking at, even if not all the trees can be saved.

Acting Chair Blank agreed that not all of them can be saved. He suggested looking at those with a 4 rating and asked staff to pick some off of the charts that look like they can be saved.

9. Should the open space, located on the east side of the street bulb, include amenities (e.g., play structure, benches, etc.)?

Commissioner Olson stated that this would depend on the market and folks who are going to be attracted to this project and would want to buy in here. He noted that people with children would probably want to come here, but there may also be folks who want to downsize from 5,000- or 7,000-square-foot homes who might want to be here as well, and those folks may not be interested in a play structure. He noted that benches would certainly be nice.

Commissioner Pearce stated that she always thinks that a play structure is nice if there are kids around, but she would be open to doing something like what the Commission did at the DiDonato project where they put the money into a fund and then once a majority of the lots are sold, the need is ascertained. She indicated that it seems like a good compromise and would be happy with that.

Commissioner Narum agreed with Commissioner Pearce.

Commissioner O'Connor agreed with Commissioner Pearce as well, but as a minimum, if there is no need for a tot lot or play structure, he agreed with Commissioner Olson that a nice space with benches could be created for the homeowners. He noted that this would not be known until the houses start to sell.

Acting Chair Blank agreed that it is certainly an option, but it would have to wait until later.

10. Are the FARs appropriate for the development?

Commissioner Olson stated that, as the applicant indicated, they are pushing the envelope; but again, a re-arrangement of the lots to use the end of the roadway will probably end up being acceptable in his view.

Commissioner O'Connor concurred that he also thinks the applicant said there was some room to work with the FARs. He noted that moving some of the homes may create some larger lots on the end and may get some extra width between homes; but backyards are pretty small. He indicated that he is not really opposed to the FAR but more outside space is always better. He agreed with Commissioner Olson that they are pushing up against the limit if they stay with what they have.

Commissioner Narum stated that she is fine with the FARs and considers them to be just a little bit of a business decision. She added that if the applicant thinks he can sell the homes with this arrangement and closeness, she will not say no; however, she thinks that shifting some of the homes may improve the FARs a little bit which would be a bit of a benefit to the development.

Commissioner Pearce stated that she would agree with that although what the exact FAR is going to be is not known at this time. She indicated that it could be higher than 75 percent and that she would love to see a lower density with larger lot sizes which would help the FAR as well; but she is not necessarily opposed to it.

Acting Chair Blank agreed, stating that given where it is, it is probably not bad; but he would like to see a little less density which would result in larger lots which would lower the FARs.

11. Does the Commission wish to make any suggestions regarding the house designs or setbacks?

Commissioner O'Connor stated that the houses need to look a little more like the historic homes in the Downtown; a little more in character. He asked the applicant to make sure that the materials used are those for a real craftsman or cottage without using the newer techniques of some of the fake rock, the stackable rock, the cement rock that are being used in newer developments that are not so concerned with the historic look. He added that more articulation is always better, the length of the overhangs that the older homes had so they do not look like some of the newer developments.

Commissioner Olson generally agree with Commissioner O'Connor.

Commissioner Narum stated that she would like to see more articulation on Lots 1 and 14 on the side facing Stanley Boulevard. She noted that there is a classic craftsman house across the street from the Chamber of Commerce that was actually

built fairly recently using a plan from Sears from the 1920's or 1930's that looks remarkable in the sense that one would not know it is a new house by the way it was put together. She suggested that the architect or applicant could look at that a little bit for consideration of details and maybe incorporate them into these homes to make them look a little more of the old world.

Commissioner Pearce stated that was a great idea.

Acting Chair Blank agreed that the homes on Lots 1 and 14 are critical and the more they can be made to look appropriate, the better it would be.

Acting Chair Blank informed Mr. Schroeder that he could come back for a second Work Session or come back with a final application. He strongly suggested that he include some really good visual depictions on what this is going to look like from the street. He indicated that he is aware these are expensive to do, but it helps the Commission understand what this will look like. He recommended that he bring color pallets that are nice and large so the Commission can look at them and get a sense of the colors, and that he coordinate with staff to schedule visits to the house.

Acting Chair Blank asked the applicant and staff if they had what they needed.

Mr. Schroeder stated that a lot of things that were brought up had already been discussed, but he would like to make a few comments:

1. They actually have BMR credits that they were going to use for this project, so the unit count does not really matter to them.

2. The walkway was not offered as a public amenity; it was just something that staff had suggested so it was incorporated in the plan. He plans to come back with a proposal for a cash donation towards a park to be constructed on the property off of Vervais Avenue which is next to this site.

3. He will coordinate with staff to ensure that the Commissioners get to see the house.

4. He will look at the issues brought up regarding the site planning.

5. With respect to the density issue, he pointed out that it is probably going to be one of the lower density sites in the area. They are really at 6.6 units per acre; they should not be penalized because part of the property is in the creek.

6. The trees are really impossible to save on a site like this. None of the trees proposed to be removed are native trees. They are all decorative trees that were planted at some point by someone who owned the property, and a lot of them are not in good shape. If a house were built that close to some of those trees, half the limbs would need to be removed; actually grade the site and preparing for

development would require tearing out all the roots, so the trees would not survive. But they will look into it to see if there are any ways some trees can be saved, especially with re-working the site plan based on some of the ideas that the Commission presented.

7. The FAR, in his mind, is adequate because this is what the market would like to see here. In the context of what is surrounding this area, from an aerial viewpoint, this site is probably the lowest density that is out there, except for a couple of single family homes that do not have a lot of out buildings on the property.

8. They will look at some additions and some more articulation and changes to the architecture and some enhancements.

Commissioner O'Connor noted that a neighbor brought up the fencing issue and asked what type of fencing is proposed for the project.

Mr. Schroeder replied that they had not gotten to it yet. He stated that they typically do a standard good-neighbor redwood type of fence. He added that he is not opposed to something other than that and that they have done other projects in town with masonry walls, which are more expensive but are attractive to buyers because they look nice and no maintenance is ever required. He noted, however, that it would need some contextual analysis as to whether it is really appropriate to create that type of fencing for this site. He further noted that they can also use an upgraded wood fence that is a little nicer than the standard six-foot board-on-board redwood fence.

Commissioner O'Connor inquired what type of fencing is prominent in that neighborhood on the side that has most of the homes remaining.

Ms. Stern replied that they are typically residential wooden fences and that masonry walls are not utilized except as a separation between residential and commercial uses.

Mr. Schroeder indicated that they are open to suggestions and that he will talk to the neighbor about it. He noted that the other side of the property is almost all a commercial use except for the one in the back. He noted that he would also talk to the woman who came to their meeting about that as well.

No action was taken.

EXHIBIT D

THE CITY OF PLEASANTON

Planning Commission Staff Report

November 28, 2012
Item 6.b.

SUBJECT: **Work Session for P12-1731**

APPLICANT: Ponderosa Homes / Jeffrey Schroeder

PROPERTY OWNER: Thrivent Financial

PURPOSE: Work Session to review and receive comments on a preliminary application to demolish the existing residence and remove the 32 mobile home spaces and construct a 14-unit, single-family residential development on an approximately 2.1 acre site.

GENERAL PLAN: Medium Density Residential – 2 to 8 dwelling units per gross developable acre, Public Health and Safety with Wildland Overlay

SPECIFIC PLAN: Downtown Specific Plan – Medium Density Residential and Open Space

ZONING: Freeway Commercial (C-F)

LOCATION: 4202 Stanley Boulevard

EXHIBITS:

A. Narrative and Conceptual Plans dated "Received October 4, 2012"
B. Summary of Discussion Points
C. Pleasanton Trailer Court – Layout of Trailer Pattern and Sewage Arrangement
D. Resolution No. 97-52
E. Historic Architecture Evaluation Report
F. HortScience Tree Report
G. Location and Noticing Maps

BACKGROUND

Site History

Pleasanton Mobilehome Park, located at 4202 Stanley Boulevard, was annexed into the City in 1963. Staff notes that there were no records of the County processing and/or requiring a Conditional Use Permit (CUP) to operate the mobile home park and, therefore, when the property was annexed into the City, staff at that time assumed that the mobile home park was a legal use within the County. When the property was annexed, it was documented that the

property contained 32 mobile home spaces, a public washroom (i.e., showers, toilets, and laundry), and one single-family dwelling. Please refer to the Pleasanton Trailer Court – Layout of Trailer Pattern and Sewage Arrangement in Exhibit C.

In 1968, the City revised its commercial zoning designations and the zoning for the property was changed from C-T (Commercial – Thoroughfare) to C-F (Freeway – Commercial), which conditionally permitted mobile home parks. With this zoning designation change, the mobile home park was considered a legal, non-conforming use and was allowed to continue to operate as such so long as the use was not altered or enlarged.

In 1978, the Planning Department conducted a City-wide survey of residential units. In response to the survey, it was discovered that the washroom had been illegally converted to a living unit. There is no documentation of a CUP or other Planning entitlement applied for and/or approved for the illegal conversion.

In 1991, Jerry Wagner purchased the park and made several alterations to the use and site. These alterations included, but were not limited to, converting the caretaker's single-family dwelling into a duplex and renovations to the illegal unit in the park's washroom structure.

In 1996, Mr. Wagner submitted a CUP application to expand the non-conforming use by requesting legalization of a new space, thereby increasing the total number of mobile home spaces from 32 to 33. The City Council denied the request to increase the number of spaces in 1997 (Resolution No. 97-52, attached as Exhibit D). Section 4 of said Resolution states that the park "is operating in violation of the Zoning Ordinance" and directs staff to "take appropriate steps, including legal action, to return the property to its legal, non-conforming status." There is no record of what "steps" staff took to return the property to its legal, non-conforming status as the site still contains the illegal conversion of the house to a duplex and the illegal unit in the washroom.

Preliminary Review Application

Ponderosa Homes has submitted a preliminary review application to demolish the existing residences (illegal duplex and washroom unit) and remove the 32 mobile home spaces and construct 14 single-family homes. As noted in Ponderosa's narrative (Exhibit A), several mobile home units remain on the property with only two being occupied by tenants. The narrative also indicates that the property owner is retaining the option to continue to operate the site as a mobile home park versus redevelopment. Staff notes that should a formal application be submitted for redevelopment that requires relocating mobile home park residents, a report must be filed with the City detailing the impact of the closure of the park on the displaced residents. The impact report would address the availability of adequate replacement housing in mobile home parks and relocation costs for the displaced residents. A copy of the report must also be provided to the residents of each mobile home in the park and all mobile home owners, by certified mail, at least 15 days prior to a hearing held by the City for a formal application. The report must be provided at the same time that the public notice for a change of use (i.e., mobile home park to single-family residential) is provided to the residents which requires a six month or more written notice of termination of tenancy following the date that all required permits and/or entitlements have been approved by the City. Staff notes that the City will not hold a formal application hearing until the applicant has satisfactorily

verified to the City that all residents and mobile home owners have received a copy (by certified mail) of: the impact report, notice of application to close the mobile home park and change of use, and the date, time, and place for the hearing. Since the project before the Commission is not a formal application, the impact report is not required for this work session

Development of the area raises issues pertaining to the historic evaluation of the former caretaker's home, site layout, and house design. Staff and the applicant request the Planning Commission to review, comment, and provide direction on the preliminary concept before submittal of any future development plan application. The work session will also provide the public with an opportunity to review and comment on the proposed plan.

SITE DESCRIPTION

The subject site is approximately 2.1-acres (80,200 square-feet) in size and is located on the south side of Stanley Boulevard. The lot is relatively flat with the exception of the rear portion of the rear lot, approximately 12,516 square-feet (0.287-acres), which has a moderate to steep downward terrain into the Arroyo del Valle. The Arroyo del Valle portion has a General Plan Land Use designation of Public Health and Safety with Wildland Overlay and, therefore, is undevelopable. Please refer to Figure 1 below.

Figure 1: Site Location

The site contains 32 mobile home spaces, with several of the spaces containing mobile homes, a caretaker's home that was converted to a duplex and two accessory structures; one is used for storage and the other contains the laundry facility and an illegal unit. There are 44 trees on-site, the majority of which border the property lines, with 27 of them being heritage trees.

The property is bordered on the east by a single-family home and vacant lot, the south by single-family homes, and the west by a chiropractor's office and single-family homes. The recently approved 13-lot, single-family home development (located at 4171 Stanley Boulevard) and Window-ology are located directly north of the subject site, opposite Stanley Boulevard.

PROPOSAL

Ponderosa Homes is proposing to demolish the existing structures (i.e., caretaker's "duplex", washroom structure with unit, and storage accessory structure), remove the 32 mobile home spaces, and remove 33 of the 44 trees on-site, 27 of which are heritage size trees, to accommodate their proposal for a single-family home development. The conceptual proposal includes 14 single-family homes over the approximately 1.84 northern acres of the property, not to extend beyond the property's Public Health and Safety with Wildland Overlay designation, as shown on Figure 2 on page 5, with minimum lot sizes proposed at approximately 3,510 square-feet. The proposal would result in a density of 7.6 dwelling units per acre. A new private cul-de-sac street with on-street parking off of Stanley Boulevard would provide access to the new lots. There is no proposal to alter the rear portion of the lot that is designated as Public Health and Safety with Wildland Overlay or the Arroyo del Valle.

Please refer to the next page for Figure 2

Figure 2: Conceptual Site Plan with Wildland Overlay

There are three proposed house plan types that will be mixed throughout the development. There will be seven lots with Plan 1 (house size is approximately 2,195 square-feet), two lots with Plan 2 (house size is approximately 2,226 square-feet), and five lots with Plan 3 (house size is approximately 2,624 square-feet). Plan 1 would have wraparound front porches while Plans 2 and 3 would have entry porches only. Each Plan is proposed as two-story with two-car garages and the option of having an architectural style of either "Craftsman" or "Cottage."

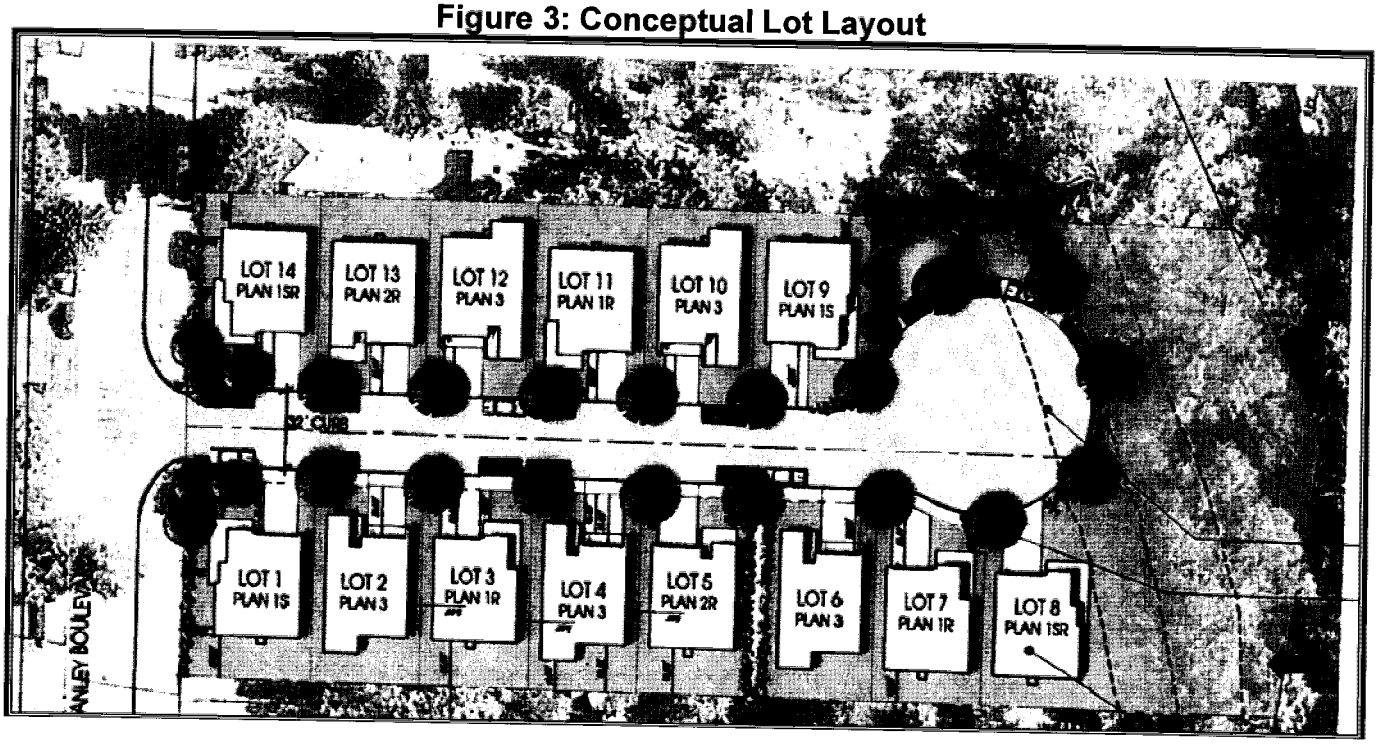
The maximum height, measured from finished grade to the highest point, for the homes are as follows:

Plan 1	**Plan 2**	**Plan 3**
Craftsman Design – 29½ ft	Craftsman Design – 25½ ft	Craftsman Design – 27½ ft
Cottage Design – 29½ ft	Cottage Design – 29½ ft	Cottage Design – 30½ ft

Please refer to Exhibit A – sheets 1.3-1.5, 2.3-2.5, and 3.3-3.5, for the elevation drawings. Staff notes that the elevation drawing on sheet 2.5 of Exhibit A is mislabeled. The elevation should reflect the title of "Elevation B" and not "Elevation A." Plan 1 and Plan 2 will have three bedrooms, with the option of converting the den into a fourth bedroom and Plan 3 has four

bedrooms, with the option of converting the den into a fifth bedroom. Please refer to Figure 3 below for the Plan designation and corresponding lot.

Figure 3: Conceptual Lot Layout

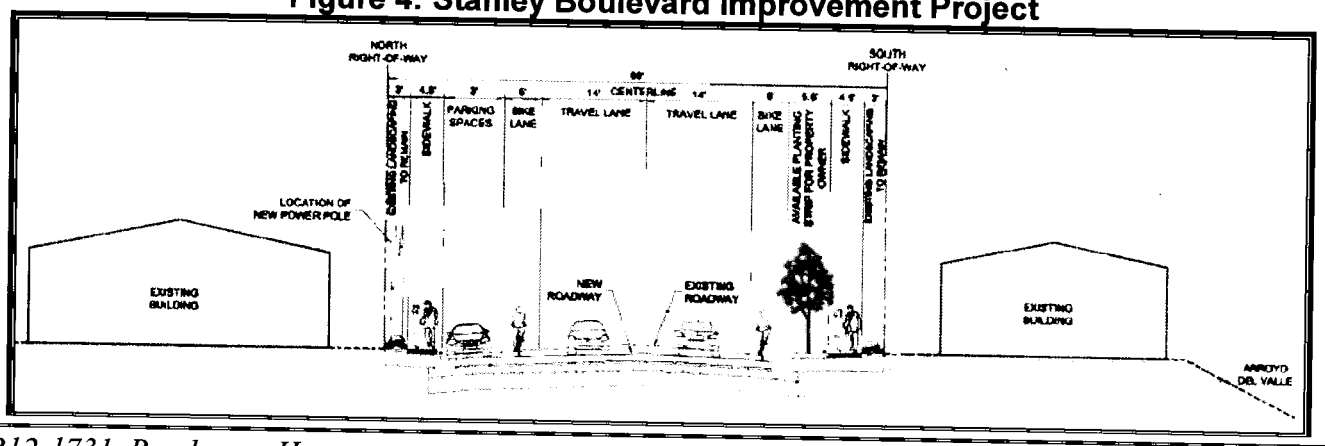


Ponderosa is also proposing a private gated landscaped pedestrian walkway, located between lot 5 and lot 6, for the residents of the development. The walkway would not be for public use and would provide direct access to Vervais Avenue for those living in the development. Staff notes that Vervais Avenue is a street without a sidewalk.

STANLEY BOULEVARD IMPROVEMENT PROJECT

As one of the Capital Improvement Projects (CIP) approved by the City Council, the Stanley Boulevard widening project is scheduled to begin in the Spring of 2016. It would include eliminating the off-street parking to allow for a bike lane, landscaping strip, and sidewalk in front of the subject property (see Figure 4 on below).

Figure 4: Stanley Boulevard Improvement Project



CONSIDERATIONS FOR THE WORK SESSION

Staff is presenting the Commission with conceptual plans (Exhibit A) for consideration and comments. This workshop will allow the Planning Commission the opportunity to provide direction to the applicant and staff regarding the request. The areas noted below are those of which staff would find the Commission's input most helpful.

Density and Open Space

Fourteen units on 1.84 (developable) acres would result in a density of 7.6 dwelling units per acre. The proposed density complies with the site's General Plan and Downtown Specific Plan Land Use Designation of Medium Density Residential which requires projects to have densities of 2 to 8 dwelling units per acre. The General Plan requires Medium Density Residential designated properties to provide public amenities, such as the dedication of parkland or open space, beyond the standard City requirements in order to exceed the midpoint density (5 du/ac) of this land use designation. Ponderosa is not proposing amenities for the subject site; however, they are proposing a private landscaped pedestrian walkway on the west side of the site, between lot 5 and lot 6, that would provide access to the Arroyo Green at Main, located on the south side of Vervais Avenue. The Arroyo Green at Main is an undeveloped park and is one of the eight park sites in the Master Plan for the Downtown Parks and Trails System (MPDPTS). The MPDPTS recommends the development of Arroyo Green at Main into a park suitable for a variety of uses (e.g., access to the Arroyo, picnic areas, etc.). Staff notes that it is unknown when the park will be developed. Ponderosa has indicated that they would contribute to improvements of the Arroyo Green at Main when the development of the park occurs.

Discussion Points

1. *Is the proposed density acceptable?*
2. *Is a pedestrian walkway to Vervais Avenue an appropriate amenity to exceed the mid-point density?*

Demolition of the Existing Home

The two-story, two-unit residential building, located on the northern portion of the property, that was built in 1912, would be demolished. The home was not included in the Historic Neighborhoods and Structures table of the General Plan nor was it included in the Downtown Historic Resource List and Map that was created for the 2002 update of the Downtown Specific Plan to identify individual properties and neighborhoods that contain outstanding examples of heritage structures. The project site is also not located in one of the five Heritage Neighborhoods that are identified in the Downtown Specific Plan.

While the property is not specifically listed in the General Plan or Downtown Specific Plan as an historic resource, the General Plan, Downtown Specific Plan, and Downtown Design Guidelines contain policies regarding the City's preservation goals. The General Plan has a policy which states:

Preserve and rehabilitate those cultural and historic resources which are significant to Pleasanton because of their age, appearance, or history.

The Downtown Specific Plan has policies that state:

Require the completion of the State of California Department of Parks and Recreation (DPR) Survey Form-523 to develop and document a statement of historic significance prior to the issuance of demolition permits for any historic resource older than 50 years. Evaluate these properties using the State of California criteria for the California Register of Historic Resources.

And

Prohibit the demolition of any building found to be historically significant with regard to the California Register criteria unless such building is determined by the Chief Building Official to be unsafe or dangerous, and if no other reasonable means of rehabilitation or relocation can be achieved.

The Downtown Design Guidelines indicate that demolition of buildings over 50 years of age is generally discouraged and that remodeling is encouraged over replacement.

In order to determine the historic significance of the structure, the structure was analyzed and a DPR survey was prepared by Ward Hill, Consulting Architectural Historian (Exhibit E), who specializes in historic research, historic architecture, and historic preservation. In order to be considered eligible for listing in the California Register, the structure must meet one or more of the following California Register criteria:

1. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

2. It is associated with the lives of persons important to local, California, or national history.

3. It embodies the distinctive characteristics of a time period, region, or method of construction, or represents the work of a master, or possesses high artistic values.

4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, state or the nation.

As described in the study, Mr. Hill found the structure does not meet any of the criteria listed above and the structure is not eligible for listing in either the California Register of Historical Resources or the National Register of Historic Places.

In 2011, the City Council appointed a seven member committee, comprised of two Planning Commission members and five members of the public, that was tasked with re-evaluating the City's Downtown Historic Preservation policies, guidelines, and process. This committee is

referred to as the Historic Preservation Task Force. The Task Force has the following objectives:

- Create a definition for teardown verses remodel.
- Evaluate historic neighborhoods.
- Ensure consistency with the General Plan, Downtown Specific Plan, and Downtown Historic Resource List and Map.

In September 2012, the Task Force developed a Draft Pleasanton Downtown Historic Context Statement (PDHCS). The PDHCS document is intended to bring a greater level of consistency to the city's historic preservation efforts and would establish criteria for determining the historical significance of properties in the downtown area which would assist decision makers in considering what is important to preserve or restore. The PDHCS describes several themes important to the historic development of Pleasanton. The Context Statement provides a framework for evaluation potential historic resources in Pleasanton.

Staff does not believe the existing residence is currently unsafe or dangerous, although it does show signs of disrepair and could possibly be restored and relocated to one of the proposed lots fronting Stanley Boulevard.

Discussion Point

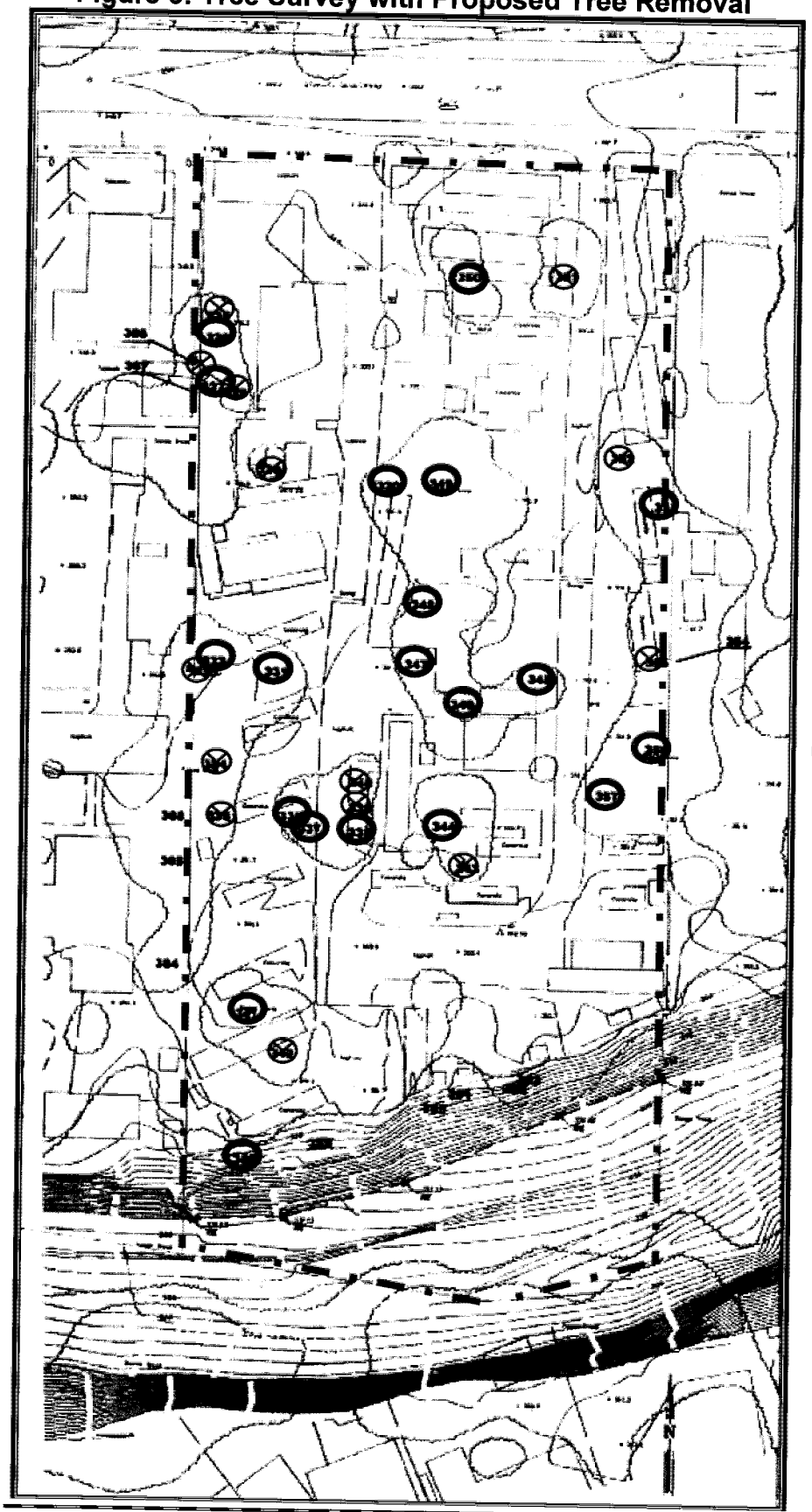
3. *Should the structure be demolished to accommodate the proposed development or should the applicant restore and relocate the structure to one of the proposed lots fronting Stanley Boulevard?*
4. *Given the age of the structure, should the historic evaluation be revised to reflect information in the Pleasanton Downtown Historic Context Statement?*

Site Plan Layout

A 32-foot wide cul-de-sac street, with a sidewalk proposed on the western side of the street, would provide direct access to the development. With the Stanley Boulevard Improvement Project, there will be a loss of off-street parking along the south side of Stanley Boulevard and, as such, future development on this site would require alternative means for additional on-site parking to accommodate visitors. On-street parking is proposed on both sides of the project's street in addition to the three cut-out parking spaces located on the east side of the cul-de-sac bulb. Each lot will have a two-car garage and driveway parking. Staff notes that the Traffic Division has reviewed the plans and requested that the driveways of lots 1-6 be increased to 22-feet in length. Increasing the length of the driveway would assist in preventing the residents from blocking the sidewalk.

As proposed, the layout would require removal of 33 trees, 27 of which are heritage trees. Of the heritage trees proposed for removal, seven of them are in near excellent condition (4 out of 5 rating – 5 being excellent), but require removal to accommodate the proposed development. Please refer to Figure 5 (on page 10) for the location of the trees proposed for removal. Staff has also included the tree report for the Commission's review and consideration in Exhibit F. The value of the 33 trees recommended for removal is $43,750.

Figure 5: Tree Survey with Proposed Tree Removal



Heritage Tree with 4 or 5/5 Rating

Heritage Tree with 3/5 Rating

Heritage Tree with 1 or 2/5 Rating

Non-Heritage Trees – Rating Varies

The undevelopable southern portion of the property (please refer to Figure 1 on page 5) would retain its Public Health and Safety with Wildland Overlay designation and the area would not be modified. The small area located on the east side of the cul-de-sac would be an open space area improved with landscaping. The proposed pedestrian walkway would also provide access to the Arroyo Green at Main when the park is developed in the future.

Discussion Points

5. *Is the site layout, lot sizes, and home locations acceptable?*
6. *Are the length of the driveways for lots 1-6 acceptable?*
7. *Is the on-street guest parking adequate?*
8. *Should the layout be revised to preserve any of the heritage trees?*
9. *Should the open space, located on east side of the street bulb, include amenities (e.g., play structure, benches, etc.)?*

Floor Area Ratio (FAR)

Ponderosa is proposing three house sizes, 2,195, 2,226, and 2,624 square-feet. With lot sizes of approximately 3,510 square-feet in area, the floor area ratios (FAR) would be 62.53%, 69.34%, and 74.75% (square-footage divided by a lot size of 3,210 square-feet). Since the "typical lot size" in Exhibit A indicates 3,210 square-feet, staff notes that some of the FARs could be higher if the lot size is less than 3,210 square-feet (e.g., near the cul-de-sac bulb).

Discussion Point

10. *Are the FARs appropriate for the development?*

Design and Setbacks

Ponderosa is proposing "Craftsman" and "Cottage" architecture designs (Exhibit A – sheets 1.3-1.5, 2.3-2.5, and 3.3-3.5). Side yard setbacks would be 5-feet, rear yard setbacks would range from 11.58-18.25-feet, front yard setbacks for porches would range from 10-17.75-feet, and house front yard setbacks would range from 12.50-25.73-feet. Given their locations, lot 1, 8, and 14 would have different side yard setbacks. The street side yard setbacks for lot 1 would be 13.45-feet, measured from the property line to the building wall, and 10.45-feet, measured from the porch to the property line. The street side yard setback for lot 14 would be 12.86-feet, measured from the property line to the building wall, and 9.86-feet, measured from the property line to the porch. The south side yard setback for lot 8 follows the creek setback and, therefore, would range from zero to approximately 7-feet for the porch and approximately 10-15-feet for the house. The "Craftsman" and "Cottage" designs for Plan 1 and the "Cottage" design for Plan 2 would have a maximum height, as measured from finished grade to the highest point, of 29½ - feet. The "Craftsman" home for Plan 2 is proposed at 25½-feet in height with Plan 3 proposing the "Craftsman" design at 27½-feet in height and the "Cottage" design at 30½-feet in height.

The Downtown Specific Plan (DTSP) states that the design of new buildings should draw upon the primary exterior features of the Downtown's traditional design character in terms of architectural style and materials, colors, details of construction, height, floor area, bulk, massing, and setbacks. These elements should be consistent with those elements of buildings in the immediate neighborhood, and the design of the new buildings should not represent a significant departure from the existing neighborhood character.

The DTSP and Downtown Design Guidelines (DTDG) outline parameters related to new construction of residential structures and also provide guidance related to architectural details, materials, and windows. The DTSP and the DTDG have the following design criteria.

DTSP Design and Beautification Design Criteria (page76):

Policy 17
"Protect the established size and spacing of buildings in residential neighborhoods by avoiding excessive lot coverage and maintain appropriate separations between buildings."

Policy 20
"Encourage garages at the rear of lots."

DTDG Residential Guidelines for New Construction, Remodels and Additions (page 35) states:

Siting
"Continue the existing density and spacing of homes. Match the side yard setbacks of surrounding homes."

"New homes should face the street."

"Place garages in the rear of lots."

Height & Mass
"Floor area of new homes and additions to existing homes are to be compatible with surrounding houses."

"Reflect the general massing of surrounding homes, including roof forms and step backs, front porches, bay windows, and balconies."

Design
"New construction ,additions and remodels should reflect the architectural style and detailing of the surrounding neighborhood."

Discussion Point

11. Does the Commission wish to make any suggestions regarding the house designs or setbacks?

PUBLIC NOTICE

Notice of this workshop was sent to all property owners and occupants within 1,000 feet of the subject property. Please refer to the location and noticing maps in Exhibit G. At the time this report was prepared, staff had not received any public comments.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission review the attached material, take public testimony, and provide comment and direction to the applicant and staff. Staff suggests the Planning Commission use the discussion points found in Exhibit B.

Staff Planner: Natalie Amos, Associate Planner, 925.931.5613, namos@ci.pleasanton.ca.us

EXHIBIT E

Ponderosa Homes

Tree Report
4202 Stanley Blvd.

Prepared for:
Ponderosa Homes Inc.
6130 Stoneridge Mall Road, Suite 185
Pleasanton CA 94588

Prepared by:
HortScience, Inc.
325 Ray Street
Pleasanton, CA 94566

May 2012
Revised June 18, 2013

PUD-97

HORT SCIENCE

Tree Report

4202 Stanley Blvd.
Pleasanton CA

Table of Contents

List of Tables

Attachments

Introduction and Overview

Ponderosa Homes is planning to develop the property located at 4202 Stanley Blvd. in Pl Pleasanton CA. Current site use consists of trailer park. Ponderosa Homes requested that HortScience, Inc. prepare a Tree Report for the site. This report provides the following information:

1. A survey of trees currently growing on the site.
2. An assessment of the impacts of constructing the proposed project on the trees.
3. Recommendations for action.
4. Appraisal of tree value.
5. Guidelines for tree preservation during the design, construction and maintenance phases of development.

Survey Methods

Trees were surveyed in May 2012. The survey encompassed all trees over 6" in diameter located within the property and trees located on adjacent properties whose canopies extended into the proposed project area. The survey procedure consisted of the following steps:

1. Identify the tree as to species.
2. Attach a numerically coded metal tag to the trunk of each tree. Off-site trees were not tagged.
3. Record the tree's location on a map.
4. Measure the trunk diameter at a point 54" above grade.
5. Evaluate the health and structural condition using a scale of 0 – 5 where 0 = dead, 1 = poor and 5 = excellent condition.
5. Comment on presence of defects in structure, insects or diseases and other aspects of development.
6. Assess the tree's suitability for preservation.

Access to some trees was limited by several factors including steep slopes and/or extensive vine and shrub growth. Trees that could not be accessed were given a tree number but no tag was attached to the trunk. Where vines prevented visual inspection of the lower trunk and base, it is noted in the ***Tree Assessment Form***.

Results for individual trees are located in the ***Tree Assessment Form*** (see **Attachments**). Tree locations are noted by tree tag number in the ***Tree Assessment Map***.

Description of Trees

Forty-four (44) trees were evaluated, representing 18 species (Table 1). Almost all trees appeared to have been planted as part of the site's landscape development. Western sycamore #359, coast live oak #368 and valley oak #362 were species that are native to the Pleasanton area. These three trees appeared to be indigenous to the site.

Table 1. Tree condition & frequency of occurrence. 4202 Stanley Blvd., Pleasanton CA.

Common name	Scientific name	Condition				No. of Trees	
		Poor	Fair	Good	Excel-lent	Heritage	Total
Tree of heaven	*Ailanthus altissima*	--	1	4	--	3	5
Paper mulberry	*Broussonetia papyrifera*	3	3	--	--	4	6
Calif. incense cedar	*Calocedrus decurrens*	--	--	--	1	1	1
Deodar cedar	*Cedrus deodara*	--	--	--	1	1	1
Cordyline	*Cordyline australis*	--	1	1	--	1	2
Blue gum	*Eucalyptus globulus*	--	1	--	--	1	1
Modesto ash	*Fraxinus veluntina* 'Modesto'	3	5	1	--	8	9
Calif. black walnut	*Juglans hindsii*	--	2	--	--	--	2
Paradox walnut	*Juglans hindsii* x *J. regia*	--	--	1	--	1	1
Japanese privet	*Ligustrum japonicum*	--	5	2	--	1	7
Canary Island date palm	*Phoenix canariensis*	--	--	--	1	1	1
Monterey pine	*Pinus radiata*	--	1	--	--	1	1
Western sycamore	*Platanus racemosa*	--	--	1	--	1	1
Flowering plum	*Prunus cerasifera*	--	2	--	--	--	2
Coast live oak	*Quercus agrifolia*	--	--	1	--	1	1
Valley oak	*Quercus lobata*	--	--	1	--	--	1
English oak	*Quercus robur*	1	--	--	--	1	1
Siberian elm	*Ulmus pumila*	1	--	--	--	1	1
Total, all trees surveyed		**8**	**21**	**12**	**3**	**27**	**44**

Modesto ash was the most frequently encounter species (9 trees). Tree condition was generally either poor (#345, 347, 348) or fair (#332, 349, 353, 356, 361). Trees in poor condition had been topped, were decayed or had poor crown structure (Photo 1, following page). Trees in fair condition were typical of the species with multiple stems arising at one point, often with included bark. Many ashes had been topped. Modesto ash #251 was 17" in diameter and in good condition. I couldn't, however, observe the base and lower trunk due to heavy vine growth. Trunk diameters ranged from 11" to 31" (#353). Trees were mature in development.

Photo 1. Typical appearance of trees in the landscape. Left. Modesto ash #332 had been topped to provide clearance from the overhead power lines. Right. Paper mulberries had been topped.

Seven (7) Japanese privets were present. As is typical of the species, privets had multiple stems that arose at or near the base. The largest stem was 10" in diameter. Overall appearance was that of a large shrub rather than a small tree. Most privets had been topped and allowed to resprout. Privets #328, 342, 343, 352 and 357 were in fair condition while #334 and 355 were good.

Six (6) paper mulberries were similar in form to the Japanese privets: multiple stems that arose at or near the base and a history of topping (Photo 1). The largest stem was 17". Paper mulberries #338, 339 and 340 were in poor condition; #367, 337 and 344 were fair.

Five (5) tree of heaven trees were also present. Trees were semi-mature in development with trunk diameters that ranged from 8" to 17". Overall condition was good (#325, 326, 327, and 329). Tree of heaven #358 was fair with codominant trunks, one-sided form and a history of branch failure.

None of the remaining species were represented by more than two trees:

- Calif. black walnuts #360 and 363 were located in the creek corridor and in fair condition. Both were small in size.
- Corydlines #330 and 333 were multi-trunk trees with narrow crowns. Tree #330 was larger in size and in good condition. Tree #333 as fair.
- Canary Island date palm #331 was 28" in diameter and in good condition. This was, however, a very young tree with only 4' of clear trunk.
- Blue gum #341 was 56" in diameter and in fair condition (Photo 2). This large tree had been topped and allowed to resprout. The main trunk divided into two smaller stems at 10'.

Photo 2. Although blue gum #341 had a dense canopy, the tree had been topped in the past (red arrows).

- English oak #350 was 48" in diameter and poor. Several stems arose at one point on the trunk. A crack formed among the stems many years ago. In response, a steel band and chains had been attached to the trunk. The crown had been severely topped.

- Monterey pine #348 was 30" in diameter and in fair condition (Photo 1). The main stem divided in two at approximately 24'. The tree leaned to the south. Much of the lower trunk and base were engulfed by vines.

- Valley oak #362 was located in the creek corridor on the south side of the site. It was a small tree (7") and in good condition.

- Western sycamore #359 was also in the creek corridor. This huge tree had several large trunks. Overall condition was good although the lower part of the tree was engulfed by vines.

- Flowering plum #335 was a small multistem tree in fair condition. It was mature in development.

The canopies of several trees located on neighboring properties extended into the proposed project area. Assessment of these trees was limited by what I could observe over the boundary fences.

- Paradox walnut #354 was a large mature tree with a diameter of approximately 36" (Photo 3). Overall condition was good. The two main stems had separated and a gap was present in the tree's canopy. The canopy extended approximately 35' into the project area and hung to 6'.

Photo 3. Paradox walnut #354 was located on an adjacent property but a large portion of the tree's canopy extended into the proposed project area.

- Siberian elm #364 was poor in both form and structure with extensive dieback in the crown (Photo 4). I estimated the trunk diameter to be near 25".

- Calif. incense cedar #365 was approximately 28" in diameter and 10' from the property line (Photo 4). Overall condition was excellent.

- Deodar cedar #366 was approximately 30" in diameter and 10' from the property line (Photo 4). Overall condition was excellent. The canopy extended 10' into the proposed project area.

Photo 4. Siberian elm #364, Calif. incense cedar #365 and Deodar cedar #366 were located on the adjacent property to the west.

- Flowering plum #367 was a mature tree with multiple stems that arose near the base of the trunk. The tree was located at the property fence. Overall condition was fair.

- Coast live oak #368 was approximately 2' from the property line. Several stems arose near the base. The tree was semi-mature in development and in good condition. Tree canopy extended 12' into the project area and hung to 3'.

The City of Pleasanton defines a Heritage trees as having a trunk diameter of 18" or greater or a height of 35' or more. Using these criteria, I determined there to be 27 Heritage trees.

Description of individual trees is found on the enclosed ***Tree Assessment Form***. Tree locations are found on the ***Tree Assessment Map***. Both are included as **Attachments**.

Suitability for Preservation

Trees that are preserved on development sites must be carefully selected to make sure that they may survive development impacts, adapt to a new environment and perform well in the landscape. Our goal is to identify trees that have the potential for long-term health, structural stability and longevity. Evaluation of suitability for preservation considers several factors:

- **Tree health**
  Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than are non-vigorous trees.

- **Structural integrity**
  Trees with significant amounts of wood decay and other structural defects that cannot be corrected are likely to fail. Such trees should not be preserved in areas where damage to people or property is likely.

- **Species response**
  There is a wide variation in the response of individual species to construction impacts and changes in the environment. In our experience, for example, Monterey pine and blue gum are very sensitive to construction impacts; while coast live oak is more tolerant of site disturbance.

- **Tree age and longevity**
  Old trees, while having significant emotional and aesthetic appeal, have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.

- **Species invasiveness**
  Species which spread across a site and displace desired vegetation are not always appropriate for retention. This is particularly true when indigenous species are displaced. Blue gum, Siberian elm, Japanese privet and tree of heaven are considered invasive.

Each tree was rated for suitability for preservation based upon its age, health, structural condition and ability to safely coexist within a development environment (Table 2).

Table 2. Tree suitability for preservation. 4202 Stanley Blvd.. Pleasanton CA.

Good	Trees with good health and structural stability that have the potential for longevity at the site. Calif. incense cedar #365, Deodar cedar #366 and Canary Island date palm #331 were rated as having good suitability for preservation.
Moderate	Trees in fair health and/or possessing structural defects that may be abated with treatment. Trees in this category require more intense management and monitoring, and may have shorter life-spans than those in the "good" category. Fourteen (14) trees were rated as having moderate suitability for preservation: tree of heaven #325, 326, 327, 329; Modesto ash #349, 351, 353; Japanese privet #334, 355; coast live oak #368; cordyline #330; Paradox walnut #354; valley oak #362' and western sycamore #359.
Poor	Trees in poor health or possessing significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess either characteristics that are undesirable in landscape settings or be unsuited for use areas. Twenty-seven (27) trees were rated as having poor suitability for preservation including 6 Modesto ash; 6 paper mulberry; 5 Japanese privet; Calif. black walnut #360, 363; flowering plum #335, 367; Monterey pine #346; Siberian elm #364; tree of heaven #358; blue gum #341; cordyline #333 and English oak #350.

We consider trees with good suitability for preservation to be the best candidates for preservation. We do not recommend retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

Evaluation of Impacts and Recommendations for Action

Appropriate tree retention develops a practical match between the location and intensity of construction activities and the quality and health of trees. The tree assessment was the reference points for tree condition and quality. Impacts from the proposed project were assessed using the Existing Tree exhibit (April 2013) prepared by RJA, project engineers. The site plan depicted the layout of 13 lots and a central street. Tree trunk locations were included but canopy outlines were representational. Grading information in the form of pad grades was supplied by RJA.

Impacts to trees could occur in a variety of ways. First, demolition of existing improvements such as buildings and infrastructure may directly damage tree roots and crowns. More significantly, grading and other construction activities may also damage trees, through both direct mechanical injury and indirectly by altering drainage. Although grading and drainage plans were not reviewed, in-fill projects such as the proposed commonly drain to the center of the site. Typical treatment results in grades higher than existing on the periphery of the project.

Impacts to the existing trees will be severe as most of the site will be re-developed. Lot 13, the existing residential structure, will remain. No development will occur in the creek corridor. Based on my assessment of the proposed plan and evaluation of 44 surveyed trees, I recommend preservation of 15 trees and removal of 29. Among the 15 trees recommended for preservation area:

- 5 located in the creek area including western sycamore #359 and Modesto ash #361 which have Heritage status.
- 4 located on lot 13 including 2 Heritage trees: tree of heaven #326 and 327.
- 6 located on adjacent properties including 5 Heritage trees: coast live oak #368, Calif. incense cedar #365, Deodar cedar #365, Siberian elm #364, and Paradox walnut #354.

The 29 trees recommended for removal include the following:

- Tree of heaven #358, a Heritage tree, located in the creek area.
- 22 trees located in proposed lots including 11 Heritage trees: coryline #330, Modesto ash #332, 345, 353, 356; Canary Island date palm #331, paper mulberry #336, 337, 338; blue gum #341; and Japanese privet #357.
- 6 tress located in the proposed new street, all of which are Heritage: paper mulberry #344; Monterey pine #346; Modesto ash #347, 348, 349; and English oak #350.

Twenty-one (21) of the 29 trees recommended for removal have poor suitability for preservation.

Appraisal of Value

The City of Pleasanton requires that the value of trees "included in the tree report affected by the development which are required to remain" (section17.16.050 #6) be established. To establish the value of the surveyed trees, I employed the standard methods found in ***Guide for Plant Appraisal***, 9th edition (published in 2000 by the International Society of Arboriculture, Savoy IL). In addition, I referred to ***Species Classification and Group Assignment*** (2004), a publication of the Western Chapter of the International Society of Arboriculture. These two documents outline the methods employed in tree appraisal.

The value of landscape trees is based upon four factors: size, species, condition and location. Size is measured as trunk diameter, normally 54" above grade. The species factor considers the adaptability and appropriateness of the plant in the East Bay area. The ***Species Classification and Group Assignment*** lists recommended species ratings and evaluations. Condition reflects the health and structural integrity of the individual. The location factor considers the site, placement and contribution of the tree in its surrounding landscape.

The appraised value of the 15 trees recommended for preservation is $83,200. The value of the 29 trees recommended for removal is $42,750.

Table 3. Proposed Action and Appraisal of Value. 4202 Stanley Blvd. Pleasanton CA.

Tree No.	Species	Trunk Diameter (in.)	Heritage Tree?	Condition 1=poor 5=excell.	Proposed Action	Location	Notes	Appraised Value
325	Tree of heaven	10	No	4	Preserve	Lot 13	Existing house to remain	$100
326	Tree of heaven	11,10,9	Yes	4	Preserve	Lot 13	Existing house to remain	$250
327	Tree of heaven	17,14,13	Yes	4	Preserve	Lot 13	Existing house to remain	$500
328	Japanese privet	6,5	No	3	Preserve	Lot 13	Existing house to remain	$150
329	Tree of heaven	8	No	4	Remove	Lot 1	Within project area; impacts from construction	$100
330	Cordyline	10,10,8,6	Yes	4	Remove	Lot 1	Within project area; impacts from construction	$700
331	Canary Island date palm	28	Yes	5	Remove	Lot 2	Within project area; impacts from construction	$1,200
332	Modesto ash	28	Yes	3	Remove	Lot 2	Within project area; poor suitability for preservation	$3,200
333	Cordyline	5,5,3,3	No	3	Remove	Lot 2	Within project area; poor suitability for preservation	$150
334	Japanese privet	7,2	No	4	Remove	Lot 3	Within project area; impacts from construction	$150

Table 3, continued. Proposed Action and Appraisal of Value. 4202 Stanley Blvd. Pleasanton CA.

Tree No.	Species	Trunk Diameter (in.)	Heritage Tree?	Condition 1=poor 5=excell.	Proposed Action	Location	Notes	Appraised Value
335	Flowering plum	6,6,5,4,4,3	No	3	Remove	Lot 3	Within project area; poor suitability for preservation	$650
336	Paper mulberry	12,8,8	Yes	3	Remove	Lot 3	Within project area; poor suitability for preservation	$700
337	Paper mulberry	14,6	Yes	3	Remove	Lot 3	Within project area; poor suitability for preservation	$600
338	Paper mulberry	9,9,7,6,6,5	Yes	2	Remove	Lot 3	Within project area; poor suitability for preservation	$450
339	Paper mulberry	7,6,6	No	2	Remove	Lot 3	Within project area; poor suitability for preservation	$200
340	Paper mulberry	7,6,5,4	No	1	Remove	Lot 3	Within project area; poor suitability for preservation	$50
341	Blue gum	56	Yes	3	Remove	Lot 4	Within project area; poor suitability for preservation	$6,050
342	Japanese privet	5,4	No	3	Remove	Lot 4	Within project area; poor suitability for preservation	$100

Table 3, continued. Proposed Action and Appraisal of Value. 4202 Stanley Blvd. Pleasanton CA.

Tree No.	Species	Trunk Diameter (in.)	Heritage Tree?	Condition 1=poor 5=excell.	Proposed Action	Location	Notes	Appraised Value
343	Japanese privet	6,5,4,4	No	3	Remove	Lot 6	Within project area; poor suitability for preservation	$200
344	Paper mulberry	17,10,7	Yes	3	Remove	Street	Within project area; poor suitability for preservation	$1,250
345	Modesto ash	25	Yes	1	Remove	Lot 8	Within project area; poor suitability for preservation	$500
346	Monterey pine	30	Yes	3	Remove	Street	Within project area; poor suitability for preservation	$1,950
347	Modesto ash	25	Yes	2	Remove	Street	Within project area; poor suitability for preservation	$1,900
348	Modesto ash	23	Yes	2	Remove	Street	Within project area; poor suitability for preservation	$1,600
349	Modesto ash	25	Yes	3	Remove	Street	Within project area; impacts from construction	$3,150
350	English oak	48	Yes	2	Remove	Street	Within project area; poor suitability for preservation	$7,050

Table 3, continued. Proposed Action and Appraisal of Value. 4202 Stanley Blvd. Pleasanton CA.

Tree No.	Species	Trunk Diameter (in.)	Heritage Tree?	Condition 1=poor 5=excell.	Proposed Action	Location	Notes	Appraised Value
351	Modesto ash	17	No	4	Remove	Lot 12	Within project area; impacts from construction	$2,050
352	Japanese privet	7,6,5	No	3	Remove	Lot 10	Within project area; poor suitability for preservation	$250
353	Modesto ash	31	Yes	3	Remove	Lot 10	Within project area; impacts from construction	$4,300
354	Paradox walnut	36	Yes	4	Preserve	Off-site, near lot 9	Near property line; prune to provide clearance for construction	$12,700
355	Japanese privet	4,3	No	4	Remove	Lot 8	Within project area; impacts from construction	$100
356	Modesto ash	28	Yes	3	Remove	Lot 8	Within project area; poor suitability for preservation	$3,550
357	Japanese privet	10,9,6	Yes	3	Remove	Lot 7	Within project area; poor suitability for preservation	$500
358	Tree of heaven	11,10	Yes	3	Remove	Creek	Poor suitability for preservation	$100
359	Western sycamore	42,30,20	Yes	4	Preserve	Creek		$21,750

Table 3, continued. Proposed Action and Appraisal of Value. 4202 Stanley Blvd. Pleasanton CA.

Tree No.	Species	Trunk Diameter (in.)	Heritage Tree?	Condition 1=poor 5=excell.	Proposed Action	Location	Notes	Appraised Value
360	Calif. black walnut	13	No	3	Preserve	Creek		$1,050
361	Modesto ash	11,10	Yes	3	Preserve	Creek		$450
362	Valley oak	7	No	4	Preserve	Creek		$1,400
363	Calif. black walnut	6,4	No	3	Preserve	Creek		$250
364	Siberian elm	25?	Yes	2	Preserve	Off-site, near lot 4	Near property line; prune to provide clearance for construction	$700
365	Calif. incense cedar	28?	Yes	5	Preserve	Off-site, near lot 3	Near property line; prune to provide clearance for construction	$16,400
366	Deodar cedar	30?	Yes	5	Preserve	Off-site, near lot 3	Near property line; prune to provide clearance for construction	$24,250
367	Flowering plum	7,6,6,6,5,5	No	3	Preserve	Off-site near lot 13	Near property line; prune to provide clearance for construction	$550
368	Coast live oak	10,9,7,6	Yes	4	Preserve	Off-site near lot 13	Near property line; prune to provide clearance for construction	$2,700

Tree Preservation Guidelines

The following are recommendations for design and construction phases that will assist in successful tree preservation.

Design recommendations

1. Verify the location and tag numbers of all trees within 25' of the proposal construction areas.

2. Allow the Consulting Arborist to review all future project submittals including grading, utility, drainage, irrigation, and landscape plans.

3. Prepare a site work plan which identifies access and haul routes, construction trailer and storage areas, etc.

4. Establish a **TREE PROTECTION ZONE** around each tree to be preserved. For design purposes, the **TREE PROTECTION ZONE** shall be the property line for off-site trees and the creek set-back line for trees in the creek corridor. No grading, excavation, construction or storage of materials shall occur within that zone.

5. Install protection around all trees to be preserved. No entry is permitted into a tree protection zone without permission of the project superintendent.

6. Route underground services including utilities, sub-drains, water or sewer around the **TREE PROTECTION ZONE**. Where encroachment cannot be avoided, special construction techniques such as hand digging or tunneling under roots shall be employed where necessary to minimize root injury.

7. Use only herbicides safe for use around trees and labeled for that use, even below pavement.

8. Design irrigation systems so that no trenching will occur within the **TREE PROTECTION ZONE**.

Pre-construction and demolition treatments and recommendations

1. The demolition contractor shall meet with the Consulting Arborist before beginning work to discuss work procedures and tree protection.

2. Trees to be preserved may require pruning to provide adequate clearance from construction activities. All pruning shall be performed by a licensed State of California contractor possessing the C61 classification license and the D49 specification. All pruning shall adhere to the latest editions of the American National Standards Institute Z133 and A300 standards. Pruning guidelines are found in the **Attachments**.

Tree protection during construction

1. Prior to beginning work, the contractors working in the vicinity of trees to be preserved are required to meet with the Consulting Arborist at the site to review all work procedures, access routes, storage areas and tree protection measures.

2. Any grading, construction, demolition or other work that is expected to encounter tree roots should be monitored by the Consulting Arborist.

3. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the Consulting Arborist so that appropriate treatments can be applied.

4. Fences have been erected to protect trees to be preserved. Fences are to remain until all site work has been completed. Fences may not be relocated or removed without permission of the project superintendent.

5. Construction trailers, traffic and storage areas must remain outside fenced areas at all times.

6. No materials, equipment, spoil, waste or wash-out water may be deposited, stored, or parked within the TREE PROTECTION ZONE (fenced area).

7. Any additional tree pruning needed for clearance during construction must be performed by a qualified arborist and not by construction personnel.

8. Any roots damaged during grading or construction shall be exposed to sound tissue and cut cleanly with a saw.

HortScience, Inc.

James R. Clark, Ph.D.
Certified Arborist WE-0846
Registered Consulting Arborist #357

ATTACHMENTS

Tree Pruning Guidelines

Tree Assessment Form

Tree Location Map

HORT SCIENCE

Pruning Guidelines

4202 Stanley Blvd.
Pleasanton CA

Qualifications

An I.S.A. (International Society of Arboriculture) Certified Arborist or Tree Worker is to be present at all times during pruning. Arborist must have a State of Calif. Contractor's License for Tree Service (C61-D49) and provide proof of workman's compensation and general liability insurance.

Objectives

The following is the primary objective:

1. Provide clearance for construction activities along the property line.

Specifications

1. All pruning shall be in accordance with the most recent editions of the *Best Management Practices for Pruning* (International Society of Arboriculture) and the American National Standard for Tree Care Operations (Z133.1) and Pruning (A300).
2. Pruning shall be performed from within 4202 Stanley Blvd.
3. No pruning cut should extend beyond the property line.
4. To the extent possible, pruning shall consist of branch removal and reduction cuts.
5. Tree shall not be climbed with spurs.
6. Pruning operations shall be conducted in a manner that does not damage surrounding understory plants and structures.

Jim Clark
Certified Arborist WE-0846
Registered Consulting Arborist #357
jim@hortscience.com

Tree Assessment Form

4202 Stanley Blvd.
Pleasanton CA
May 2012

HORT SCIENCE

TREE No.	SPECIES	TRUNK DIAMETER (in.)	HERITAGE TREE?	CONDITION 1=poor 5=excel.	SUITABILITY for PRESERVATION	COMMENTS
325	Tree of heaven	10	No	4	Moderate	One-sided to NE.; base of fence.
326	Tree of heaven	11,10,9	Yes	4	Moderate	Multiple attachments @ base; high crown; base of fence.
327	Tree of heaven	17,14,13	Yes	4	Moderate	Multiple attachments @ 3' with included bark; base of fence; high crown; nice.
328	Japanese privet	6,5	No	3	Poor	Multiple attachments @ 1'; 2 dominate; twisted.
329	Tree of heaven	8	No	4	Moderate	Multiple attachments @ 7'; good form.
330	Cordyline	10,10,8,6	Yes	4	Moderate	Multiple attachments @ base; needs crown clean.
331	Canary Island date palm	28	Yes	5	Good	Tag on leaf base on N.; 4' clear trunk.
332	Modesto ash	28	Yes	3	Poor	Multiple attachments @ 8' with included bark; 1 upright; 2 bowed out; topped for overhead lines.
333	Cordyline	5,5,3,3	No	3	Poor	Multiple attachments @ 1'.
334	Japanese privet	7,2	No	4	Moderate	Codominant trunks @ 4'; one-sided to NE.
335	Flowering plum	6,6,5,4,4,3	No	3	Poor	Multiple attachments @ base; bowed E.
336	Paper mulberry	12,8,8	Yes	3	Poor	Codominant trunks @ base & 2' with included bark; bowing apart.
337	Paper mulberry	14,6	Yes	3	Poor	Codominant trunks @ base, 5' & 10' with included bark; one-sided to NW.
338	Paper mulberry	9,9,7,6,6,5	Yes	2	Poor	Multiple attachments @ base; lean outwards; topped @ 12'.
339	Paper mulberry	7,6,6	No	2	Poor	Multiple attachments @ 2'; upright; topped @ 12'.
340	Paper mulberry	7,6,5,4	No	1	Poor	Failing @ base to S.; multiple attachments @ 3' with decay in center; topped @ 12'.
341	Blue gum	56	Yes	3	Poor	Huge tree; no basal flare; surrounded by pavement; codominant trunks @ 10'; topped high in crown with resprouts.
342	Japanese privet	5,4	No	3	Poor	Codominant trunks @ base; topped @ 5'.

Tree Assessment Form

4202 Stanley Blvd.
Pleasanton CA
May 2012

HORT SCIENCE

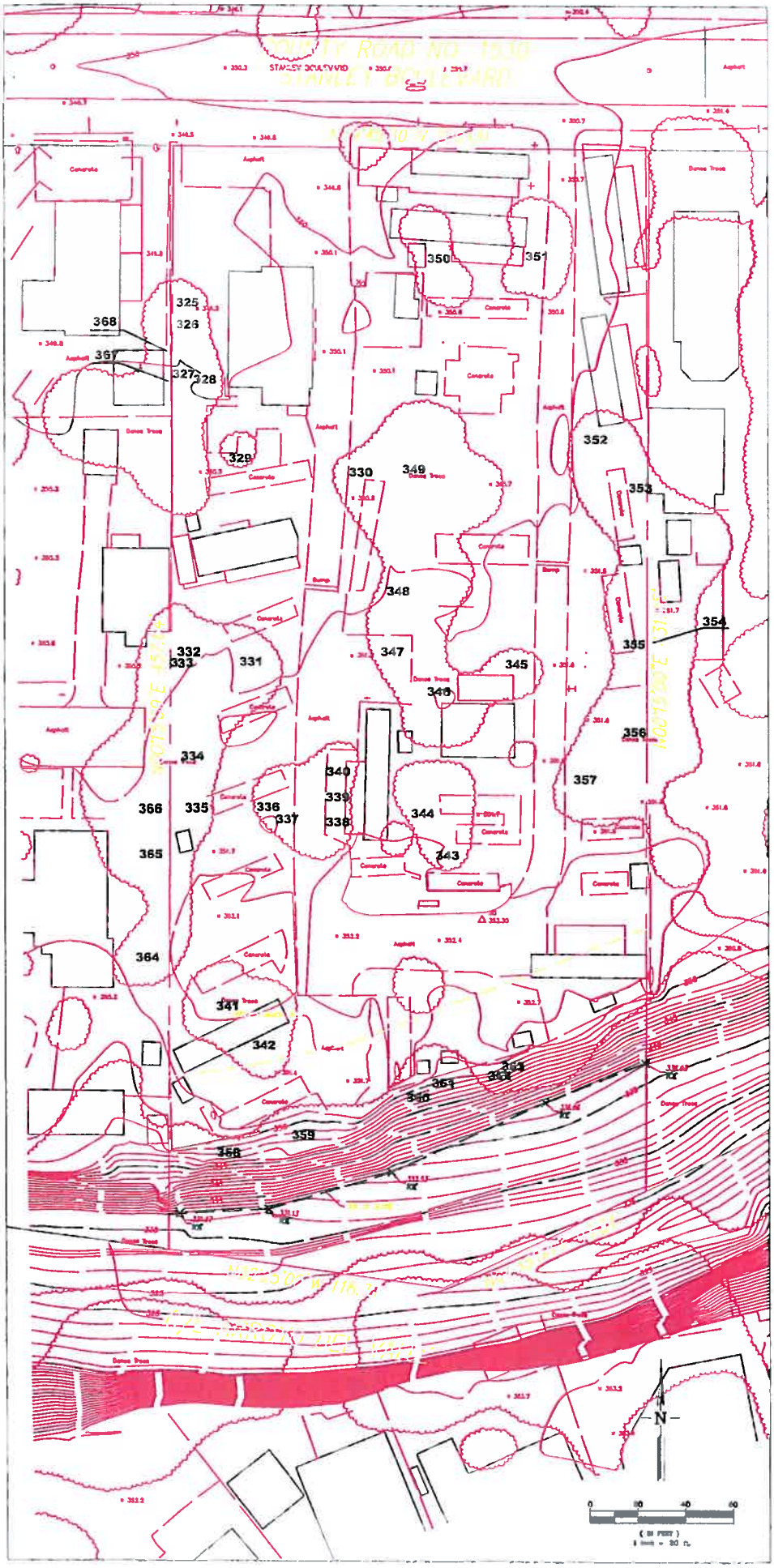
TREE No.	SPECIES	TRUNK DIAMETER (in.)	HERITAGE TREE?	CONDITION 1=poor 5=excel.	SUITABILITY for PRESERVATION	COMMENTS
343	Japanese privet	6,5,4,4	No	3	Poor	Codominant trunks @ base, 1' & 2'; high crown.
344	Paper mulberry	17,10,7	Yes	3	Poor	Poor form & structure; multiple attachments @ base; lean outwards; 17" multiple attachments @ 6'; all with included bark.
345	Modesto ash	25	Yes	1	Poor	Couldn't be worse; 4 4" sprouts off 2 12' high snags; ext. decay.
346	Monterey pine	30	Yes	3	Poor	Btwn. 2 houses; corrected lean S.; base engulfed by ivy; codominant trunks @ 24' with poor attachment; good canopy; poor structure.
347	Modesto ash	25	Yes	2	Poor	Multiple attachments @ 6'; 1 attachment with included bark; topped @ 12'; ext. decay @ topping point.
348	Modesto ash	23	Yes	2	Poor	Codominant trunks @ 6' & 7'; topped @ 12'; sprouts & decay.
349	Modesto ash	25	Yes	3	Moderate	Multiple attachments @ 8'; 4 stems bowed apart; 1 very heavy to W.; corrected lean SE.
350	English oak	48	Yes	2	Poor	Multiple attachments @ 12'; 3 stems split apart; supported by chains & steel band; topped hard with vigorous sprouts.
351	Modesto ash	17	No	4	Moderate	Couldn't see base & lower trunk due to ivy; rounded form.
352	Japanese privet	7,6,5	No	3	Poor	Codominant trunks @ 1', 3' & 5'; topped @ 8'.
353	Modesto ash	31	Yes	3	Moderate	One-sided to W.; pruned @ property line on E.; multiple attachments @ 10'.
354	Paradox walnut	36	Yes	4	Moderate	Off-site; tag on fence; couldn't see base or lower trunk; codominant trunks @ 6'; separated with gap in canopy; dense canopy; 1' from wood fence; canopy on SW. extends 35' into project & hangs to 6'.

Tree Assessment Form

4202 Stanley Blvd.
Pleasanton CA
May 2012

HORT SCIENCE

TREE No.	SPECIES	TRUNK DIAMETER (in.)	HERITAGE TREE?	CONDITION 1=poor 5=excel.	SUITABILITY for PRESERVATION	COMMENTS
355	Japanese privet	4,3	No	4	Moderate	Codominant trunks @ 3'.
356	Modesto ash	28	Yes	3	Poor	Multiple attachments @ 6'; center stem dead & decayed; topped @ 15' on W., 2' from fence.
357	Japanese privet	10,9,6	Yes	3	Poor	Codominant trunks @ 2' & 4'; topped @ 10'.
358	Tree of heaven	11,10	Yes	3	Poor	Codominant trunks @ base; one-sided to N.; branch failure.
359	Western sycamore	42,30,20	Yes	4	Moderate	Codominant trunks @ base & 4'; 42" corrected lean to W.; others lean E.; base engulfed by ivy.
360	Calif. black walnut	13	No	3	Poor	Poor form & structure; leans E.; codominant trunks @ 12' separated.
361	Modesto ash	11,10	Yes	3	Poor	At fence; codominant trunks @ 2';
362	Valley oak	7	No	4	Moderate	Sinuous
363	Calif. black walnut	6,4	No	3	Poor	Codominant trunks @ 3'; 5" dominates but lost central leader @ 14'.
364	Siberian elm	25?	Yes	2	Poor	**No tag**; off-site; ext. twig & branch dieback.
365	Calif. incense cedar	28?	Yes	5	Good	**No tag**; off-site; nice tree; 10' from property line; very minor canopy overhang.
366	Deodar cedar	30?	Yes	5	Good	**No tag**; off-site; nice tree; 10' from property line; canopy 10' over property line.
367	Flowering plum	7,6,6,6,5,5	No	3	Poor	**No tag**; off-site; @ fence; perhaps 40% of canopy over project; multiple attachments @ 3' or 4'; a mass of stems.
368	Coast live oak	10,9,7,6	Yes	4	Moderate	**No tag**; off-site; 1' from fence; codominant trunks @ 2', 3' & 4'; extends 12' into project; hangs to 3'; dense canopy.



Tree Assessment Map

4202 Stanley Boulevard
Pleasanton, CA

Prepared for:
Ponderosa Homes
Pleasanton, CA

May 2012

No Scale

Notes:
Base map provided by:
Ruggeri-Jensen-Azar & Associates, Inc.
Pleasanton, CA

Numbered tree locations
are approximate.

HORT SCIENCE

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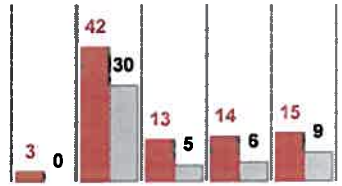
PUD - 97

GreenPoint Rated Checklist: Single Family

The GreenPoint Rated checklist tracks green features incorporated into the home. **A home is only GreenPoint Rated if all features are verified by a Certified GreenPoint Rater through Build It Green.**
GreenPoint Rated is provided as a public service by Build It Green, a professional non-profit whose mission is to promote healthy, energy and resource efficient buildings in California.
The minimum requirements of GreenPoint Rated are: verification of 50 or more points; Earn the following minimum points per category: Energy (30), Indoor Air Quality/Health (5), Resources (6), and Water (9); and meet the prerequisites A.2.a, H10a., J.2., N.1, and Q0.

GreenPointRATED
A PROGRAM OF BUILD IT GREEN

Total Points Targeted: 87



This checklist accommodates the verification of mandatory CALGreen measures but does not signify compliance unless accepted by enforcing agency. All CALGreen measures within the checklist must be selected as "Yes" or "n/a" for compliance with GreenPoint Rated. Build It Green is not a code enforcement agency.

The criteria for the green building practices listed below are described in the GreenPoint Rated Single Family Rating Manual. For more information please visit **www.builditgreen.org/greenpointrated**

Single Family New Home 4.2 / 2008 Title 24

WAGNER DRAFT

		Points Achieved	Community	Energy	IAQ/Health	Resources	Water	Notes
A. SITE			Possible Points					
	1. Protect Topsoil and Minimize Disruption of Existing Plants & Trees							
TBD	a. Protect Topsoil and Reuse after Construction	0	1				1	
TBD	b. Limit and Delineate Construction Footprint for Maximum Protection	0					1	
	2. Divert/Recycle Job Site Construction Waste (Including Green Waste and Existing Structures)							
Yes	a. Required: Divert 50% (by weight) of All Construction and Demolition Waste (Recycling or Reuse) (CALGreen Code)	Y				R		
Yes	b. Divert 100% of Asphalt and Concrete and 65% (by weight) of Remaining Materials	2				2		
TBD	c. Divert 100% of Asphalt and Concrete and 80% (by weight) of Remaining Materials	0				2		
	3. Use Recycled Content Aggregate (Minimum 25%)							
Yes	a. Walkway and Driveway Base	1				1		
Yes	b. Roadway Base	1				1		
TBD	**4. Cool Site: Reduce Heat Island Effect On Site**	0	1					
	5. Construction Environmental Quality Management Plan, Duct Sealing, and Pre-Occupancy Flush-Out [*This credit is a requirement associated with J4: EPA IAP]							
Yes	a. Duct openings and other related air distribution component openings shall be covered during construction. (CALGreen code if applicable)	1			1			
TBD	b. Full environmental quality management plan and pre-occupancy flush out is conducted (Prerequisite is A5a)	0			1			
	Total Points Available in Site = 12	5						
B. FOUNDATION			Possible Points					
No	**1. Replace Portland Cement in Concrete with Recycled Fly Ash and/or Slag (Minimum 20%)**	0				2		

EXHIBIT F

WAGNER DRAFT		Points Achieved	Community	Energy	IAQ/Health	Resources	Water	Notes
TBD	**2. Use Frost-Protected Shallow Foundation in Cold Areas (CEC Climate Zone 16)**	0				2		
TBD	**3. Use Radon Resistant Construction** [*This credit is a requirement associated with J4: EPA IAP]	0			2			
TBD	**4. Install a Foundation Drainage System** [*This credit is a requirement associated with J4: EPA IAP]	0				2		
TBD	**5. Moisture Controlled Crawlspace** [*This credit is a requirement associated with J4: EPA IAP]	0			2			
	6. Design and Build Structural Pest Controls							
TBD	a. Install Termite Shields & Separate All Exterior Wood-to-Concrete Connections	0				1		
TBD	b. All Plants Have Trunk, Base, or Stem Located At Least 36 Inches from Foundation	0				1		
	Total Points Available in Foundation = 12	0						
C. LANDSCAPE			Possible Points					
0%	*Enter in the % of landscape area. (Projects with less than 15% of the total site area (i.e. total lot size) as landscape area are capped at 6 points for the following measures: C1 through C7 and C9 through C11.*							
Yes	**1. Group Plants by Water Needs (Hydrozoning)**	2					2	
Yes	**2. Mulch All Planting Beds to the Greater of 3 Inches or Local Water Ordinance Requirement**	2					2	
	3. Construct Resource-Efficient Landscapes							
Yes	a. No Invasive Species Listed by Cal-IPC Are Planted	1					1	
Yes	b. No Plant Species Will Require Shearing	1				1		
Yes	c. 75% of Plants Are Drought Tolerant, California Natives or Mediterranean Species or Other Appropriate Species	0					3	
	4. Minimize Turf in Landscape Installed by Builder							
Yes	a. Turf Shall Not Be Installed on Slopes Exceeding 10% and No Overhead Sprinklers Installed in Areas Less than 8 Feet Wide	0					2	
No	b. Turf is Small Percentage of Landscaped Area (2 Points for ≤25%, 4 Points for ≤10%)	0					4	
TBD	**5. Plant Shade Trees**	0	1	1			1	
	6. Install High-Efficiency Irrigation Systems							
Yes	a. System Uses Only Low-Flow Drip, Bubblers, or Sprinklers	0					2	
Yes	b. System Has Smart (Weather-Based) Controller (CALGreen code if applicable)	0					3	
TBD	**7. Incorporate Two Inches of Compost in the Top 6 to 12 Inches of Soil**	0					3	
	8. Rain Water Harvesting System							
TBD	a. Cistern(s) is Less Than 750 Gallons	0					1	
TBD	b. Cistern(s) is 750 to 2,500 Gallons	0					1	
TBD	c. Cistern(s) is Greater Than 2,500 Gallons	0					1	
TBD	**9. Irrigation System Uses Recycled Wastewater**	0					1	
TBD	**10. Submetering for Landscape Irrigation**	0					1	
	11. Design Landscape to Meet Water Budget							
TBD	a. Install Irrigation System That Will Be Operated at ≤70% Reference ET (Prerequisites for Credit are C1. and C2.)	0					1	
Yes	b. Install Irrigation System That Will Be Operated at ≤50% Reference ET (Prerequisites for Credit are C1, C2, and C6a or C6b.)	0					1	

WAGNER DRAFT		Points Achieved	Community	Energy	IAQ/Health	Resources	Water	Notes
TBD	**12. Use Environmentally Preferable Materials for 70% of Non-Plant Landscape Elements and Fencing** A) FSC-Certified Wood, B) Reclaimed, C) Rapidly Renewable, D) Recycled-Content E) Finger-Jointed or F) Local	0				1		
TBD	**13. Reduce Light Pollution by Shielding Fixtures and Directing Light Downward**	0	1					
	Total Points Available in Landscape = 35	6						
D. STRUCTURAL FRAME & BUILDING ENVELOPE			Possible Points					
	1. Apply Optimal Value Engineering							
TBD	a. Place Joists, Rafters and Studs at 24-Inch On Center	0				3		
No	b. Door and Window Headers are Sized for Load	0				1		
TBD	c. Use Only Cripple Studs Required for Load	0				1		
	2. Construction Material Efficiencies							
TBD	a. Wall and Floor Assemblies (Excluding Solid Wall Assemblies) are Delivered Panelized from Supplier (Minimum of 80% Square Feet)	0				2		
TBD	b. Modular Components Are Delivered Assembled to the Project (Minimum 25%)	0				6		
	3. Use Engineered Lumber							
Yes	a. Engineered Beams and Headers	1				1		
No	b. Wood I-Joists or Web Trusses for Floors	0				1		
TBD	c. Engineered Lumber for Roof Rafters	0				1		
TBD	d. Engineered or Finger-Jointed Studs for Vertical Applications	0				1		
No	e. Oriented Strand Board for Subfloor	0				1		
Yes	f. Oriented Strand Board for Wall and Roof Sheathing	1				1		
TBD	**4. Insulated Headers**	0		1				
	5. Use FSC-Certified Wood							
TBD	a. Dimensional Lumber, Studs and Timber (Minimum 40%)	0				6		
TBD	b. Panel Products (Minimum 40%)	0				3		
	6. Use Solid Wall Systems (Includes SIPS, ICFs, & Any Non-Stick Frame Assembly)							
TBD	a. Floors	0				2		
TBD	b. Walls	0				2		
TBD	c. Roofs	0				1		
TBD	**7. Energy Heels on Roof Trusses** (75% of Attic Insulation Height at Outside Edge of Exterior Wall)	0		1				
	8. Install Overhangs and Gutters							
TBD	a. Minimum 16-Inch Overhangs and Gutters	0				1		
TBD	b. Minimum 24-Inch Overhangs and Gutters	0		1				
	9. Reduce Pollution Entering the Home from the Garage [*This credit is a requirement associated with J4: EPA IAP]							
TBD	a. Install Garage Exhaust Fan OR Build a Detached Garage	0			1			
TBD	b. Tightly Seal the Air Barrier between Garage and Living Area (Performance Test Required)	0			1			
	Total Points Available in Structural Frame and Building Envelope = 39	2						
E. EXTERIOR			Possible Points					
TBD	**1. Use Environmentally Preferable Decking**	0				2		
TBD	**2. Flashing Installation Techniques Specified and Third-Party Verified** [*This credit is a requirement associated with J4: EPA IAP]	0				1		

WAGNER DRAFT		Points Achieved	Community	Energy	IAQ/Health	Resources	Water	Notes
TBD	**3. Install a Rain Screen Wall System**	0				2		
Yes	**4. Use Durable and Non-Combustible Siding Materials**	1				1		
Yes	**5. Use Durable and Fire Resistant Roofing Materials or Assembly**	2				2		
	Total Points Available in Exterior = 8	3						
F. INSULATION			Possible Points					
	1. Install Insulation with 75% Recycled Content							
Yes	a. Walls	1				1		
Yes	b. Ceilings	1				1		
TBD	c. Floors	0				1		
	Total Points Available in Insulation = 3	2						
G. PLUMBING			Possible Points					
	1. Distribute Domestic Hot Water Efficiently (Max. 5 points, G1a. is a Prerequisite for G1b-e)							
Yes	a. Insulate All Hot Water Pipes [*This credit is a requirement associated with J4: EPA IAP]	2		1			1	
TBD	b. Use Engineered Parallel Plumbing	0					1	
TBD	c. Use Engineered Parallel Plumbing with Demand Controlled Circulation Loop(s)	0					1	
TBD	d. Use Traditional Trunk, Branch and Twig Plumbing with Demand Controlled Circulation Loop(s)	0		1			2	
TBD	e. Use Central Core Plumbing	0		1		1	1	
	2. Water Efficient Fixtures							
Yes	a. High Efficiency Showerheads ≤2.0 Gallons Per Minute (gpm) at 80 psi. (Multiple showerheads shall not exceed maximum flow rates) (CALGreen code if applicable)	3					3	
Yes	b. High Efficiency Bathroom Faucets ≤ 1.5 gpm at 60psi (CALGreen code)	1					1	
Yes	c. High Efficiency Kitchen and Utility Faucets ≤1.8 gpm (CALGreen code if applicable)	1					1	
Yes	**3. Install Only High Efficiency Toilets (Dual-Flush or ≤1.28 Gallons Per Flush (gpf))** (CALGreen code if applicable)	2					2	
	Total Points Available in Plumbing = 12	9						
H. HEATING, VENTILATION & AIR CONDITIONING			Possible Points					
	1. Properly Design HVAC System and Perform Diagnostic Testing							
Yes	a. Design and Install HVAC System to ACCA Manual J, D, and S Recommendations (CALGreen code if applicable) [*This credit is a requirement associated with J4: EPA IAP]	4		4				
TBD	b. Test Total Supply Air Flow Rates [*This credit is a requirement associated with J4: EPA IAP]	0		1				
TBD	c. Third Party Testing of Mechanical Ventilation Rates for IAQ (meet ASHRAE 62.2)	0		1				
	2. Install Sealed Combustion Units [*This credit is a requirement associated with J4: EPA IAP]							
Yes	a. Furnaces	2			2			
No	b. Water Heaters	0			2			
TBD	**3. Install High Performing Zoned Hydronic Radiant Heating**	0		1	1			
Yes	**4. Install High Efficiency Air Conditioning with Environmentally Preferable Refrigerants**	1	1					
	5. Design and Install Effective Ductwork							
TBD	a. Install HVAC Unit and Ductwork within Conditioned Space	0		1				
Yes	b. Use Duct Mastic on All Duct Joints and Seams [*This credit is a requirement associated with J4: EPA IAP]	1		1				

WAGNER DRAFT		Points Achieved	Community	Energy	IAQ/Health	Resources	Water	Notes
TBD	c. Pressure Relieve the Ductwork System [*This credit is a requirement associated with J4: EPA IAP]	0		1				
Yes	**6. Install High Efficiency HVAC Filter (MERV 6+)** [*This credit is a requirement associated with J4: EPA IAP]	1			1			
Yes	**7. No Fireplace OR Install Sealed Gas Fireplace(s) with Efficiency Rating >60% using CSA Standards** [*This credit is a requirement associated with J4: EPA IAP]	1			1			
Yes	**8. Install ENERGY STAR Bathroom Fans on Timer or Humidistat** (CALGreen code if applicable)	1			1			
	9. Install Mechanical Ventilation System for Cooling (Max. 4 Points)							
TBD	a. Install ENERGY STAR Ceiling Fans & Light Kits in Living Areas & All Bedrooms	0		1				
Yes	b. Install Whole House Fan (Credit Not Available if H9c Chosen) (CALGreen code if applicable)	1		1				
TBD	c. Automatically Controlled Integrated System with Variable Speed Control	0		3				
	10. Advanced Mechanical Ventilation for IAQ							
Yes	a. *Required:* Compliance with ASHRAE 62.2 Mechanical Ventilation Standards (as adopted in Title 24 Part 6) [*This credit is a requirement associated with J4: EPA IAP]	Y			R			
Yes	b. Advanced Ventilation Practices (Continuous Operation, Sone Limit, Minimum Efficiency, Minimum Ventilation Rate, Homeowner Instructions)	1			1			
TBD	c. Outdoor Air Ducted to Bedroom and Living Areas of Home	0			2			
Yes	**11. Install Carbon Monoxide Alarm(s)** (or No Combustion Appliances in Living Space and No Attached Garage) [*This credit is a requirement associated with J4: EPA IAP]	1			1			
	Total Points Available in Heating, Ventilation and Air Conditioning = 27	**14**						
I. RENEWABLE ENERGY			Possible Points					
TBD	**1. Pre-Plumb for Solar Water Heating**	0				1		
TBD	**2. Install Wiring Conduit for Future Photovoltaic Installation & Provide 200 ft² of South-Facing Roof**	0				1		
0.0%	**3. Offset Energy Consumption with Onsite Renewable Generation (Solar PV, Solar Thermal, Wind)** *Enter % total energy consumption offset, 1 point per 4% offset*	0		25				
	Total Available Points in Renewable Energy = 27	**0**						
J. BUILDING PERFORMANCE			Possible Points					
	1. Building Envelope Diagnostic Evaluations							
Yes	a. Verify Quality of Insulation Installation & Thermal Bypass Checklist before Drywall [*This credit is a requirement associated with J4: EPA IAP]	1		1				
Yes	b. House Passes Blower Door Test [*This credit is a requirement associated with J4: EPA IAP]	1		1				
Yes	c. Blower Door Results are Max 2.5 ACH_{50} for Unbalanced Systems (Supply or Exhaust) or Max 1.0 ACH_{50} for Balanced Systems (2 Total Points for J1b. and J1c.)	1		1				
TBD	d. House Passes Combustion Safety Backdraft Test	0			1			
15%	**2. *Required:* Building Performance Exceeds Title 24 (Minimum 15%)** *(Enter the Percent Better Than Title 24, Points for Every 1% Better Than Title 24)*	30		≥30				
TBD	**3. Design and Build Near Zero Energy Homes** *(Enter number of points, minimum of 2 and maximum of 6 points)*	0		6				

WAGNER DRAFT		Points Achieved	Community	Energy	IAQ/Health	Resources	Water	Notes
TBD	**4. Obtain EPA Indoor airPlus Certification** *(Total 42 points, not including Title 24 performance; read comment)*	0			2			
TBD	**5. Title 24 Prepared and Signed by a CABEC Certified Energy Plans Examiner (CEPE)**	0		1				
	6. Participation in Utility Program with Third Party Plan Review							
TBD	a. Energy Efficiency Program [*This credit is a requirement associated with J4: EPA IAP]	0		1				
TBD	b. Renewable Energy Program with Min. 30% Better Than Title 24 (High Performing Home)	0		1				
	Total Available Points in Building Performance = 45+	33						
K. FINISHES			Possible Points					
TBD	**1. Design Entryways to Reduce Tracked-In Contaminants**	0			1			
	2. Use Low-VOC or Zero-VOC Paint (Maximum 3 Points)							
Yes	a. Low-VOC Interior Wall/Ceiling Paints (CALGreen code if applicable) (<50 Grams Per Liter (gpl) VOCs Regardless of Sheen) [*This credit is a requirement associated with J4: EPA IAP]	1			1			
TBD	b. Zero-VOC: Interior Wall/Ceiling Paints (<5 gpl VOCs Regardless of Sheen)	0			2			
Yes	**3. Use Low-VOC Coatings that Meet SCAQMD Rule 1113** (CALGreen code if applicable) **[*This credit is a requirement associated with J4: EPA IAP]**	2			2			
Yes	**4. Use Low-VOC Caulks, Construction Adhesives and Sealants that Meet SCAQMD Rule 1168** (CALGreen code if applicable)	2			2			
TBD	**5. Use Recycled-Content Paint**	0				1		
	6. Use Environmentally Preferable Materials for Interior Finish A) FSC-Certified Wood, B) Reclaimed, C) Rapidly Renewable, D) Recycled-Content or E) Finger-Jointed F) Local							
≥50%	a. Cabinets (50% Minimum)	2				3		
TBD	b. Interior Trim (50% Minimum)	0				2		
TBD	c. Shelving (50% Minimum)	0				2		
TBD	d. Doors (50% Minimum)	0				2		
TBD	e. Countertops (50% Minimum)	0				2		
Yes	**7. Reduce Formaldehyde in Interior Finish – Meet Current CARB Airborne Toxic Control Measure (ATCM) for Composite Wood Formaldehyde Limits by Mandatory Compliance Dates** (CALGreen code if applicable) [*This credit is a requirement associated with J4: EPA IAP]	Y			0			
	8. Reduce Formaldehyde in Interior Finish - Exceed Current CARB ATCM for Composite Wood Formaldehyde Limits Prior to Mandatory Compliance Dates							
TBD	a. Doors (90% Minimum)	0			1			
TBD	b. Cabinets & Countertops (90% Minimum)	0			2			
TBD	c. Interior Trim and Shelving (90% Minimum)	0			1			
TBD	**9. After Installation of Finishes, Test of Indoor Air Shows Formaldehyde Level <27ppb**	0			3			
	Total Available Points in Finishes = 27	7						
L. FLOORING			Possible Points					

WAGNER DRAFT		Points Achieved	Community	Energy	IAQ/Health	Resources	Water	Notes
TBD	**1. Use Environmentally Preferable Flooring (Minimum 15% Floor Area)** A) FSC-Certified Wood, B) Reclaimed or Refinished, C) Rapidly Renewable, D) Recycled-Content, E) Exposed Concrete, F) Local. *Flooring Adhesives Must Meet SCAQMD Rule 1168 for VOCs.*	0				4		
TBD	**2. Thermal Mass Floors (Minimum 50%)**	0		1				
TBD	**3. Low Emitting Flooring (Section 01350, CRI Green Label Plus, Floorscore** [*This credit is a requirement associated with J4: EPA IAP]	0			3			
Yes	**4. All carpet and 50% of Resilient Flooring is low emitting.** (CALGreen code if applicable)	Y						
	Total Available Points in Flooring = 8	0						
M. APPLIANCES AND LIGHTING			Possible Points					
Yes	**1. Install ENERGY STAR Dishwasher (Must Meet Current Specifications)**	2		1			1	
	2. Install ENERGY STAR Clothes Washer							
TBD	a. Meets ENERGY STAR and CEE Tier 2 Requirements (Modified Energy Factor 2.0, Water Factor 6.0 or less)	0		1			2	
TBD	b. Meets ENERGY STAR and CEE Tier 3 Requirements (Modified Energy Factor 2.2, Water Factor 4.5 or less)	0					2	
	3. Install ENERGY STAR Refrigerator							
TBD	a. ENERGY STAR Qualified & < 25 Cubic Feet Capacity	0		1				
TBD	b. ENERGY STAR Qualified & < 20 Cubic Feet Capacity	0		1				
	4. Install Built-In Recycling Center or Composting Center							
TBD	a. Built-In Recycling Center	0				1		
TBD	b. Built-In Composting Center	0				1		
	5. Install High-Efficacy Lighting and Design Lighting System							
TBD	a. Install High-Efficacy Lighting	0		1				
TBD	b. Install a Lighting System to IESNA Footcandle Standards or Hire Lighting Consultant	0		1				
	Total Available Points in Appliances and Lighting = 13	2						
N. OTHER			Possible Points					
Yes	**1. *Required:* Incorporate GreenPoint Rated Checklist in Blueprints** [*This credit is a requirement associated with J4: EPA IAP]	Y				R		
TBD	**2. Pre-Construction Kick-Off Meeting with Rater and Subs**	0	1					
TBD	**3. Homebuilder's Management Staff are Certified Green Building Professionals**	0	1					
	4. Develop Homeowner Education							
Yes	a. Develop Homeowner Manual of Green Features/Benefits (CALGreen code if applicable) [*This credit is a requirement associated with J4: EPA IAP]	2		1			1	
TBD	b. Conduct Educational Walkthroughs (Prerequisite is N4a) [*This credit is a requirement associated with J4: EPA IAP]	0			1			
TBD	**5. Install a Home System Monitor OR Participate in a Time-of-Use Pricing Program**	0		1				
	Total Available Points in Other = 6	2						
O. COMMUNITY DESIGN & PLANNING			Possible Points					
	1. Develop Infill Sites							
TBD	a. Project is an Urban Infill Development	0	1			1		
TBD	b. Home(s)/Development is Located within 1/2 Mile of a Major Transit Stop	0	2					
TBD	**2. Build on Designated Brownfield Site**	0	3					

WAGNER DRAFT		Points Achieved	Community	Energy	IAQ/Health	Resources	Water	Notes
	3. Cluster Homes & Keep Size in Check							
TBD	a. Cluster Homes for Land Preservation	0	1			1		
TBD	b. Conserve Resources by Increasing Density (10 Units per Acre or Greater)	0	2			2		
	c. Home Size Efficiency	0				9		
	i. Enter Average Unit Square Footage							
	ii. Enter Average Number of Bedrooms/Unit							
	4. Design for Walking & Bicycling							
	a. Site Has Pedestrian Access Within 1/2 Mile of Community Services: TIER 1: Enter Number of Services Within 1/2 Mile 1) Day Care 2) Community Center 3) Public Park 4) Drug Store 5) Restaurant 6) School 7) Library 8) Farmer's Market 9) After School Programs 10) Convenience Store Where Meat & Produce are Sold							
	TIER 2: Enter Number of Services Within 1/2 Mile 1) Bank 2) Place of Worship 3) Laundry/Cleaners 4) Hardware 5) Theater/Entertainment 6) Fitness/Gym 7) Post Office 8) Senior Care Facility 9) Medical/Dental 10) Hair Care 11) Commercial Office or Major Employer 12) Full Scale Supermarket							
	i. 5 Services Listed Above (Tier 2 Services Count as 1/2 Service Value)	0	1					
	ii. 10 Services Listed Above (Tier 2 Services Count as 1/2 Service Value)	0	1					
TBD	b. Development is Connected with A Dedicated Pedestrian Pathway to Places of Recreational Interest Within 1/4 mile	0	1					
TBD	c. Install Traffic Calming Strategies (Minimum of Two): - Designated Bicycle Lanes are Present on Roadways; - Ten-Foot Vehicle Travel Lanes; - Street Crossings Closest to Site are Located Less Than 300 Feet Apart; - Streets Have Rumble Strips, Bulbouts, Raised Crosswalks or Refuge Islands	0	2					
	5. Design for Safety & Social Gathering							
No	a. All Home Front Entrances Have Views from the Inside to Outside Callers	0	1					
TBD	b. All Home Front Entrances Can be Seen from the Street and/or from Other Front Doors	0	1					
TBD	c. Orient Porches (min. 100sf) to Streets and Public Spaces	0	1					
TBD	d. Development Includes a Social Gathering Space	0	1					
	6. Design for Diverse Households (6a. is a Prerequisite for 6b. and 6c.)							
TBD	a. All Homes Have At Least One Zero-Step Entrance	0	1					
TBD	b. All Main Floor Interior Doors & Passageways Have a Minimum 32-Inch Clear Passage Space	0	1					
TBD	c. Locate Half-Bath on the Ground Floor	0	1					
TBD	d. Provide Full-Function Independent Rental Unit	0	1					
	Total Achievable Points in Community Design & Planning = 35	0						
P. INNOVATION			Possible Points					
	A. Site							
	1. Stormwater Control: Prescriptive Path (Maximum of 3 Points, Mutually Exclusive with PA2.)							
TBD	a. Use Permeable Paving for 25% of Driveways, Patios and Walkways	0	1					
Yes	b. Install Bio-Retention and Filtration Features	2	2					
TBD	c. Route Downspout Through Permeable Landscape	0	1					
TBD	d. Use Non-Leaching Roofing Materials	0	1					
TBD	e. Include Smart Street/Driveway Design	0	1					

WAGNER DRAFT		Points Achieved	Community	Energy	IAQ/Health	Resources	Water	Notes
TBD	2. Stormwater Control: Performance Path (Mutually Exclusive with PA1): Perform Soil Percolation Test and Capture and Treat 85% of Total Annual Runoff	0	3					
	C. Landscape							
TBD	1. Meet Local Landscape Program Requirement	0					2	
	D. Structural Frame & Building Envelope							
	1. Design, Build and Maintain Structural Pest and Rot Controls							
TBD	a. Locate All Wood (Siding, Trim, Structure) At Least 12" Above Soil	0				1		
TBD	b. All Wood Framing 3 Feet from the Foundation is Treated with Borates (or Use Factory-Impregnated Materials) OR Walls are Not Made of Wood	0				1		
TBD	2. Use Moisture Resistant Materials in Wet Areas: Kitchen, Bathrooms, Utility Rooms, and Basements [*This credit is a requirement associated with J4: EPA IAP]	0			1	1		
	E. Exterior							
TBD	1. Vegetated Roof (Minimum 25%)	0	2	2				
	G. Plumbing							
TBD	1. Greywater Pre-Plumbing (Includes Washing Machine at Minimum)	0					1	
TBD	2. Greywater System Operational (Includes Washing Machine at Minimum)	0					2	
TBD	3. Innovative Wastewater Technology (Constructed Wetland, Sand Filter, Aerobic System)	0					1	
TBD	4. Composting or Waterless Toilet	0					2	
TBD	5. Install Drain Water Heat-Recovery System	0		1				
TBD	6. Install a Hot Water Desuperheater	0		2				
	H. Heating, Ventilation, and Air Conditioning							
TBD	1. Humidity Control Systems (Only in California Humid/Marine Climate Zones 1,3,5,6,7) [*This credit is a requirement associated with J4: EPA IAP]	0			1			
TBD	2. Design HVAC System to Manual T for Register Design	0		1				
	K. Finishes							
TBD	1. Materials Meet SMaRT Criteria *(Select the number of points, up to 5 points)*	0				5		
	N. Other							
TBD	1. Detailed Durability Plan and Third-Party Verification of Plan Implementation	0				2		
	2. Educational Signage of Project's Green Features							
TBD	a. Promotion of Green Building Practices	0	1					
TBD	b. Installed Green Building Educational Signage	0	1					
	3. Innovation: List innovative measures that meet green building objectives. Enter in the number of points in each category for a maximum of 4 points for the measure in the blue cells. Points achieved column will be automatically fill in based on the sum of the points in each category. Points and measures will be evaluated by Build It Green.							
TBD	Innovation: Enter up to 4 Points at right. Enter description here	0						
TBD	Innovation: Enter up to 4 Points at right. Enter description here	0						
TBD	Innovation: Enter up to 4 Points at right. Enter description here	0						
TBD	Innovation: Enter up to 4 Points at right. Enter description here	0						
TBD	Innovation: Enter up to 4 Points at right. Enter description here	0						
	Total Achievable Points in Innovation = 33+	2						
Q. CALIFORNIA CALGreen CODE			Possible Points					
Yes	Home meets all applicable CAL Green measures listed in above Sections A - P of the GreenPoint Rated checklist.	Y	R					

WAGNER DRAFT		Points Achieved	Community	Energy	IAQ/Health	Resources	Water	Notes
	The following measures are mandatory in the CALGreen code and do not earn points in the GreenPoint Rated Checklist, but have been included in the Checklist for the convenience of jurisdictions. *The GreenPoint Rater is not a code enforcement official. The measures in this section may be verified by the GreenPoint Rater at their own discretion and/or discretion of the building official*							
Yes	1. CALGreen 4.106.2 Storm water management during construction.	Y						
Yes	2. CALGreen 4.106.3 Design for surface water drainage away from buildings.	Y						
TBD	3. CALGreen 4.303.1 As an alternative to perscriptive compliance, a 20% reduction in baseline water use shall be demonstrated through calculation	N						
Yes	4. CALGreen 4.406.1 Joints and openings. Annular spaces around pipes, electric cables, conduits, or other openings in plates at exterior walls shall be protected	Y						
Yes	5. CALGreen4.503.1 Gas fireplace shall be a direct-vent sealed-combustion type. Woodstove or pellet stove shall comply with US EPA Phase II emission limits	Y						
Yes	6. CALGreen 4.505.2 Vapor retarder and capillary break is installed at slab on grade foundations.	Y						
Yes	7. CALGreen 4.505.3 19% moisture content of building framing materials	Y						
Yes	8. CALGreen 702.1 HVAC system installers are trained and certified in the proper installation of HVAC systems.	Y						
	Total Achievable Points in California Green Code = 0	0						
Summary								
	Total Available Points in Specific Categories		35	96+	44	110	56	
	Minimum Points Required in Specific Categories	50	0	30	5	6	9	
	Total Points Achieved	87	3	42	13	14	15	

Project has met all recommended minimum requirements

Total project Score of At Least 50 Points
Essential measures:
Min. 50% waste diversion by weight
Meet Compliance with ASHRAE 62.2 Mechanical Ventilation Standards
Min. 15% above Title 24
Min. Incorporate GreenPoint Rated Checklist into blueprints
Minimum points in specific categories:
Energy (30 points)
IAQ/Health (5 points)
Resources (6 points)
Water (9 points)

EXHIBIT G

HISTORIC ARCHITECTURE EVALUATION REPORT

4202 STANLEY BOULEVARD
CITY OF PLEASANTON, ALAMEDA COUNTY, CALIFORNIA

FOR

PONDEROSA HOMES II
6130 Stoneridge Mall Road, Suite 185
Pleasanton, CA 94588

ATTN: Mr. Jeff Schroeder

BY

Ward Hill, M.A.
Consulting Architectural Historian
3124 Octavia Street
San Francisco, CA 94123

PUD - 97

SEPTEMBER 2012

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1.0 INTRODUCTION

The purpose of this report is to provide a preliminary historic resource evaluation of the two unit residential building located at 4202 Stanley Boulevard, Pleasanton, California (APN 946-1691-1-1; United States Geological Survey [hereafter USGS], USGS Dublin, Calif. 1980 and Livermore, Calif. 1980 7.5' quadrangle topographic maps, T 3S R 1E, unsectioned) [Figs. 1-3]. Residential housing is proposed for the parcel.

The building was originally a single-family house with a ca. 1960s second floor unit added in remodeled attic space. The original house, according to County Assessor records, was constructed in 1912. Two small buildings to the south of the main house were constructed ca. 1945. None of the buildings on the parcel have been previously listed in or determined eligible for the National Register of Historic Places or the California Register of Historical Resources.

Based the research and field review completed for this report, the buildings and related landscape features at 4202 Stanley Boulevard do not appear to be eligible for the California Register of Historical Resources because they are not significant under Criteria 1, 2 or 3 and they lack historic integrity.

2.0 HISTORICAL OVERVIEW

2.1 PLEASANTON TOWNSHIP - GENERAL BACKGROUND

The first European settlement in the East Bay was Mission San Jose, founded in 1797. The area that is today Alameda County was under the control of Mission San Jose, and the mission's cattle would have grazed in the Amador Valley. The Spanish government made the first private land grant in Alameda County, an area that is today the cities of Albany, Berkeley, Emeryville, Oakland and part of San Leandro, in 1820 to Luis Maria Peralta. After Mexico seceded from Spain in April 1822, followed by the secularization of the missions in 1833, most of the Bay Area was divided up into private ranchos. The Mexican land grants in the Amador/Livermore valley included *Rancho San Ramon* in 1835 to J. M. Amador; *Rancho El Valle de San Jose* in 1839 to Augustin and Antonio Pico, and Juan Pablo Bernal; *Rancho Santa Rita* in 1839 to Jose Pacheco; and *Rancho Las Positas* in 1839 to Robert Livermore and Jose Noriega (Halley 1876:492).

In 1848, California became a United States territory as a result of the Treaty of Guadalupe Hidalgo which ended the war with Mexico. California was not formally admitted as a state until 1850. After California was admitted as a state, Contra Costa County, one of the original 27 counties created by the California legislature, included what is today Contra Costa County and Alameda County. In 1853, Alameda County was created from the western and southern sections of Contra Costa County and a portion of what was originally Santa Clara County south of Alameda Creek. Soon after Alameda County was formed, it was subdivided into six townships, the largest of which was Murray Township, covering the Amador/Livermore valley, over one third of the county's area.

The Gold Rush of 1848 brought a massive influx of immigrants to California from all parts of the world. California's 1848 population of less than 14,000 (exclusive of Native Americans) increase to 224,000 in four years. As many of these new immigrants became discouraged with gold mining, they sought a more stable livelihood as farmers and ranchers. The new increase in population als

created a domestic market for agricultural products that had never existed before. Once the owners of the Mexican ranchos obtained clear title to their land, they typically sold off parcels to the newcomers who started farms and ranches. Murray Township's isolation from San Francisco Bay delayed the development of agriculture in the area. The main transportation for agricultural products before the railroad was a series of landings along San Francisco Bay providing the East Bay with water access to outside markets (Halley 1876:482). Consequently, although the ranchos in what became Murray Township were subdivided in the 1850s, the American ranches in this area were still several thousand acres, and often the land was owned by non-residents and leased for grazing or cultivation of hay and grain (Thompson & West 1878: 25).

Between 1860 and 1890, wheat was by far California's most important grain crop (Hilkert & Lewis 1984:1). California wheat did not need the binding and curing of Midwest wheat, so it could be shipped long distances upon being harvested. By the 1860s, wheat became the most important agricultural product in the western section of Murray Township. In 1884, one author noted that "immense quantities of wheat were raised" near Pleasanton (Baker 1912:444). Wheat farming declined in California by the 1890s because yields dropped from not rotating crops and the development of competing wheat growing areas like Australia and Argentina (Hilbert and Lewis 1984:2). The development of irrigation and new transportation systems in California also led to wheat being replaced by more lucrative crops, like fruit and vegetables.

After the Central Pacific Railroad arrived in Murray Township in 1869, the economy changed over the next two decades from livestock ranching to the cultivation of grains, fruits and vegetables. The completion of the transcontinental railroad in 1869 opened a tremendous new market for California fruit and other agricultural products. In almost every area in the county served by adequate rail transportation the large ranches were subdivided into smaller holdings for more specialized crops. A typical family farm of this era practicing mixed agriculture focused on wheat, barley and hay, in addition to producing garden vegetables and dairy products. The development of the canning industry, creating new methods of preserving and storing foods for later consumption, also stimulated the cultivation of fruit and vegetables in California (Braznell 1982:11-21).

The town of Pleasanton was laid out in 1869 also as a direct result of the arrival of the railroad[1]. The precursor to Pleasanton was a small settlement named Alisal founded in 1857 when Duerr & Nusbaumer opened a store in John Kottinger's house. Kottinger, who immigrated from Austria in 1851, married into the Bernal family and operated a livestock ranch on a portion of the Bernal rancho (Wood 1883:478). In addition to the general store operated in Kottinger's house, by 1864, Alisal also had a hotel and school (McCann & Hinkel 1937:195). The center of town moved south to the train station when the railroad arrived. The original town plat near the station was on land owned by Kottinger and Joshua Neal, who had also married into the Bernal family and had been the majordomo for Robert Livermore's nearby Rancho Los Positas (Halley 1876:502). Kottinger's plat for Pleasanton was filed on September 20, 1869. By 1876, the town of Pleasanton had a couple of hotels, "some good stores," post-office, express-office, and grain warehouses (Halley 1876:502). By the late 1870s, the population had increased to between 500 to 600, while Murray Township's population was about 4,000 (Thompson & West 1878:25).

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1. The town was named for a General Pleasanton who served with General J. C. Fremont in his Missouri campaign (Wood 1883:478). Pleasanton was reportedly on the first train to arrive in Pleasanton in 1869.

Pleasanton continued as a small farm town until the mid-20th century. The town incorporated in 1896, and in 1904, Pleasanton Township was created from the western section of Murray Township. Pleasanton's population of about 1,200 in the early 20th century did not increase significantly until after World War II. During the period before the war, the production of a variety of agricultural products increased in the surrounding area. Pleasanton became an important area for growing tomatoes, hops and sugar beets (Anonymous 1910:1). In 1932, packing houses in Pleasanton shipped grapes, tomatoes, cauliflower, squash and other vegetables; hay and grains were still important products in the area which had the only grain elevator in Alameda County (Davis 1932:165). Dairying became increasingly important by the 1920s, and a number of the largest dairies in Alameda County (e.g., Hansen & Orloff and Meadowlark) were in the Pleasanton area (Amaral 1944:134).

With a population of 3,000, Pleasanton was the smallest incorporated city in Alameda County in 1954. The opening of Parks Air Force Base and the Livermore atomic research laboratory during World War II began a period of growth in the Pleasanton area that transformed it from a small agricultural town into suburban residential/office community (Anonymous 1954:4). New residential subdivisions were built in the Pleasanton area starting in the 1950s as improvements to State Highway 50 made commuting easier to Oakland or other cities of the East Bay. During the 1970s and 1980s, Pleasanton became one of the fastest growing areas in the Bay Area as many new subdivisions, two large business parks and a regional shopping center were built in the area. Pleasanton, now a major suburban office/residential community at the southern end of the "680 Corridor," has a population of over 55,000.

2.2 4202 STANLEY BOULEVARD

During the 19th century the parcel at 4202 Stanley Boulevard, Pleasanton was part of the 1,167 acre Joseph F. Black ranch that extended north into what is now the City of Dublin. The Black Ranch was subdivided into smaller parcels beginning in the 1890s. The Stanley Boulevard property was Lot 5 of the Lilienthal Addition #3 to the Town of Pleasanton, a 21-lot subdivision filed March 13, 1905. E.R. Lilienthal initially sold Lot 5 to Arthur Platt in 1910. The subdivision included one to two acre lots along what was then known as the Pleasanton-Livermore Road and adjacent to the *Arroyo del Valle*. Platt sold the lot to Nelson L. Wood who in turn sold it to Frederick and Emma Hall also in 1910. The Halls likely constructed the 1912 house extant today. According to 1920 and 1930 U.S. Census Records, Frederick Hall was a hay and grain trader. In his *History of the City of Pleasanton*, Hagemann noted that a Mr. Hall constructed one of three warehouses extant in the town by 1900 (Hagemann 1993:42). The 1910 U.S. Census notes that Emma and Frederick Hall had four daughters and two sons. Born in 1862, Frederick Hall was 47 in 1910 and Emma was 42. By 1920 the Halls had three children still living with them: Ernest, 17, Burford, 14 and Merriel, 13. In 1920 the Halls sold 4202 Stanley Boulevard to Marjorie and Frederick Clark.

The Clarks only lived at the address for a few years before they sold the property in 1924 to Alice A. and William Fothergill, who was then 58 years old and a telegraph operator for a railroad (1920 U.S. Census). Mrs. Fothergill was the proprietor of a floral shop in Pleasanton (1940 U.S. Census). Alice Fothergill's estate transferred the Stanley Boulevard property to her son William M. Fothergill in 1944. Fothergill sold the property in 1944 to Alex Bowker, a

general contractor, who likely started the mobile home park on the property. Bowker sold the property to Beatrice and Joseph Williams who sold it in 1946 to Willie and John Parker who operated a photography studio in Richmond, California. Apparently the property passed through a number of owners over the ensuing decades and the units in the main house have been occupied by tenants over the years. Debs and Mary J. Ozbirn, who purchased the property in 1980 and owned into the 1990s, lived in San Leandro.

3.0 RESEARCH AND FIELD METHODS

Ward Hill (M.A. Architectural History, 1982, University of Virginia) surveyed the structures at 4202 Stanley Boulevard on January 18, 2012. The exterior and interior of the Bungalow Style house and the related outbuildings were examined and photographed in the field. This inspection included preparing written descriptions of the buildings. During the field survey estimated dates of construction of the buildings were also noted based on stylistic analysis, use of materials, construction techniques, and visual character. The description noted major deterioration, alterations of use and appearance. The more recent buildings on the site were also photographed and referenced on the attached DPR 523 forms. Historic research on the subject property was conducted at the Pleasanton Main Library, Genealogical Collection; the Oakland History Room, Oakland Main Library, Oakland; and the Natural Resources Library Map Room, University of California at Berkeley.

4.0. DESCRIPTION

The two-story, two-unit residential, Bungalow Style building is set back about 50 feet from the street behind an asphalt covered parking area. The original house is now located in a mobile home park that includes two additional ca. 1945 buildings in close proximity to the main residence: a storage building and a small residence with a laundry room in the back. In addition to the buildings a number of mobile homes and various mature trees are still extant on the flat 2.09 acre lot (approximately 200 by 400 feet).

The front façade of the house faces north toward Stanley Boulevard across an asphalt covered parking area. A driveway on the east side of the original house loops through the length of the parcel. The building has a rectangular plan with a rear utility room extension and a projecting angled bay window at the northwest corner. Structurally the building is stud-wall wood-frame construction with a perimeter concrete foundation. The building has primarily one over one, wood-sash, double-hung windows. A large casement window on the east may be a later alteration. An angled bay at the northwest corner has four double-hung windows. The building has a hipped roof covered with asphalt shingles and a cross gable roof over the front entrance porch. The porch gable has cornice brackets and a gable brace under the roof peak. Round columns support the porch room. The columns are set on a low wall around the perimeter of the recessed entrance porch on the east side of the front façade. A stair constructed of concrete block with a wrought iron railing leads up to the entrance porch. The rear (south) façade has a rear porch with a shed roof.

The ca. 1960s remodeling of the second floor attic space into a second dwelling unit involved several major alterations. A separate stairway constructed of wood with a brick foundation on the east façade leads to the entrance door to the second floor unit. The door and stairway are later

alterations. Large dormers were added to the east, west and south slopes of the roof to provide additional space for the second floor unit (which has a living area, bedroom, kitchen and bathroom). The first floor of the original house has two bedrooms on the east and the main living areas (divided into two rooms) on the west. The walls have modern textured plaster and "cottage cheese" acoustical ceiling but the original baseboards, door and window molding are extant. A recently remodeled kitchen and bathroom are at the back of the house on the south.

5.0 THE CALIFORNIA REGISTER OF HISTORICAL RESOURCES

In 1992, Assembly Bill 2881 added Section 21084.1 to the Public Resources Code (i.e. the CEQA statute), which providing more specific guidelines for identifying historic resources during the CEQA process:

> A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. For purposes of this section, an historical resource is a resource listed in, or determined eligible for listing in, the California Register of Historical Resources.

Consequently, under Section 21084.1, an historic resource eligible for the California Register would by definition be an historic resource for purposes of CEQA compliance. The Final Regulations for nominating resources to the California Register were published in January, 1998. Under the regulations, a number of historic resources are automatically eligible for the California Register if they have been listed in and determined eligible for the National Register of Historic Places or he California Historic Landmarks program (landmarks 770 or higher). Historic resources included in local inventories or designated under local ordinances can also be presumed eligible if they meet certain criteria.

In order for a resource to be eligible for the California Register, it must satisfy all of the following three criteria:

1) meet one or more of the 4 criteria of significance:
    a. the resource is associated with events or patterns of events that have made a significant contribution to the broad patterns of local and regional history.
    b. the resource is associated with the lives of persons important to the nation or to California's past.
    c. the resource embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.
    d. the resource has the potential to yield information important to the prehistory or history of the state or the nation (this criteria applies primarily to archaeological sites).
2) the resource retains historic integrity (defined below); and

3) it is fifty years old or older (except for rare cases of structures of a higher or "exceptional level of significance").

The California Register regulations define "integrity" as "the authenticity of a property's physical identity, evidenced by the survival of characteristics that existed during the property's period of significance." That is, it must retain enough of its historic character or appearance to be recognizable as an historical resource. California Register regulations specify that integrity is a quality that applies to historic resources in seven ways: location, design, setting, materials, workmanship, feeling and association. A property must retain most of these qualities to possess integrity.

6.0 EVALUATION

The original house at 4202 Stanley Boulevard has not been designated or determined for any local, state, or federal historic resource listings. The parcel is adjacent to the Little Stanley Boulevard Residential Neighborhood included in the City of Pleasanton's Historic eighborhoods and Structures List (Pleasanton 2005 General Plan). The historic integrity of the building has been somewhat compromised by the remodeling that created a second unit in the attic space. The remodeling included both the addition of a new exterior stair on the east and three large roof dormers.

Based on the survey conducted for this report, 4202 Stanley Boulevard does not appear to be eligible under California Register Criteria 1, 2 or 3:

- The house is not associated with cultural or historic patterns significant in the history of the City of Pleasanton thus the property is not significant under Criterion 1.
- None of the early occupants of the house are significant people in the history of Pleasanton; thus the house is not eligible under Criterion 2.
- The house also is not an exceptional example of the Bungalow Style in Pleasanton. Better examples of houses from this period that retain a higher level of historic integrity are still extant in Pleasanton; thus the house is not eligible under Criterion 3.

The two small ca. 1945 outbuildings south of the original house are simple, undistinguished structures that are not of architectural or historic significance.

7.0 BIBLIOGRAPHY

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MAPS

Wagner, Theodore and George Sandow
1894 Map showing portions of Alameda County, Contra Costa County and City and County of San Francisco.

United States Geological Survey Maps: Pleasanton Quad, 7.5 min., 1904; 15 min., 1940.

War Department, Corps of Engineers-U.S. Army: Pleasanton, 1940 (based on 1937 aerial)

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Oakland Daily and Weekly Tribune Map of Alameda County, 1880, Tribune Publishing Company.

EXHIBITS

FIGURES

DPR 523 FORMS

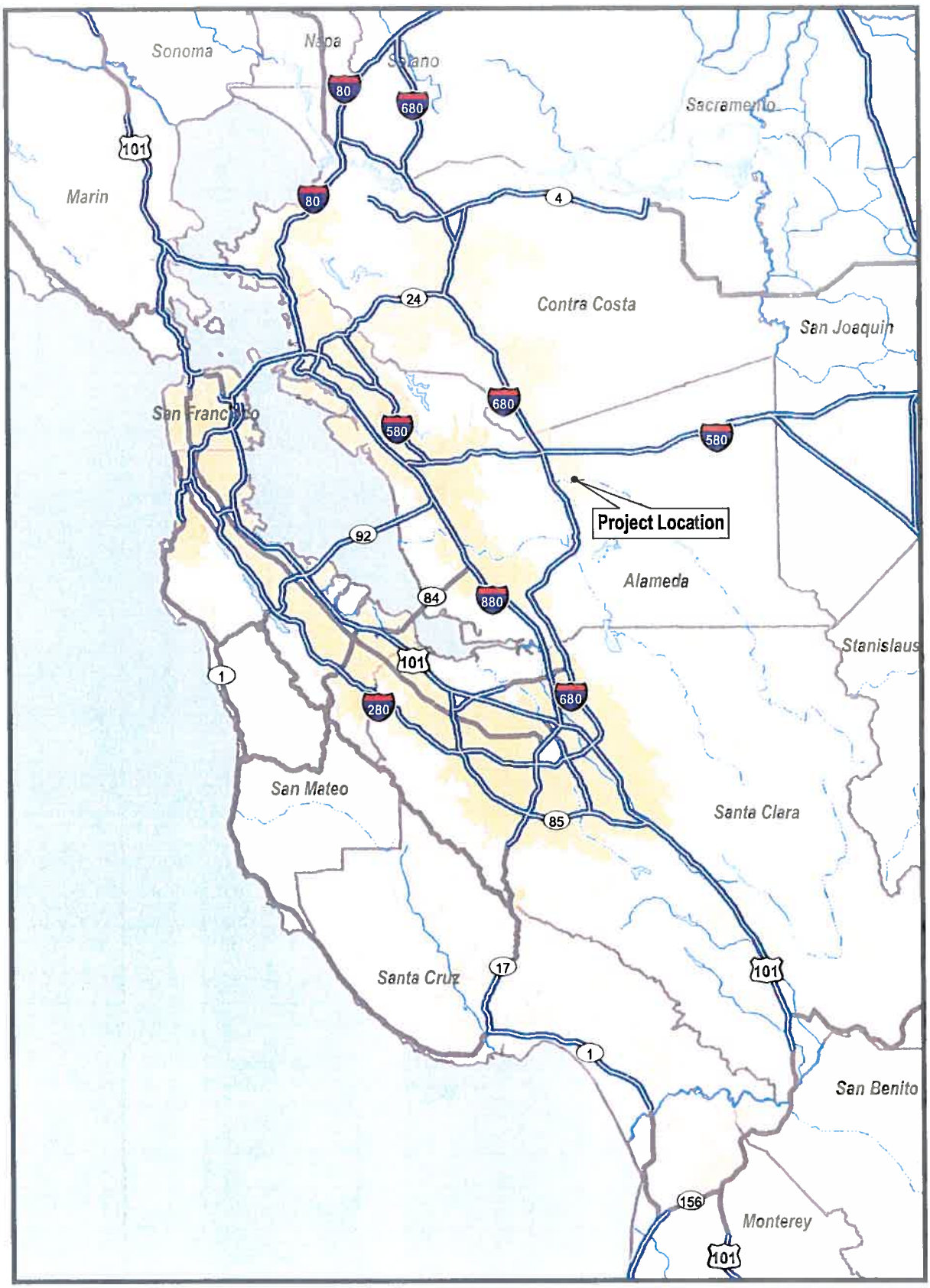


Figure 1: General Project Location

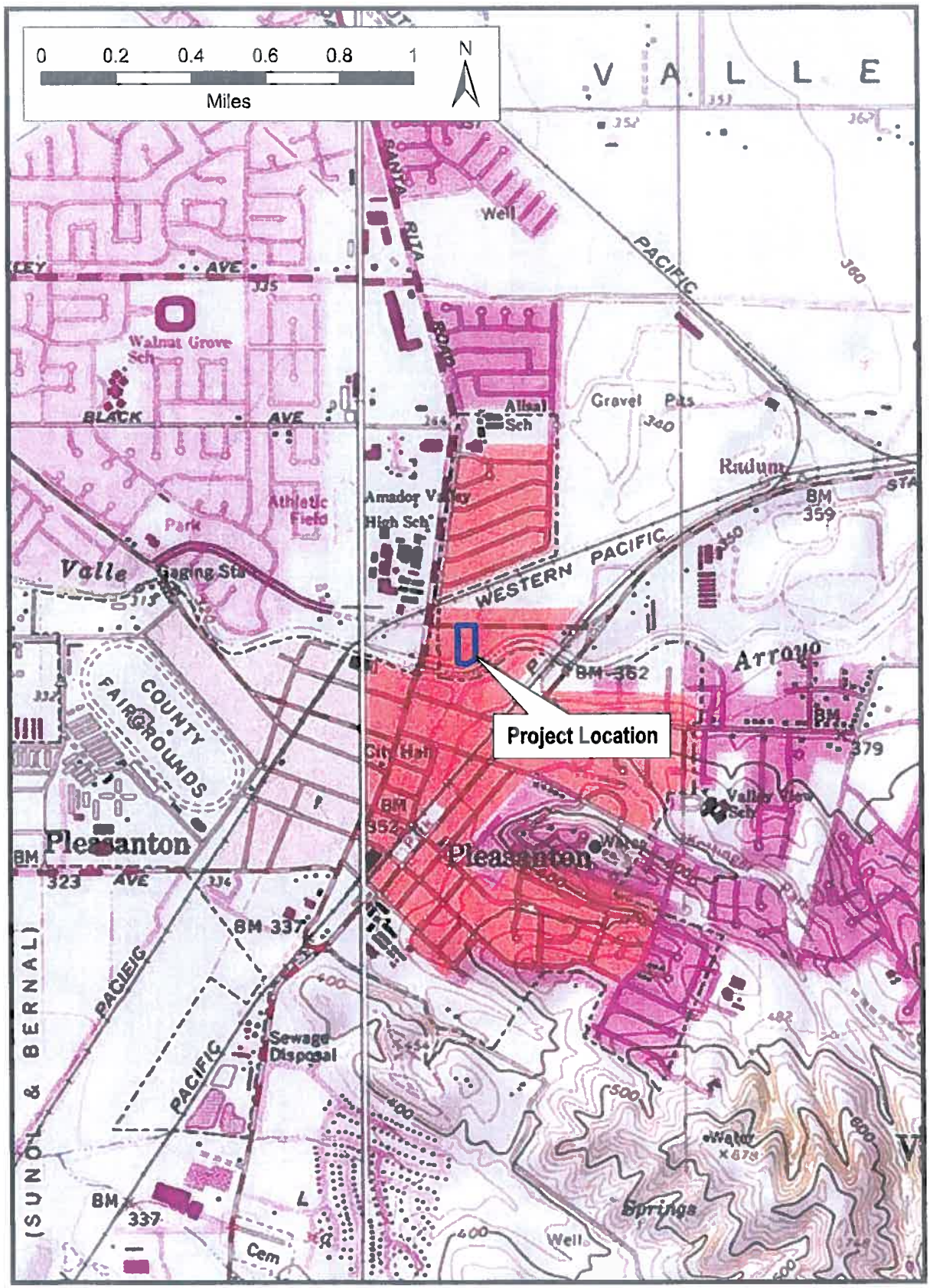


Figure 2: Project Location (USGS Dublin, Calif. 1980 and Livermore, Calif. 1980)

Figure 3: 4202 Stanley Blvd - Aerial View

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code
Other Listings
Review Code Reviewer Date

Page 1 of 9 Resource Name or #: 4202 Stanley Blvd

P1. Other Identifier:
P2. Location: ☐ Not for Publication ☒ Unrestricted
a. County Alameda
b. USGS 7.5' Quad, Livermore, Calif. Date 1980 T3S R1E; unsectioned; Mount Diablo B.M.
c. Address 4202 Stanley Blvd City Pleasanton Zip 94566
d. UTM: Zone 10 ; __ mE / __ mN
e. Other Locational Data: APN 946 169100101

P3a. Description

The two-story, two-unit residential, Bungalow Style building at 4202 Stanley Boulevard is set back about fifty feet from the street behind an asphalt covered parking area. The original house is located in a mobile home park that includes two additional ca. 1945 buildings in close proximity to the main residence: a storage building and a small residence with a laundry room in the back. In addition to the buildings a number of mobile homes and various mature trees are still extant on the flat 2.09 acre lot (approximately 200 by 400 feet).

The front façade of the house faces north toward Stanley Boulevard across an asphalt covered parking area. A driveway on the east side of the original house loops through the length of the parcel. The building has a rectangular plan with a rear utility room extension and a projecting angled bay window at the northwest corner. Structurally the building is stud-wall wood-frame construction with a perimeter concrete foundation. The building has primarily one over one, wood-sash, double-hung windows. A large casement window on the east may be later alteration. An angled bay at the northwest corner has four double-hung windows. The building has a hipped roof covered with asphalt shingles and a cross gable roof over the front entrance porch. The porch gable has cornice brackets and a gable brace under the roof peak. Round columns support the porch room. The columns are set on a low wall around the perimeter of the recessed entrance porch on the east side of the front façade. A stair constructed of concrete block with a wrought iron railing leads up to the entrance porch. The rear (south) façade has a rear porch with a shed roof. (see continuation sheet)

P3b. Resource Attributes: HP3 — Multiple Family Property
P4. Resources present: ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other

P5b. Description of Photo:
North facing front façade with projecting angled bay and second floor dormers. View to southeast

P6. Date Constructed/Age and Sources:
☒ Historic ☐ Prehistoric ☐ Both
House ca. 1912 (APN information),

P7. Owner and Address
Ponderosa Homes
6130 Stoneridge Mall, STE 185
Pleasanton, CA 94588

P8. Recorded by:
Ward M. Hill, M.A.
Basin Research Associates, Inc.
1933 Davis Street, Suite 210
San Leandro, CA 94577

P9. Date Recorded September 2012

P10. Survey Type:
Intensive

P11. Report Citation: HISTORIC ARCHITECTURE EVALUATION REPORT – 4202 STANLEY BOULEVARD, CITY OF PLEASANTON, ALAMEDA COUNTY, CALIFORNIA.

Attachments: ☐ NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record
☐ Photograph Record ☐ Other (List)

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
B5. Architectural Style: Bungalow Style
B6. Construction History:

4202 Stanley Boulevard was built in 1912. In the 1960s the second floor attic space was remodeled into a second unit. A separate stairway was constructed of wood with a brick foundation on the east façade leading to the entrance door of the second floor unit. Large dormers were added to the east, west and south slopes of the roof to provide additional space for the second floor unit, which included a living area, bedroom, kitchen and bathroom. The ground floor unit has also been remodeled, with a recently remodeled kitchen and bathroom at the back of the house on the south. A large casement window on the east may also be later alteration.

B7. Moved? ☒ No ☐ Yes ☐ Unknown Date: Original Location:
B8. Related Features:
B9a. Architect: N/A B9b. Builder: Unknown
B10. Significance: Theme N/A Area N/A
Period of Significance N/A Property Type N/A Applicable Criteria N/A

History

During the 19th century the parcel at 4202 Stanley Boulevard, Pleasanton was part of the 1,167 acre Joseph F. Black ranch. The property was lot 5 of the Lilienthal Addition # 3 to the Town of Pleasanton, a 21 lot subdivision filed March 13, 1905. E.R. Lilienthal initially sold lot 5 to Arthur Platt in 1910. The subdivision included one to two acre lots along what was then known as the Pleasanton-Livermore Road and adjacent to the Arroyo del Valle. Platt sold the lot to Nelson L. Wood who in turn sold it to Frederick and Emma Hall also in 1910. The Halls likely constructed the 1912 house extant today. According to 1920 and 1930 U.S. Census Records, Frederick Hall was a hay and grain trader. In his *History of the City of Pleasanton*, Hagemann noted that a Mr. Hall constructed one of three warehouses extant in the town by 1900 (Hagemann 1993: 42). According to the 1910 U.S. Census, Emma and Frederick Hall had four daughters and two sons. Born in 1862, Frederick Hall was 47 in 1910 and Emma was 42. By 1920 the Halls had three children still living with them: Ernest, 17, Burford, 14 and Merriel, 13. In 1920 the Halls sold 4202 Stanley Boulevard to Marjorie and Frederick Clark. (see continuation sheet)

B11. Additional Resource Attributes:

B12. References:

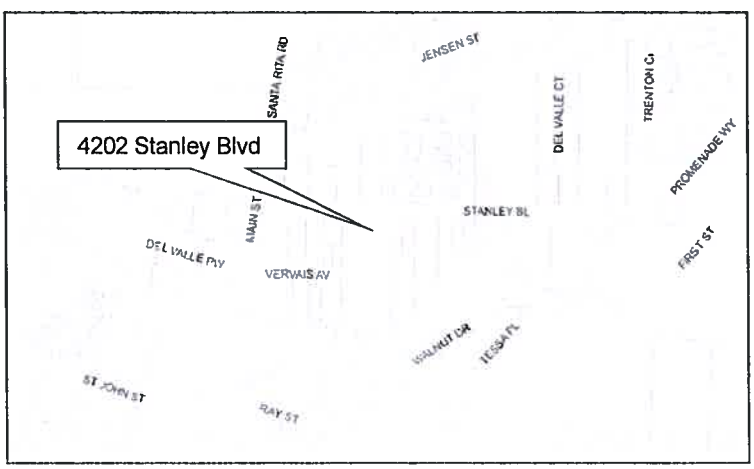
Alameda County Assessor Records
Alameda County Deed Records
Herbert Hagemann, Jr. *A History of the City of Pleasanton*, Amador-Livermore Valley Historical Society, 1993
Official Historical Atlas of Alameda County, 1878, Thompson & West.
Official Maps of Alameda County: 1880, 1889, 1900, 1910, 1915, 1924.
Pleasanton 2005 General Plan
"Pleasanton" listings in Husted's Oakland City Directories, 1892, 1894, 1900, 1905, 1907.
United States Census Records, Alameda County, 1910, 1920, 1930, 1940.

B13. Remarks:

B14. Evaluator Ward Hill, Architectural Historian

Date of Evaluation: September 2012

(This space reserved for official comments)



P3a. Continued

The ca. 1960s remodeling of the second floor attic space into a second unit involved several major alterations. A separate stairway constructed of wood with a brick foundation on the east façade leads to the entrance door to the second floor unit. The door and stairway are later alterations. Large dormers were added to the east, west and south slopes of the roof to provide additional space for the second floor unit (which has a living area, bedroom, kitchen and bathroom). The first floor of the original house has two bedrooms on the east and the main living areas (divided into two rooms) on the west. The walls have modern textured plaster and "cottage cheese" acoustical ceiling but the original baseboards, door and window molding are extant. A recently remodeled kitchen and bathroom are at the back of the house on the south.

B10. Continued

The Clarks only lived here for a few years before they sold the property in 1924 to Alice A. and Willam Fothergill, who was then 58 years old and a telegraph operator for a railroad (1920 U.S. Census). Mrs. Fothergill was the proprietor of a floral shop in Pleasanton (1940 U.S. Census). Alice Fothergill's estate transferred the Stanley Boulevard property to her son William M. Fothergill in 1944. Fothergill sold the property in 1944 to Alex Bowker, a general contractor, who likely started the mobile home park on the property. Bowker sold the property to Beatrice and Joseph Williams who sold it in 1946 to Willie and John Parker who operated a photography studio in Richmond, California. Apparently the property passed through a number of owners over the ensuing decades and the units in the main house have been occupied by tenants over the years. Debs and Mary J. Ozbirn, who purchased the property in 1980 and owned it into the 1990s, lived in San Leandro.

Evaluation

The original house at 4202 Stanley Boulevard has not been designated or determined for any state, local or federal historic resource listing. The parcel is adjacent to the Little Stanley Boulevard Residential Neighborhood included in the City of Pleasanton's Historic Neighborhoods and Structures List (Pleasanton 2005 General Plan). The historic integrity of the building has been somewhat compromised by the remodeling that created a second unit in the attic space. The remodeling included the addition of a new exterior stair on the east and the three large roof dormers.

Based on the survey conducted for this report, 4202 Stanley Boulevard does not appear to be eligible under Califomia Register Criteria 1, 2 or 3. The house is not associated with cultural or historic pattems significant in the history of the City of Pleasanton thus the property is not significant under Criterion 1. None of the early occupants of the house are significant people in the history of Pleasanton thus the house is not eligible under Criterion 2. The house also is not an exceptional example of the Bungalow Style in Pleasanton. Better examples of houses from this period that retain a higher level of historic integrity are still extant in Pleasanton, thus the house is not eligible under Criterion 3. The two small ca. 1945 buildings south of the original house are simple, undistinguished structures that are not of architectural or historic significance.

P5. Photo

North facing front façade showing porch and asphalt covered parking area. View to south

Driveway on west side of parcel with mobile homes and storage building. View to south

P5. Photo

Rear (south) façade with utility room extension, porch, and dormers. View to northwest

East façade showing entrance door to second floor unit and stairs. View to west

P5. Photo

Interior view of main living area in downstairs unit, with angled bay. View to northwest

Interior view of main living area. View to north

P5. Photo

Front view of small residence. Laundry room is in the rear of this building. View to southwest

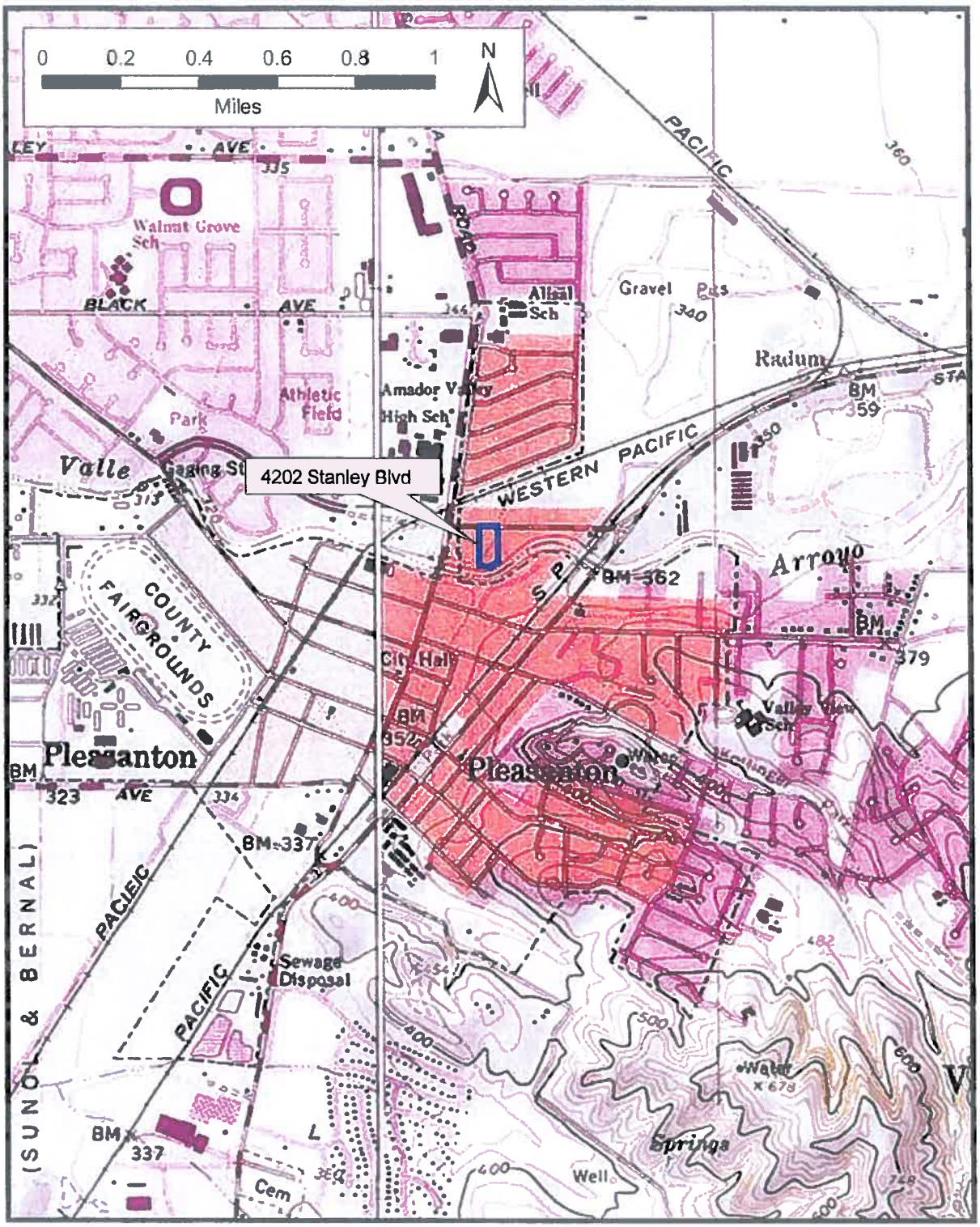
View of front façade of storage building. Laundry room at rear of small residence is visible at right. View to east


Stanley Blvd
4202 Stanley Blvd
Vervais Ave
Google earth

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

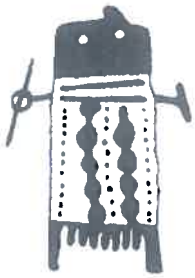
Primary #_____
HRI # _____
Trinomial _____

Page 9 of 9 Resource Name or #: (assigned by recorder) 4202 Stanley Blvd
USGS Dublin, Calif. 1980 and Livermore, Calif. 1980 Date: September 2012 ☒ Continuation ☐ Update



PUD-97

EXHIBIT H



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RESEARCH
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VOICE (510) 430-8441
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31 January, 2012

Jeffrey C. Schroeder
Senior Vice President, Land Acquisition & Planning
PONDEROSA HOMES II, INC.
6130 Stoneridge Mall, STE 185
Pleasanton, CA 94588

RE: Cultural Resources Review – 4202 Stanley Boulevard, Pleasanton (APN 946-1691-1-1)

Dear Mr. Schroeder,

Please let this letter stand as our report of an archaeological records search, a limited literature review, consultation with the Native American Heritage Commission, an archaeological field review and a summary architectural review for the property located at 4202 Stanley Boulevard, City of Pleasanton, Alameda County. This review was requested a part of a due diligence effort to determine if significant cultural resources under the California Environmental Quality Act (CEQA) might be affected by the proposed action. Mr. Ward Hill (M.A.), consulting architectural historian, completed a limited field review of three buildings presently located at the address.

PROJECT LOCATION AND DESCRIPTION

The project is a parcel with a physical address of 4202 Stanley Boulevard, Pleasanton (United States Geological Survey [hereafter USGS], USGS Dublin, Calif. 1980 and Livermore, Calif. 1980 7.5' quadrangle topographic maps, T 3S R 1E, unsectioned) [Figs. 1-3]. Residential housing is proposed for the parcel.

RESEARCH SOURCES CONSULTED

ARCHAEOLOGICAL RESOURCES

A prehistoric and historic site record and literature search was conducted by the California Historical Resources Information System, Northwest Information Center, Sonoma State University, Rohnert Park (CHRIS/NWIC File No. 11-0749 dated January 26, 2012 by Hagel).

The literature review by Basin Research Associates included a review of lists of various state and/or federal historically or architecturally significant structures, landmarks, or points of interest in/adjacent (see References Cited and Consulted).

INDIVIDUALS, AGENCIES AND GROUPS

The Native American Heritage Commission (NAHC) was contacted for a search of the *Sacred Lands Inventory* on file with the Commission (Busby 2012).

No other agencies, departments or local historical societies were contacted for this letter report.

RESEARCH FINDINGS

This report was prepared to identify potentially significant archaeological, Native American, or built environment resources listed or eligible for the California Register of Historical Resources (CRHR) within or adjacent to the proposed project.

RECORDS SEARCH RESULTS

No prehistoric, combined prehistoric/historic or historic sites have been recorded or reported in or adjacent to the proposed project. Two built environment sites have been recorded within 0.25 miles of the project (CHRIS/NWIC File No. 11-0749).

> P-01-001793, the Arroyo del Valle Railroad Bridge, an abandoned Southern Pacific Railroad Bridge (Hill 1996/form).
>
> P-01-001794, the Cavestri Farm, buildings complex located at 3899 First Street, Pleasanton (Hill 1996/form).

No cultural resources compliance reports on file at the CHRIS/NWIC appear to include the project and/or adjacent areas.

ARCHAEOLOGICAL SENSITIVITY

The project is located in an area designated as of "high" sensitivity for archaeological resources (Quaternary Research Group 1976).

NATIVE AMERICAN RESOURCES - Prehistoric

The CHRIS/NWIC records search was negative for the project and area adjacent to the project (CHRIS/NWIC File No. 11-0749).

NATIVE AMERICAN RESOURCES - Ethnographic

The aboriginal inhabitants of the project vicinity belonged to a group known as the Costanoans[1] (Kroeber 1925:465; Levy 1978:485). Researchers differ as to the identity of the subgroup which may have formerly occupied the study area: the *Seunen* tribelet (Bennyhoff 1977:164, Map 2); the *Ssouyen* (Hall n.d.:Map 1), or the *Pelnen* (Milliken 1995:229).

No known Native American villages, trails, traditional use areas or contemporary use areas have

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1. Also known as the *Ohlone* (Galvan 1967/68; Margolin 1978).

been identified in, adjacent or near the project (e.g., Kroeber 1925; Bennyhoff 1977; Levy 1978; Elsasser 1986:48, Table 4, Fig. 10; CAL/OHP 1988).

The NAHC search of the *Sacred Lands Inventory* ". . . failed to indicate the presence of Native American cultural resources in the immediate project area" (Pilas-Treadway 2012).

HISTORIC PERIOD RESOURCES

The Spanish philosophy of government in northwestern New Spain was directed at the founding of presidios, missions, and secular towns with the land held by the Crown (1769-1821). The later Mexican (1822-1848) policy stressed individual ownership of the land (Hart 1987).

Hispanic Era Resources

Early Spanish expeditions, Fages 1770, Fages 1772, and Anza 1775/1776 likely followed aboriginal trails. None of these trails/routes were located in or adjacent to the proposed project alignment (Milliken 1995:33, Map 3; USNPS 1995).

The project parcel was located within the *Rancho Valle de San Jose* ("stream of the valley") granted to Antonio Maria Pico in 1839, his brothers-in-law Agustin Bernal and Juan Pablo Bernal, and his sister-in-law, Maria Dolores Bernal de Sunol and patented to Agustin and Juan Pablo Bernal and Antonio Maria Sunol in 1865. None of the known rancho dwellings, or other features (e.g., garden, roads, corrals, etc.) were located in or adjacent to the project (Hendry and Bowman 1940:630-640; Hoover et al. 1966:16-17; Mosier and Mosier 1986:12).

American Era Resources[2]

No known American Era Resources were identified in the project as part of the CHRIS/NWIC records search conducted for the proposed project.

Map Review with Supplementary Information

Healy's 1863 Plat of the *Rancho Valle de San Jose* finally confirmed to Antonio Sunol, Juan Bernal and Augustin Bernal shows the alignment of the *"Arroyo Valle"* east of the study area, *"J Bernol's"* mapped north of the study area, and the *"Road from Mission San Jose to Stockton"* (present-day Sunol Boulevard/First Street/Stanley Boulevard) south of the project through the study area.

Higley's 1857 *Official Map of the County of Alameda* shows the "*Arroyo Vaya*" (present-day Arroyo del Valle) and the road through the study area. No other features are mapped in the project vicinity.

Allardt's 1874 *Official Map of Alameda County* shows some subdivision of former rancho lands in the study area as well as the *"Western Pacific R.R."* through the study area, east of the project. At the time, the project vicinity was located north of Pleasanton. A single

2. Information relies on previous reports by Basin Research Associates.

structure is shown in the project vicinity, possibly within the project, just east of Main Street/Santa Rita Road north of the Arroyo Del Valle and south of present-day Stanley Boulevard.

In contrast Thompson and West's 1878 *Official Historical Atlas Map of Alameda County* does not show a structure in the vicinity of the project (e.g., Allardt 1874).

The schematic 1880 Oakland Tribune's *Map of Alameda County* appears to show a structure mapped on the 1874 Allardt map that may have been within or near the project parcel.

Nusbaumer and Boardman's 1900 *Official Map of Alameda County, California* shows no structure in the vicinity of the project (e.g., between Main Street, Stanley Boulevard, and the *"Central Pacific R.R."*

The 1906 USGS Pleasanton topographic quadrangle map, surveyed in 1904 shows no structure in the vicinity of the project.

The 1943 US War Department Pleasanton topographic quadrangle map, relying on 1937 aerial photography, shows both sides of Stanley Boulevard occupied by buildings.

The 1980 USGS Livermore topographic quadrangle map shows the project and vicinity as urbanized - thus no individual buildings or structures are mapped.

Built Environment

Three buildings are present within the parcel - a single family residence constructed in 1912 and two c. 1945 buildings: a storage building and a small residence with a laundry room in the back are present in close proximity to the main residence. In addition, several trailers are present on the property due to its former use as mobile park.

Listed Historic Properties

No listed local, state or federal historically or architecturally significant structures, landmarks or points of interest have been identified in the proposed project.

FIELD REVIEW - Archaeological [Figs. 4-7]

Mr. Christopher Canzonieri (M.A.) completed a field inventory of the 2.09 acre parcel on January 17, 2012. Three buildings are present within the former mobile home park - a main residence and two secondary buildings (storage and laundry/residential). Several vacant trailers are also present along with one occupied trailer.

Field transects were oriented north south and spaced approximately two meters apart. The majority of the surface is covered in asphalt (there are two main driveways) and concrete driveways associated with individual trailer lots. The few open areas include lawns and large mature trees. Observed sediments consist of grayish brown loamy silt with angular gravel and subrounded pebbles. No prehistoric cultural material was observed during the field inventory.

No significant prehistoric or historic archaeological material was observed during the field inventory.

FIELD REVIEW - Built Environment (see Attachments)

Mr. Ward Hill (M.A.), consulting architectural historian, completed a preliminary historic resource evaluation of the two unit residential building located on the parcel with a current use as a mobile home park [see Figs. 3, 8-9; Attachment]. The building was originally a single-family house with a c.1960s second floor unit added in remodeled attic space. Two additional c. 1945 buildings: a storage building and a small residence with a laundry room in the back are present in close proximity to the main residence. In addition to the buildings a number of mobile homes and various mature trees are still extant on the level 2.09 acre lot. According to public records, the original house was constructed in 1912. Mr. Hill photographed the original house, inspected the interior and exterior, noting later alterations and obvious evidence of deterioration. He also inspected the interior of the later storage building but the small house interior was not accessible.

DESCRIPTION

The two-story, two-unit residential, Bungalow Style building is set back about 50 feet from the street behind an asphalt covered parking area. The front façade faces north toward the street. A driveway on the east side of the original house loops through the length of the parcel. The building has a rectangular plan with a rear utility room extension and a projecting angled bay window at the northwest corner. Structurally the building is stud-wall wood-frame construction with a perimeter concrete foundation.

The building has primarily one over one, wood-sash, double-hung windows. A large casement window on the east may be later alteration. An angled bay at the northwest corner has four double-hung windows. The building has a hipped roof covered with asphalt shingles and a cross gable roof over the front entrance porch. The porch gable has cornice brackets and a gable brace under the roof peak. Round columns support the porch room. The columns are set on a low wall around the perimeter of the recessed entrance porch on the east side of the front façade. A stair constructed of concrete block with a wrought iron railing leads up to the entrance porch. The rear (south) façade has a rear porch with a shed roof.

The c. 1960s remodeling of the second floor attic space into a second unit involved several major alterations. A separate stairway constructed of wood with a brick foundation on the east façade leads to the entrance door to the second floor unit. The door and stairway are later alterations. Large dormers were added to the east, west and south slopes of the roof to provide additional space for the second floor unit (which has a living area, bedroom, kitchen and bathroom). The first floor of the original house has two bedrooms on the east and the main living areas (divided into two rooms) on the west. The walls have modern textured plaster and "cottage cheese" acoustical ceiling but the original baseboards, door and window molding are extant. A recently remodeled kitchen and bathroom are at the back of the house on the south.

<u>Preliminary Evaluation</u>

The house has not been designated or determined for any state, local or federal historic resource

listing. The parcel is adjacent to the Little Stanley Boulevard Residential Neighborhood included in the City of Pleasanton's Historic Neighborhoods and Structures List (Pleasanton General Plan 2005-2025 2009:Table 7-3, #90). The historic integrity of the house has been somewhat compromised by the remodeling done to add a second unit in the attic space c. 1960s (addition of a new exterior stair on the east and the three large roof dormers). Based on the survey conducted for this letter report, the main residence does not appear to be eligible under California Register of Historic Places Criterion 3:

> . . . resource embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.

It is not an exceptional example of the Bungalow Style in Pleasanton. Better examples of houses from this period that retain a higher level of historic integrity are still extant in Pleasanton. Additional detailed archival historical research/oral history is necessary in order to evaluate the building under Criteria 1 and 2. The two small c. 1945 buildings south of the original house are simple, undistinguished structures that are not of architectural interest.

SUMMARY

No archaeological resources have been identified in or adjacent to the proposed Stanley Boulevard Project based on the records search, and field inventory conducted for the proposed project.

No known ethnographic, traditional or contemporary Native American resources have been identified in or adjacent to the project.

An inconclusive and limited historic map review suggests that a building and/or structure may have been located in the vicinity or within the project possibly ca. 1874/1880 and ca. 1937.

The house located at 4202 Stanley Boulevard and constructed in 1912 has not been designated or determined for any state, local or federal historic resource listing. The historic integrity of the house has been somewhat compromised by the remodeling done to add a second unit in the attic space c. 1960s. Based on the survey conducted for this letter report, the main residence does not appear to be eligible under California Register of Historic Places Criterion 3. It is not an exceptional example of the Bungalow Style in Pleasanton and better examples of houses from this period are still extant in Pleasanton. Additional detailed archival historical research/oral history is necessary in order to evaluate the building under Criteria 1 and 2. The two small c. 1945 buildings south of the original house are simple, undistinguished structures that are not of architectural interest.

No National Register or California Register listed, determined or potentially significant local, state or federal historic properties, landmarks, etc. have been identified in or adjacent to the proposed project.

CONCLUSIONS AND MANAGEMENT RECOMMENDATIONS

It is the considered opinion of Basin Research Associates, based on a review of pertinent records, maps and other documents, and a field inventory that the proposed project can proceed as planned in regard to prehistoric and historic archaeological resources. No subsurface testing for buried archaeological resources appears necessary at this time.

Basin Research Associates recommends that if any unanticipated prehistoric or significant historic era cultural materials[3] are exposed during construction grading and/or excavation, operations should stop within 25 feet of the find and a qualified professional archaeologist contacted for evaluation and further recommendations. Potential recommendations could include evaluation, collection, recordation and analysis of any significant cultural materials followed by a professional report.

The preliminary review of the three buildings present on the property suggests that they are not eligible for the California Register of Historical Resources (CRHR). However, additional detailed archival historical research/oral history is necessary in order to evaluate the ca. 1912 residence under CRHR Criteria 1 and 2. It is also recommended that the appropriate state forms be completed and filed with the California Historical Resources Information System, Northwest Information Center (CHRIS/NWIC).

CLOSING REMARKS

If I can provide any additional information or be of further service please don't hesitate to contact me. Thank you for retaining our firm for the project.

Sincerely,
BASIN RESEARCH ASSOCIATES, INC.

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3. Significant prehistoric cultural resources are defined as human burials, features or other clusterings of finds made, modified or used by Native American peoples in the past. The prehistoric and protohistoric indicators of prior cultural occupation by Native Americans include artifacts and human bone, as well as soil discoloration, shell, animal bone, sandstone cobbles, ashy areas, and baked or vitrified clays. Prehistoric materials may include:

   a. Human bone - either isolated or intact burials.
   b. Habitation (occupation or ceremonial structures as interpreted from rock rings/features, distinct ground depressions, differences in compaction (e.g., house floors).
   c. Artifacts including chipped stone objects such as projectile points and bifaces; groundstone artifacts such as manos, metates, mortars, pestles, grinding stones, pitted hammerstones; and, shell and bone artifacts including ornaments and beads.
   d. Various features and samples including hearths (fire-cracked rock; baked and vitrified clay), artifact caches, faunal and shellfish remains (which permit dietary reconstruction), distinctive changes in soil stratigraphy indicative of prehistoric activities.
   e. Isolated artifacts

   Historic cultural materials may include finds from the late 19th through early 20th centuries. Objects and features associated with the Historic Period can include.

   a. Structural remains or portions of foundations (bricks, cobbles/boulders, stacked field stone, postholes, etc.).
   b. Trash pits, privies, wells and associated artifacts.
   c. Isolated artifacts or isolated clusters of manufactured artifacts (e.g., glass bottles, metal cans, manufactured wood items, etc.).
   d. Human remains.

   In addition, cultural materials including both artifacts and structures that can be attributed to Hispanic, Asian and other ethnic or racial groups are potentially significant. Such features or clusters of artifacts and samples include remains of structures, trash pits, and privies.

Colin I. Busby, Ph.D., RPA
Principal

CIB/d

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Abbreviations

n.d. no date v.d. various dates N.P. no publisher noted
n.p. no place of publisher noted

Note: "CHRIS/NWIC, Sonoma State University, Rohnert Park" is used for material assigned S-# on file at the California Historical Resources Information System, Northwest Information Center, California State University Sonoma, Rohnert Park.

ATTACHMENTS

FIGURES

REPORT

Letter Report to Basin Research Associates
4202 Stanley Boulevard, Pleasanton, California
Ward Hill, Architectural Historian
January 27, 2012

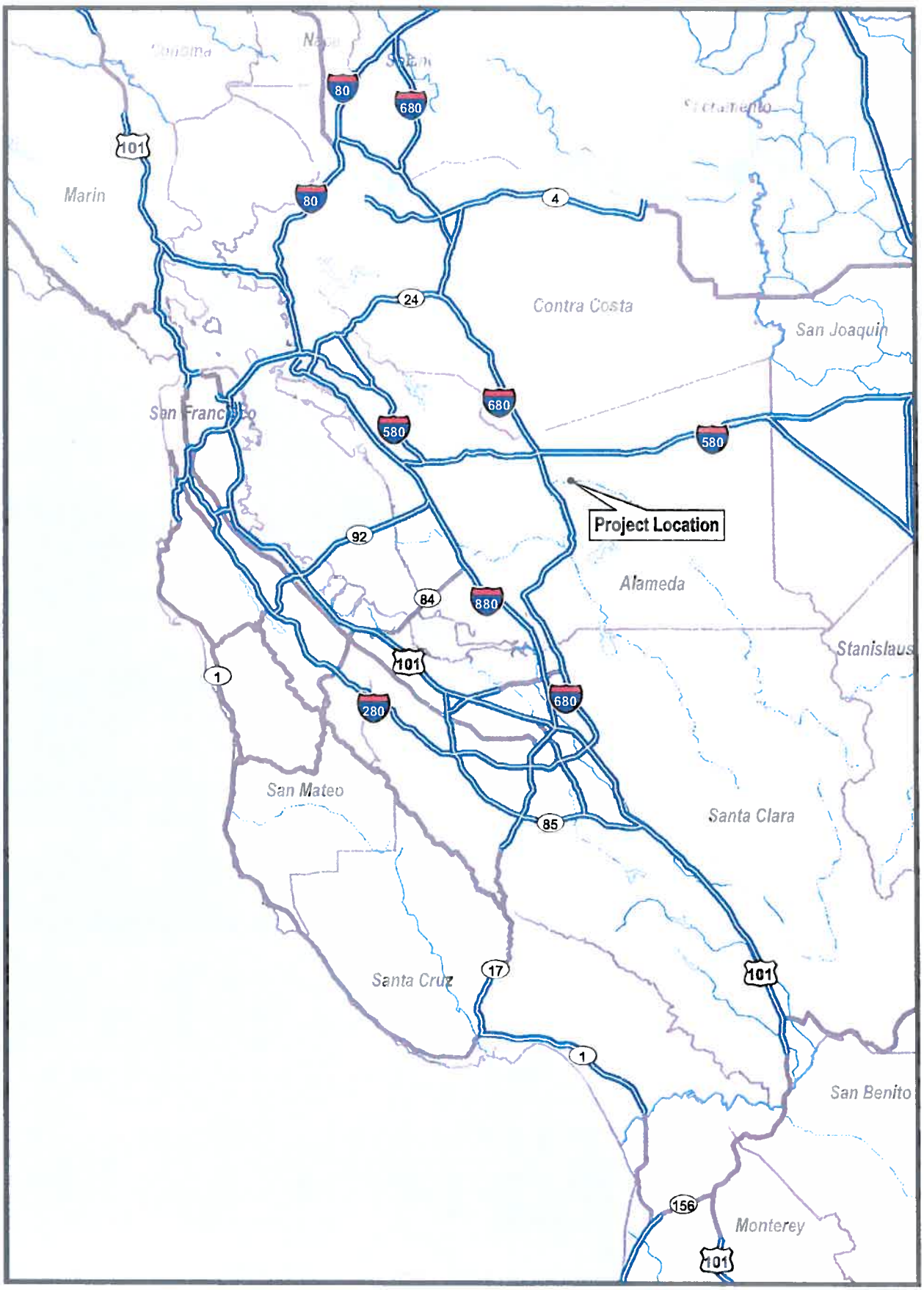

Figure 1: General Project Location

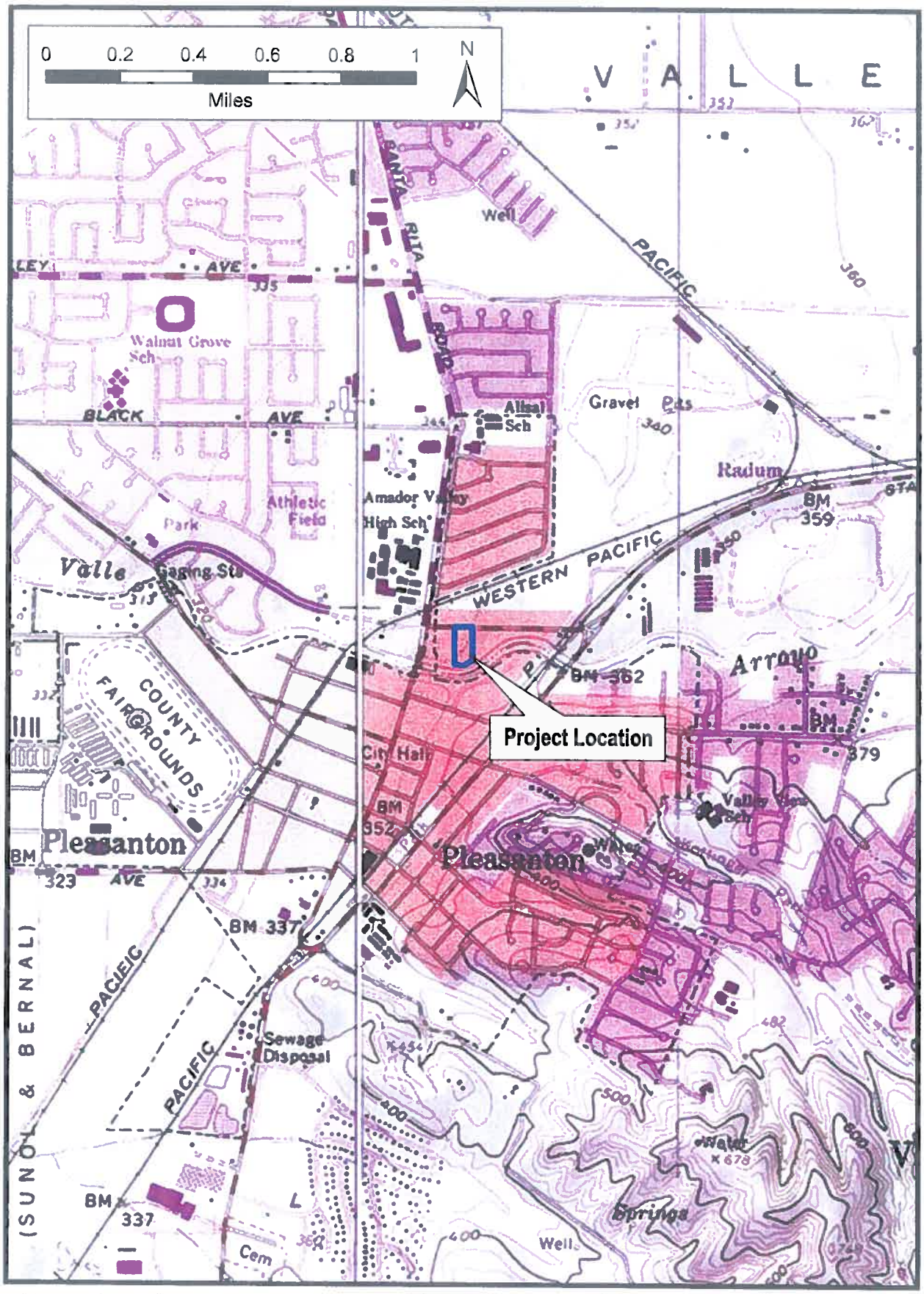

Figure 2: Project Location (USGS Dublin, Calif. 1980 and Livermore, Calif. 1980)

Figure 3: 4202 Stanley Blvd - Aerial View

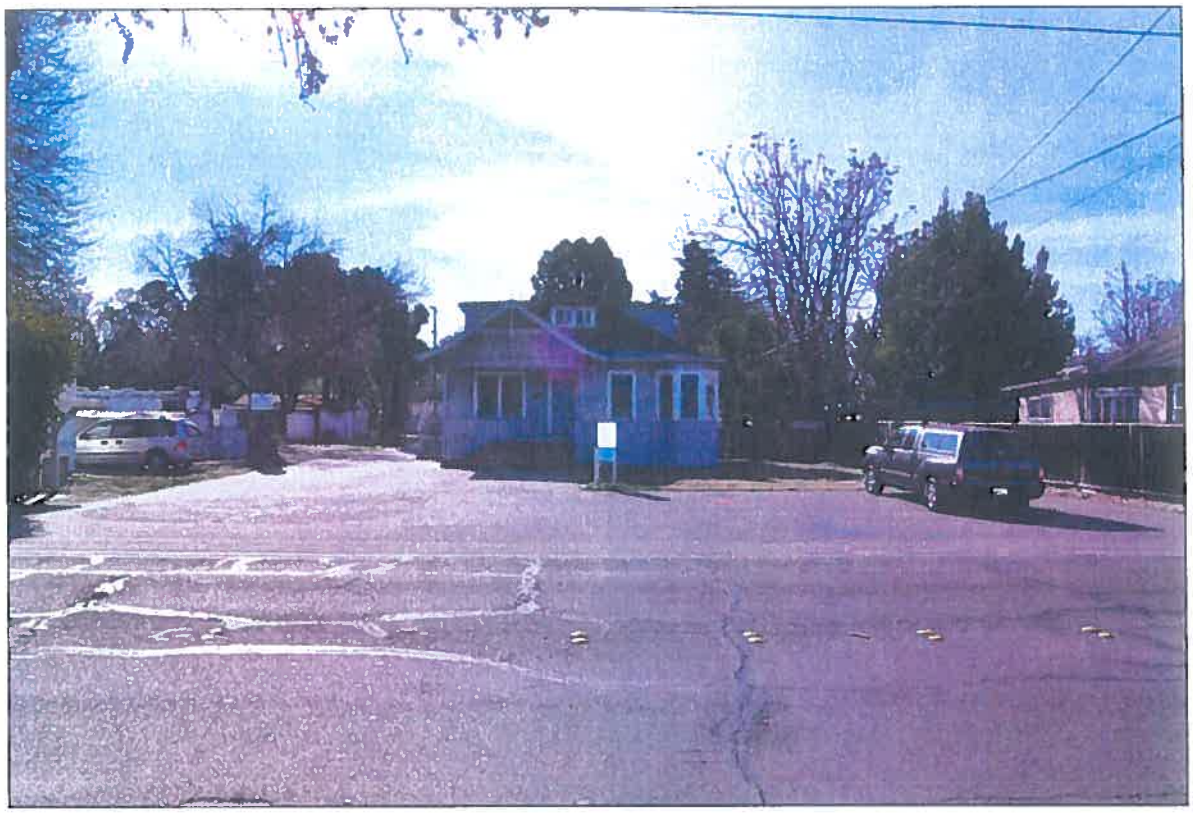

Figure 4: View south at 4202 Stanley Boulevard

Figure 5: View south along west side of property

Figure 6: View east; parallel to Arroyo Mocho

Figure 7: View north along east side of property

Figure 8: North facing front façade showing porch and asphalt covered parking area. View to south

Figure 9: North facing front façade with projecting angled bay and second floor dormers. View to southeast

EXHIBIT I

CORNERSTONE EARTH GROUP

Date: June 6, 2013 **DRAFT**
Project No.: 2725

Prepared For: Ms. Pamela Hardy
PONDEROSA HOMES
6130 Stoneridge Mall Road, Suite 185
Pleasanton, California 94588

Re: Geotechnical Response to Comment
Wagner Property
4202 Stanley Boulevard
Pleasanton, California

PUD-97
RECEIVED
JUN 13 2013
CITY OF PLEASANTON
PLANNING DIVISION

Dear Ms. Hardy:

As requested, this letter presents our response to a City of Pleasanton review comment for the above referenced project.

We received a copy of an email from the City of Pleasanton dated May 30, 2013, requesting that the geotechnical engineer address a potential concern associated with allowing storm water collected in bio-retention swales to infiltrate into underlying native soils, and whether allowing surface water infiltration would impact the proposed site development from a seismic hazard viewpoint.

We reviewed the preliminary storm water bio-retention basin detail shown on the plan titled, "Grading and Utility Plan, Wagner Property, City of Pleasanton, Alameda County, Sheet PD-3," prepared by RJA dated May 22, 2013. We also reviewed the subsurface data in our geotechnical report dated January 29, 2013, as it pertains to potential seismic-induced settlement.

Based on our review, the proposed bioretention basins and the associated water infiltration would not increase the potential for seismic-induced settlement at the site more than what was previously estimate in our geotechnical report dated January 29, 2013.

Our professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices at this time and location. No warranties are either expressed or implied. If you have any questions or need any additional information from us, please call and we will be glad to discuss them with you.

Sincerely,

Cornerstone Earth Group, Inc.

John R. Dye, P.E., G.E.
Principal Engineer

Copies: Addressee (PDF by email)
Elisa Sarlatte – RJA (PDF by email)

[illegible]

CORNERSTONE EARTH GROUP

PUD - 97

TYPE OF SERVICES	Preliminary Geotechnical Investigation
PROJECT NAME	Stanley Boulevard Residential Development
LOCATION	4202 Stanley Boulevard Pleasanton, California
CLIENT	Ponderosa Homes
PROJECT NUMBER	132-5-1
DATE	January 29, 2013

CORNERSTONE EARTH GROUP

Type of Services	Preliminary Geotechnical Investigation
Project Name	Stanley Boulevard Residential Development
Location	4202 Stanley Boulevard Pleasanton, California
Client	Ponderosa Homes
Client Address	6671 Owens Drive Pleasanton, CA
Project Number	132-5-1
Date	January 29, 2013

Prepared by

John R. Dye, P.E., G.E.
Principal Engineer
Geotechnical Project Manager

Laura C. Knutson, P.E., G.E.
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CORNERSTONE EARTH GROUP

TABLE OF CONTENTS

CORNERSTONE EARTH GROUP

Type of Services	Preliminary Geotechnical Investigation
Project Name	Stanley Boulevard Residential Development
Location	4202 Stanley Boulevard Pleasanton, California

SECTION 1: INTRODUCTION

This preliminary geotechnical investigation was prepared for the sole use of Ponderosa Homes for the property located at 4202 Stanley Boulevard in Pleasanton, California. The purpose of this study was to evaluate the existing subsurface conditions and develop an opinion regarding potential geotechnical concerns that could impact the proposed development. The preliminary geotechnical recommendations contained in this report are for your forward planning, cost estimating, and preliminary project design. For our use, we were provided with the following documents:

- A report titled, "Phase I Environmental Site Assessment Report, Mobile Home Park, 4202 Stanley Boulevard, Pleasanton, CA," prepared by AAI Environmental Inc. dated March 11, 2011.
- A plan titled, "Pleasanton Trailer Park, Layout of Trailer Pattern and Sewage Arrangement," drawn by J.D. Byrd dated July 14, 1961.
- A preliminary base topographic plan prepared by RJA dated January 27, 2012.

1.1 PROJECT DESCRIPTION

The approximately 2-acre project site is located at 4202 Stanley Boulevard in Pleasanton, California. The site is currently occupied by an existing mobile home park and single-family residence. We understand that Ponderosa Homes is considering purchasing the site for a new residential development.

Conceptual plans are not yet available; however, we understand that single-family homes will likely be considered for the site. Appurtenant streets, parking, utilities, landscaping and other improvements necessary for site development are also likely planned.

1.2 SCOPE OF SERVICES

Our scope of services was presented in our proposal dated January 9, 2012, and consisted of field and laboratory programs to evaluate physical and engineering properties of the subsurface soils, engineering analysis to prepare preliminary recommendations for site grading, building foundations, pavements, and preparation of this preliminary report. Brief descriptions of our exploration and laboratory programs are presented below.

1.3 EXPLORATION PROGRAM

Field exploration consisted of three borings drilled on January 16 and December 18, 2012, with truck-mounted, hollow-stem auger drilling equipment and three Cone Penetration Tests (CPTs) advanced on January 19, 2012. The borings were drilled to depths of approximately 16½ and 40 feet; the CPTs were advance to depths of approximately 50 feet each. Boring EB-1 was advanced adjacent to CPT-2 and Boring EB-3 was performed adjacent to CPT-3 for direct evaluation of physical samples to correlated soil behavior.

The borings and CPTs were backfilled with cement grout in accordance with local requirements; exploration permits were obtained as required by local jurisdictions. The approximate locations of our exploratory borings and CPTs are shown on the Site Plan, Figure 2. Details regarding our field program are included in Appendix A.

1.4 LABORATORY TESTING PROGRAM

In addition to visual classification of samples, the laboratory program focused on obtaining data for preliminary foundation design and seismic ground deformation estimates. Testing included moisture contents, dry densities, washed sieve analyses, and Plasticity Index tests. Details regarding our laboratory program are included in Appendix B.

1.5 ENVIRONMENTAL SERVICES

Cornerstone Earth Group also provided environmental services for this project, including Phase 1 and 2 site assessments; environmental findings and conclusions are provided under separate covers.

SECTION 2: REGIONAL SETTING

2.1 REGIONAL SEISMICITY

The San Francisco Bay area is one of the most seismically active areas in the Country. While seismologists cannot predict earthquake events, the U.S. Geological Survey's Working Group on California Earthquake Probabilities 2007 estimates there is a 63 percent chance of at least one magnitude 6.7 or greater earthquake occurring in the Bay Area region between 2007 and 2036. As seen with damage in San Francisco and Oakland due to the 1989 Loma Prieta earthquake that was centered about 50 miles south of San Francisco, significant damage can

occur at considerable distances. Higher levels of shaking and damage would be expected for earthquakes occurring at closer distances.

The faults considered capable of generating significant earthquakes are generally associated with the well-defined areas of crustal movement, which trend northwesterly. The table below presents the State-considered active faults within 25 kilometers of the site.

Table 1: Approximate Fault Distances

Fault Name	Distance	
	(miles)	(kilometers)
Calaveras	2.3	3.8
Hayward (Total Length)	8.4	13.6
Greenville	9.9	16.0
Hayward (Southeast Extension)	13.9	22.4

SECTION 3: SITE CONDITIONS

3.1 SITE BACKGROUND

The existing single-family home located at the northwest corner of the site was reportedly constructed around 1912. The mobile home park was reportedly constructed in the late 1950s and was developed to accommodate up to 32 mobile homes. Our review of the original sewer system plan dated July 14, 1961, indicated the mobile home park was connected to three septic tanks and two sump pumps that drained to a leach field located near the laundry building. The mobile home park septic system was reportedly disconnected in 1992 and the site was connected to City of Pleasanton sewer services. In general, the mobile home park has remained relatively unchanged since original construction; however, the site has reportedly recently been vacated with the exception of the single-family home and one or two units.

3.2 SURFACE DESCRIPTION

The approximately 2-acre site is located at 4202 Stanley Boulevard and is bounded by Stanley Boulevard to the north, Arroyo del Valle to the south, and existing commercial and residential properties to the east and west. The site is occupied by a mobile home park and a single-family residence. Many of the mobile home sites are unoccupied, but several mobiles are still present throughout the site. Several additional out-structures were observed at the site, including small sheds, a storage building and a laundry building. The site is bordered by chain link or wooden fencing. A U-shaped asphalt concrete paved street loops into the site to provide access to each mobile home site. Based on visual observations, the existing asphalt concrete pavements are in fair to poor condition. Concrete pads, patio slabs and/or walkways were observed at each mobile home unit. The remainder of the site is covered with grass, bushes and numerous mature trees.

Topographic information provided by RJA indicates site grades ranging from approximately Elevation 350 to 352 feet (datum unknown). The adjacent Arroyo del Valle creek channel that flanks the south end of the site is approximately 25 feet deep and has an average bank slope inclined at approximately 1.5:1 to 2:1 (horizontal:vertical). Localized portions near the top of the creek bank are inclined as steep as 1.2:1, while the lower portion of the bank is about 8:1 or flatter. The creek bank is covered with dense vegetation and mature trees. Active erosion, bank sloughing or slope instability was not observed within the project boundary during our site reconnaissance.

3.3 SUBSURFACE CONDITIONS

3.3.1 Undocumented Fill

Our explorations were performed in unpaved areas of the site. However, based on our site observations, surface pavements are estimated to be on the order of 3 inches or less. Our explorations generally encountered approximately 1 foot of undocumented fill consisting of stiff sandy silt and medium dense silty sand.

As discussed, the mobile home park was reportedly connected to three septic tanks and two sump pumps that drained to a leach field located near the laundry building. We understand the mobile home park septic system was abandoned in about 1992 and the site was connected to City of Pleasanton sewer services. It is not known at this time whether the three septic tanks, two sump pumps and leach field indicated on the 1961 site utility plan were removed and backfilled or if they were abandoned in-place.

3.3.2 Native Alluvial Soil

Below the existing fills or where no fill is present, the site is underlain by Holocene-aged alluvial fan deposits derived from deposition from Arroyo del Valle and surrounding hillsides in the Tri-Valley area. The northern end of the site in the vicinity of CPT-1 is primarily underlain by stiff to hard sandy silt and sandy clay to a depth of approximately 47 feet. The fine-grained soils are underlain by dense silty sands and gravels to the maximum depth explored in CPT-1 at 50 feet.

The fine-grained soils decrease in thickness towards the central and southern portions of the site. In Boring EB-2 and CPT-3, performed near the center and southeast portions of the site, stiff to very stiff sandy silt was encountered to a depth of approximately 11½ to 13 feet, underlain by medium dense to dense sand and silty sand to a depth of approximately 37 feet. The sands were underlain by stiff to very stiff clay to a depth of about 47 feet and very dense sand and gravel to the maximum depth explored in CPT-3 at approximately 50 feet.

In Boring EB-1 and CPT-2, performed within 5 feet of each other near the southwest corner of the site, dense to very dense sands with varying percentages of gravel were encountered directly below the fill and extending to a depth of approximately 34 feet. The upper sands were underlain by stiff to hard clay and silt with occasional interbedded dense clayey and silty sand to the maximum depth explored in CPT-2 at 50 feet.

3.3.3 Plasticity/Expansion Potential

We performed one Plasticity Index (PI) test on a representative sample of the near-surface, fine-grained soil. Test results were used to evaluate expansion potential of surficial soils. The results of the surficial PI test indicated a PI 4, indicating low expansion potential to wetting and drying cycles.

3.3.4 In-Situ Moisture Contents

Laboratory testing indicated that the in-situ moisture contents within the upper 10 feet range from 5 percent below to near the estimated laboratory optimum moisture.

3.4 GROUND WATER

Ground water was not encountered in our explorations during drilling; however, the borings were not left open but were immediately backfilled when the borings was completed. A pore pressure dissipation test was performed during CPT-3 to estimate potential ground water conditions. The results of the test indicated that confined ground water rose to approximately 13 feet below the existing ground surface. However, given the time of year the test was conducted and the low water level in the creek at the time of our exploration, it is our opinion that the measured ground water does not represent a static ground water level. Based on our previous experience in the area and review of historic ground water maps, we anticipate that the high ground water level will be on the order of 20 feet below current grades, which is consistent with the depth of the Arroyo del Valle channel.

Fluctuations in ground water levels occur due to many factors including seasonal fluctuation, underground drainage patterns, regional fluctuations, and other factors.

SECTION 4: GEOLOGIC HAZARDS

4.1 FAULT RUPTURE

As discussed above several significant faults are located within 25 kilometers of the site. The site is not located within a State-designated Alquist-Priolo Earthquake Fault Zone. No known surface expression of fault traces is thought to cross the site; therefore, fault rupture hazard is not a significant geologic hazard at the site.

4.2 ESTIMATED GROUND SHAKING

Moderate to severe (design-level) earthquakes can cause strong ground shaking, which is the case for most sites within the Bay Area.

4.3 LIQUEFACTION POTENTIAL

The site is within a State-designated Liquefaction Hazard Zone (CGS, Livermore Quadrangle, 2008). Our field and laboratory programs addressed this issue on a preliminary basis by

sampling potentially liquefiable layers to depths of at least 50 feet, performing visual classification on sampled materials, evaluating CPT correlations, and performing various tests to further classify the soil properties.

4.3.1 Background

During strong seismic shaking, cyclically induced stresses can cause increased pore pressures within the soil matrix that can result in liquefaction triggering, soil softening due to shear stress loss, potentially significant ground deformation due to settlement within sandy liquefiable layers as pore pressures dissipate, and/or flow failures in sloping ground or where open faces are present (lateral spreading) (NCEER 1998). Limited field and laboratory data is available regarding ground deformation due to settlement; however, in clean sand layers settlement on the order of 2 to 3 percent of the liquefied layer thickness can occur. Soils most susceptible to liquefaction are loose, non-cohesive soils that are saturated and are bedded with poor drainage, such as sand and silt layers bedded with a cohesive cap.

4.3.2 Analysis

As discussed in the "Subsurface" section above, sand layers were encountered below the design ground water depth of 20 feet. Following the procedures in the 2008 monograph, *Soil Liquefaction During Earthquakes* (Idriss and Boulanger, 2008) and in accordance with CDMG Special Publication 117A guidelines (CDMG, 2008) for quantitative analysis, these layers were analyzed for liquefaction triggering and potential post-liquefaction settlement. These methods compare the ratio of the estimated cyclic shaking (Cyclic Stress Ratio - CSR) to the soil's estimated resistance to cyclic shaking (Cyclic Resistance Ratio - CRR), providing a factor of safety against liquefaction triggering. Factors of safety less than or equal to 1.3 are considered to be potentially liquefiable and capable of post-liquefaction re-consolidation.

The CSR for each layer quantifies the stresses anticipated to be generated due to a design-level seismic event, is based on the peak horizontal acceleration generated at the ground surface discussed in the "Estimated Ground Shaking" section above, and is corrected for overburden and stress reduction factors as discussed in the procedure developed by Seed and Idriss (1971) and updated in the 2008 Idriss and Boulanger monograph.

The soil's CRR is estimated from the in-situ measurements from CPTs and laboratory testing on samples retrieved from our borings. SPT "N" values obtained from hollow-stem auger borings were also used in our analyses since shallow ground water was not encountered.. The tip pressures are corrected for effective overburden stresses, taking into consideration both the ground water level at the time of exploration and the design ground water level, and stress reduction versus depth factors. The CPT method utilizes the soil behavior type index (I_C) to estimate the plasticity of the layers.

The results of our CPT analyses (CPT-1 through CPT-3) are presented in Appendix C on Figures C-1 through C-3; calculations for these CPTs are attached in Appendix C.

4.3.3 Summary

Our analyses indicate that several deeper layers could potentially experience liquefaction triggering that could result in soil softening and post-liquefaction total settlement ranging from less than ½ inch at the north end of the site to approximately ¾ inch at the southern end of the site based on the Yoshimine et al. (2006) method. As discussed in the SCEC report, differential movement for level ground sites over deep soil sites will be about half of the total settlement. In our opinion, differential settlements are anticipated to be on the order of ½ inch or less over a horizontal distance of 50 feet.

4.3.4 Ground Rupture Potential

The methods used to estimate liquefaction settlements assume that there is a sufficient cap of non-liquefiable material to prevent ground rupture or sand boils. For ground rupture to occur, the pore water pressure within the liquefiable soil layer will need to be great enough to break through the overlying non-liquefiable layer, which could cause significant ground deformation and settlement. The work of Youd and Garris (1995) indicates that the 20-foot thick layer of non-liquefiable cap is sufficient to prevent ground rupture; therefore the above total settlement estimates are reasonable.

4.4 LATERAL SPREADING

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water; typically lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope. As failure tends to propagate as block failures, it is difficult to analyze and estimate where the first tension crack will form.

The site is flanked by Arroyo del Valle along the entire south end of the site, with moderately steep banks up to approximately 25 feet high and inclined at approximately 1.2:1 to 2:1. Although the potential for liquefaction-induced settlement to occur at the site is considered moderate to high by the State, the magnitude of settlement is estimate to be ½ to ¾ inch or less. In addition, the potentially liquefiable layers appear to be relatively discontinuous.

As part of our preliminary liquefaction analyses, we calculated the Lateral Displacement Index (LDI) for potentially liquefiable layers based on methods presented in the 2008 monograph, *Soil Liquefaction During Earthquakes* (Idriss and Boulanger, 2008). LDI is a summation of the maximum shear strains versus depth, which is a measurement of the potential maximum displacement at that exploration location. Summations of the LDI values to a depth equal to twice the open face height were included. Estimated displacements in the area of CPT-2 and CPT-3 based on the LDI calculations are generally on the order of a few to several inches, which are anticipated to occur within 10 to 20 feet of the creek bank. To further evaluate the potential for creek bank instability at the south end of the site, we also performed a slope stability analysis, as summarized in the following sections.

4.5 SEISMIC SETTLEMENT/UNSATURATED SAND SHAKING

Loose unsaturated sandy soils can settle during strong seismic shaking. As the soils encountered at the site were predominantly stiff to very stiff clays and medium dense to dense sands, in our opinion, the potential for significant differential seismic settlement affecting the proposed improvements is low. Loose undocumented fills should be further evaluated during the design-level geotechnical investigation, as discussed in the "Conclusions" section of this report.

4.6 CREEK BANK STABILITY

4.6.1 Summary of Conditions

Based on our review of historic topographic maps dating back to 1906 and aerial photographs dating back to 1939, the Arroyo del Valle creek channel appears to have remained essentially unchanged, with the exception of a denser riparian canopy along the creek banks. Prior to completion of the Lake Del Valle dam (1968) that controls water flow into Arroyo del Valle, the creek channel appeared as a dry creek bed during periods of low rainfall. After construction of the dam, water flow in the creek appears to be nearly year-round. There were no indications of creek bank failures or significant changes in the creek channel alignment in the historic photographs reviewed.

As with most creeks incised into alluvial soils, there is a potential for future bank erosion, channel scour or minor shallow slumping along the stretch of Arroyo del Valle in the site vicinity. Since the site is located on the inside of a slight bend in the creek channel, it appears that toe scour has generally occurred on the southern (opposite) channel bank and deposition has generally occurred on the northern (adjacent) channel bank. This was also observed in the aerial photographs prior to year-round flows in the creek channel. Lastly, as discussed, the presence of relatively dense, mature vegetation (including several large trees), indicates that creek flows have had little to no recent impact on creek bank erosion.

Based on our site reconnaissance, subsurface exploration and review of available historic aerial photographs and topographic maps, in our opinion, the potential for future bank scour, erosion or shallow soil movement on the creek bank immediately adjacent to the site is low to moderate.

We performed a preliminary slope stability analysis to estimate potential impacts to the proposed development due to creek bank instability. Cross Section A-A' was prepared to represent the worst-case creek bank slope configuration, as shown on Figure 4. The ground surface elevations were based on topographic plans prepared by RJA dated August 29, 2012. A surface load of 500 psf was included to represent a typical residential structure supported on a mat foundation. A ground water depth of approximately 20 feet was also used in our analysis.

4.6.2 Method of Analysis

The lateral stability of a slope is influenced by the composition, inclination, and height of a slope. Stability is usually expressed as a ratio of resisting moments and forces divided by driving

moments and forces termed the factor of safety (FS). Factors of safety are calculated for static and seismic conditions. The stability of the existing creek bank slope was evaluated using the computer program GSTABL7 and circular and block modes of failure. Input parameters for the analysis include slope geometry, soil layers or zones, soil unit weights and strength parameters, and ground water conditions.

In evaluating the stability of slopes under seismic conditions, GSTABL7 uses a "pseudo-static" method of analysis. The pseudo-static method models the effects of transient or pulsating earthquake loading on a potential slide mass by using an equivalent sustained horizontal force determined as the product of a seismic coefficient and the weight of the potential slide mass. The slope is first analyzed to establish the minimum factor of safety under static conditions. Once this minimum failure surface is located, an additional horizontal force acting in the direction of potential failure is imposed on the sliding mass. This additional force is equal to the soil mass multiplied by a seismic coefficient.

The ground motion parameter used in a pseudo-static stability analysis is referred to as the seismic coefficient "K". CGS (2008) has published recommendations for the selection of the "K"-value in a publication titled "Guidelines for Evaluation and Mitigation of Seismic Hazards in California – SP 117A." The site is located near the active Calaveras Fault Zone and high ground shaking can be expected during a seismic event near the site. Based on an estimated maximum horizontal ground acceleration of 0.44g, a displacement threshold (u) of 15 centimeters, and an earthquake magnitude (M) of 6.8, we have performed our pseudo-static analysis using a "K"-value of 0.18, which, in our opinion, is reasonable for preliminary analytical purposes.

The minimum allowable factor of safety with respect to slope stability generally ranges from 1.5 to 2 for static conditions and 1.0 for seismic conditions. A pseudo-static factor of safety of one typically implies "movement" of the slope mass, but does not necessarily result in complete slope failure. On a preliminary basis, acceptable factors of safety for static and seismic (pseudo-static) conditions may be considered to be 1.5 and 1.0, respectively.

4.6.3 Soil Properties

To estimate the strength of the underlying alluvial and fluvial soils, we reviewed SPT N-value correlations from our borings and CPTs, and undrained shear strength correlations from CPT data to depths of approximately 36½ to 50 feet.

Due to the variability of the older alluvial soils, a range of soil strength parameters were estimated based on correlations from our recently completed explorations, and our experience and engineering judgment. For our analysis, the subsurface conditions were modeled as layers, including an upper fine-grained alluvial soil, underlain by older coarse-grained soils. Due to the presences of relatively thin potentially liquefiable sand layers below the ground water table, residual shear strength values were considered for short-term, undrained seismic load conditions based on correlated SPT N-values. The soil strength parameters used in our preliminary analysis are summarized in Table 2.

Table 2: Summary of Soil Strength Properties

Soil Description	Static Conditions		Seismic Conditions	
	Cohesion (psf)	Friction Angle (degrees)	Cohesion (psf)	Friction Angle (degrees)
Stiff Sandy Silt/Clay	100	25	1,500	0
Medium Dense to Dense Sand	0	34	0	32-34*
Stiff Clay	100	25	1,500	0
Dense Sand/Gravel	0	36	0	36

**A zone of potentially liquefiable, medium dense sand between depths of about 29 to 31 feet (CPT-3) was modeled with residual undrained shear strength of 800 psf for the seismic loading condition.*

4.6.4 Results of the Analysis

We computed the minimum static and seismic factors of safety with respect to sliding for Generalized Cross Section A-A' shown in Figure 4, which was considered to represent the steepest and highest creek bank condition adjacent to the proposed development. The results of our analyses are summarized in the following table, and indicate that the resulting factors of safety are generally above minimum acceptable levels of 1.5 for static loading conditions. For seismic loading conditions, the factor of safety was estimated to range from 1.3 to 1.5, which is well above the minimum acceptable of 1.0.

Table 3: Results of Preliminary Creek Bank Stability Analyses – Cross Section A-A'

Description	Factor of Safety	
	Static	Pseudo-Static*
Section A-A' (circular failure modes)	1.6 to 2.0	1.4 to 1.5
Section A-A' (block failure modes)	n/a	1.3 to 1.5

*Seismic coefficient = 0.18

4.6.5 Slope Deformation Analysis

Because of the proximity of some of the proposed residential lots to the top of the existing creek bank, we performed a preliminary review of the potential for slope deformation during seismic events. The procedure involves calculating the yield acceleration, defined as the inertial force necessary to cause the static factor of safety to reach 1.0, from the traditional limit-equilibrium slope stability analysis, for a single critical failure surface. A simplified Newmark analysis was performed with GSTABL7 to estimate a probable maximum displacement. This analysis, in combination with the results of the pseudo-static analysis, is typically used to evaluate the final

design-level slope to determine if the estimated movement is acceptable or if mitigation is required. The results of our slope deformation analysis indicate probable maximum displacements near the top of the bank on the order of one inch or less.

Based on our analysis and the estimated factors of safety, in our opinion, displacements will be limited during strong ground shaking; however, some ground displacement is possible within approximately 10 feet of the top of creek bank.

Based on our review of the conceptual development plan, the building setback from the top of the creek bank slope could range from approximately 15 to 20 feet. On a preliminary basis, the proposed residential structures should be set back at least 15 feet from the top of the creek bank. Proposed site improvements to be located within 15 feet of the top of creek bank, such as underground utilities, fences or backyard improvements, may experience some movement following strong ground shaking. Further discussion of long-term creek bank stability and building setbacks from the creek are presented in the "Conclusions" section of this report.

4.7 FLOODING

Based on our internet search of the Federal Emergency Management Agency (FEMA) flood map public database, the site is generally located within Zone X, determined as an "area of 0.2 percent annual chance flood; areas of 1 percent annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; areas protected by levees from 1 percent annual chance flood." The adjacent Arroyo del Valle is generally considered to be within Zone AE, which is considered to be a special flood hazard area subject to inundation by the 1 percent annual chance flood and a base flood elevation estimated to be at approximately Elevation 343 feet. We recommend the project civil engineer be retained to confirm this information and verify the base flood elevation, if appropriate.

The Association of Bay Area Governments has compiled a database of Dam Failure Inundation Hazard Maps (ABAG, 1995). The generalized hazard maps were prepared by dam owners as required by the State Office of Emergency Services; they are intended for planning purposes only. Based on our review of these maps, the site is located within a dam failure inundation area for the Del Valle Reservoir.

SECTION 5: CONCLUSIONS

5.1 SUMMARY

From a geotechnical viewpoint, the project is feasible provided the concerns listed below are addressed in the project design. The preliminary recommendations that follow are intended for conceptual planning and preliminary design. A design-level geotechnical investigation should be performed once site development plans are prepared indicating where proposed structures are planned. The design-level investigation findings will be used to confirm the preliminary recommendations and develop detailed recommendations for design and construction. Descriptions of each geotechnical concern with brief outlines of our preliminary recommendations follow the listed concerns.

- Potential for liquefaction-induced settlements
- Presence of localized undocumented fills
- Building setbacks adjacent to Arroyo del Valle

5.1.1 Potential for Liquefaction-Induced Settlements

As discussed, our preliminary liquefaction analysis indicates that there is a potential for liquefaction of localized sand layers during a significant seismic event. Although the potential for liquefied sands to vent to the ground surface through cracks in the surficial soils is low, our analysis indicates that liquefaction-induced settlement on the order of ¼ to ¾ inch could occur, resulting in differential settlement up to ½ inch over a horizontal distance of 50 feet. Foundations will need to be designed to tolerate the anticipated total and differential settlements. Preliminary foundation recommendations are presented in the "Foundations" section.

5.1.2 Undocumented Fill

Approximately 1 foot of undocumented fill was encountered in our geotechnical explorations. As discussed in the "Subsurface Conditions" section of this report, other localized fills may be present in former septic tank, sump pump and leach field areas. Due to the potential variability of undocumented fills, on a preliminary basis, we recommend that all undocumented fill material be removed and replaced with compacted fill. Preliminary recommendations addressing this concern are presented in the "Earthwork" section of this report.

5.1.3 Setbacks Adjacent to Arroyo del Valle

Our evaluation of potential creek bank instability was based on our site reconnaissance, research of published and unpublished geologic maps and reports, review of historic aerial photographs, our subsurface exploration and our preliminary creek bank stability analysis. The intent of this work was to identify the presence of existing landslides or other indications of potential future creek bank instability.

As discussed in the "Geologic Hazards" section, as with most creeks incised into alluvial soils, there is a potential for future bank erosion or channel scour along the stretch of Arroyo del Valle in the site vicinity. Since the creek channel curves inward near the site, it appears that active toe scour is occurring on the southern (opposite) channel bank and deposition has generally occurred on the northern (adjacent) channel bank; however, channel scour remains a potential concern. Although the potential for creek bank movement is considered low under static loading conditions, there is a low to moderate potential for bank movement during or following strong ground shaking in the vicinity based on our slope stability analysis.

Therefore, on a preliminary basis, we recommend that building foundations be setback at least 15 feet from the top of the creek bank. If reduced building setbacks are required, it may be necessary to mitigate potential slope movement directly behind the top of bank. This could

possibly consist of installing buried secant or stitch piers or other ground improvement near the top of the creek bank. Other site improvements, such as swimming pools, patios, fences or sound walls constructed near the top of the creek bank may be susceptible to movement due to long-term soil creep or localized shallow slumping adjacent to the top of the creek bank during periods of heavy rainfall or peak channel flow. Foundations supporting these improvements will likely need to be deeper than conventional fence posts or wall piers; pools and slabs in this area may need to be more heavily reinforced. Final building setbacks from the top of the Arroyo del Valle creek bank should be further evaluated during the design-level geotechnical investigation.

5.2 DESIGN-LEVEL GEOTECHNICAL INVESTIGATION

The preliminary recommendations contained in this study were based on limited site development information and limited exploration. As site conditions may vary significantly between the small-diameter explorations performed during this investigation, we also recommend that we be retained to 1) perform a design-level geotechnical investigation, once detailed site development plans are available; 2) to review the geotechnical aspects of the project structural, civil, and landscape plans and specifications, allowing sufficient time to provide the design team with any comments prior to issuing the plans for construction; and 3) be present to provide geotechnical observation and testing during earthwork and foundation construction.

SECTION 6: EARTHWORK

6.1 ANTICIPATED EARTHWORK MEASURES

On a preliminary basis, we recommend that any existing debris, slabs, septic tanks, sump pumps, leach fields, and/or abandoned underground utilities be removed entirely and the resulting excavations backfilled with engineered fill. Additionally, any native soils that are disturbed during demolition of the existing improvements should also be removed and replaced as engineered fill. Any existing undocumented fill encountered during grading, including fill surrounding former septic tank, sump pumps and leach field areas, will likely need to be over-excavated down to native soils within the proposed building footprints and 5 feet laterally beyond. In general, shallow undocumented fill will likely need to be over-excavated approximately 1 foot in future building areas prior to placing engineered fill.

All on-site soils below the stripped layer are suitable for use as fill at the site. Imported fill material for use as general fill should be predominantly granular with a Plasticity Index of 15 or less. All fill as well as scarified surface soils in those areas to receive fill or slabs-on-grade should be compacted to at least 90 percent relative compaction as determined by ASTM Test Designation D-1557, latest edition; and be at least 2 percent above optimum. The upper 6 inches of subgrade in pavement areas and all aggregate base materials should be compacted to at least 95 percent relative compaction (ASTM D-1557, latest edition). Utility trench backfill should be compacted to at least 90 percent relative compaction (ASTM D-1557, latest edition) by mechanical means only.

Surface water runoff should not be allowed to pond adjacent to building foundations, slabs-on-grade, or pavements. Hardscape surfaces should slope at least 1 to 2 percent towards suitable discharge facilities; landscape areas should slope at least 2 to 3 percent away from buildings. Runoff should not be allowed to flow over the Arroyo del Valle creek bank. In addition, storm water quality improvements, such as bio-infiltration swales or ponds, should not be constructed near the top of the creek bank.

SECTION 7: FOUNDATIONS

7.1 SUMMARY OF RECOMMENDATIONS

On a preliminary basis, the proposed single-family residential structures may be supported on shallow foundations provided the recommendations in the "Earthwork" section and the sections below are followed. As mentioned above, we are recommending a minimum building setback of at least 15 feet from the top of creek bank.

7.2 SEISMIC DESIGN CRITERIA

We assume that the project structural design will be based on the 2010 California Building Code (CBC), which provides criteria for the seismic design of buildings in Chapter 16. The "Seismic Coefficients" used to design buildings are established based on a series of tables and figures addressing different site factors, including the soil profile in the upper 100 feet below grade and mapped spectral acceleration parameters based on distance to the controlling seismic source/fault system. Based on our borings and review of local geology, the site is underlain by deep alluvial soils with typical SPT "N" values between 15 and 50 blows per foot. Therefore, we have classified the site as Soil Classification D.

7.3 SHALLOW FOUNDATIONS

7.3.1 Post-Tensioned Mat Foundations

The planned residential structures may be supported on post-tensioned (PT) concrete mat foundations, which should be designed in accordance with the procedures developed by the Post-Tensioning Institute (2007) and the 2010 California Building Code.

To reduce potential differential movement, on a preliminary basis, mats should be designed for a maximum average areal bearing pressure of 500 psf for dead plus live loads; at column or wall loading, the maximum localized allowable bearing pressure should be limited to about 2,000 to 3,000 psf. When evaluating wind and seismic conditions, allowable bearing pressures may be increased by one-third. Additional reinforcing steel may be required to help span irregularities and differential settlement.

7.3.2 Mat Foundation Settlement

We estimate that differential due to combined static and seismic settlements will be on the order of ½ inch or less across a typical mat foundation area.

SECTION 8: CONCRETE SLABS AND PEDESTRIAN PAVEMENTS

8.1 EXTERIOR FLATWORK

Exterior concrete flatwork subject to pedestrian and/or occasional light pick up loading should be at least 4 inches thick and supported on 4 inches of aggregate base material overlying prepared subgrade. Walkways and patios can likely be constructed directly over prepared subgrade soils.

SECTION 9: VEHICULAR PAVEMENTS

9.1 ASPHALT CONCRETE

The following asphalt concrete pavement recommendations tabulated below are based on the Procedure 608 of the Caltrans Highway Design Manual, estimated traffic indices for various pavement-loading conditions, and on an assumed design R-value of 10. The design R-value was chosen based on experience with similar soil conditions in this portion of the City of Pleasanton and engineering judgment considering the variable surface conditions.

Table 4: Preliminary Asphalt Concrete Pavement Recommendations (R-value = 10)

Design Traffic Index (TI)	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)	Total Pavement Section Thickness (inches)
4.0	2.5	7.0	9.0
4.5	2.5	9.0	11.5
5.0	3.0	9.0	12.0
5.5	3.0	11.0	14.0
6.0	3.5	12.0	15.5
6.5	4.0	13.0	17.0

As required by the City of Pleasanton, additional R-value testing of exposed subgrade soils should be performed once street cuts are made to confirm the final design R-value. If testing indicates a significantly higher R-value, it may be feasible to reduce pavement sections.

Frequently, the full asphalt concrete section is not constructed prior to construction traffic loading. This can result in significant loss of asphalt concrete layer life, rutting, or other pavement failures. To improve the pavement life and reduce the potential for pavement distress through construction, we recommend the full design asphalt concrete section be constructed prior to construction traffic loading. Alternatively, a higher traffic index may be chosen for the areas where construction traffic will use the pavements.

SECTION 10: LIMITATIONS

This report, an instrument of professional service, has been prepared for the sole use of Ponderosa Homes specifically to support the design of the proposed residential development located at 4202 Stanley Boulevard in Pleasanton, California. The opinions, conclusions, and preliminary recommendations presented in this report have been formulated in accordance with accepted geotechnical engineering practices that exist in Northern California at the time this report was prepared. No warranty, expressed or implied, is made or should be inferred.

Preliminary recommendations in this report are based upon the soil and ground water conditions encountered during our limited subsurface exploration. Preparation of a design-level investigation is anticipated to provide additional information and refine the preliminary recommendations presented herein. If variations or unsuitable conditions are encountered during the construction phase, Cornerstone must be contacted to provide supplemental recommendations, as needed.

Ponderosa Homes may have provided Cornerstone with plans, reports and other documents prepared by others. Ponderosa Homes understands that Cornerstone reviewed and relied on the information presented in these documents and cannot be responsible for their accuracy.

Cornerstone prepared this report with the understanding that it is the responsibility of the owner or his representatives to see that the recommendations contained in this report are presented to other members of the design team and incorporated into the project plans and specifications, and that appropriate actions are taken to implement the geotechnical recommendations during construction.

Conclusions and recommendations presented in this report are valid as of the present time for the development as currently planned. Changes in the condition of the property or adjacent properties may occur with the passage of time, whether by natural processes or the acts of other persons. In addition, changes in applicable or appropriate standards may occur through legislation or the broadening of knowledge. Therefore, the conclusions and recommendations presented in this report may be invalidated, wholly or in part, by changes beyond Cornerstone's control. This report should be reviewed by Cornerstone after a period of three (3) years has elapsed from the date of this report. In addition, if the current project design is changed, then Cornerstone must review the proposed changes and provide supplemental recommendations, as needed.

An electronic transmission of this report may also have been issued. While Cornerstone has taken precautions to produce a complete and secure electronic transmission, please check the electronic transmission against the hard copy version for conformity.

Recommendations provided in this report are based on the assumption that Cornerstone will be retained to provide observation and testing services during construction to confirm that conditions are similar to that assumed for design, and to form an opinion as to whether the work has been performed in accordance with the project plans and specifications. If we are not retained for these services, Cornerstone cannot assume any responsibility for any potential

claims that may arise during or after construction as a result of misuse or misinterpretation of Cornerstone's report by others. Furthermore, Cornerstone will cease to be the Geotechnical-Engineer-of-Record if we are not retained for these services.

SECTION 11: REFERENCES

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AERIAL PHOTOGRAPHS

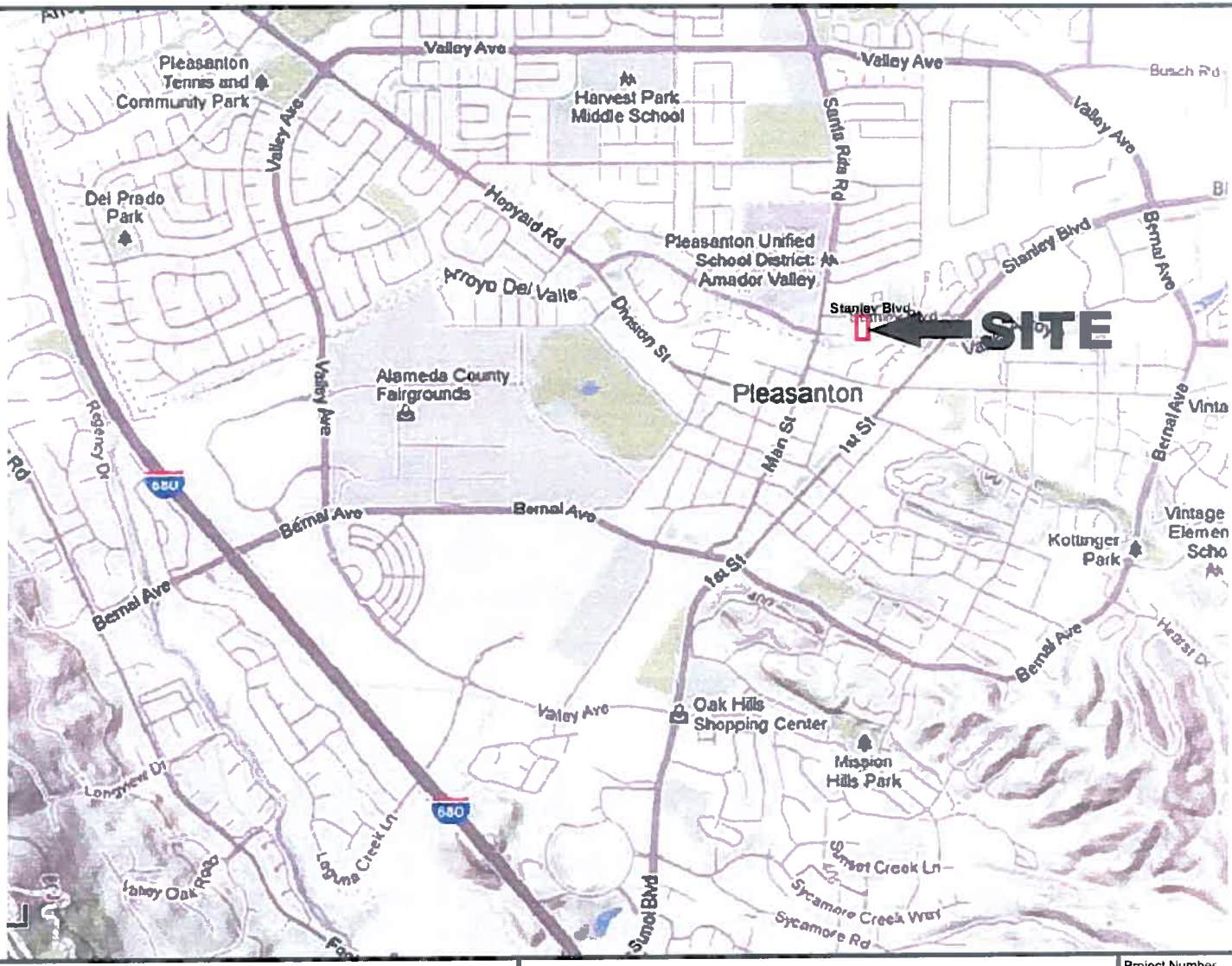
Geomorphic features on the following aerial photographs obtained from Environmental Data Resources (EDR) were interpreted as part of this investigation:

Year	Scale	Type	Source
1939	1"=555'	B/W	Fairchild
1949	1"=655'	B/W	USGS
1958	1"=555'	B/W	Cartwright
1965	1"=333'	B/W	Cartwright
1974	1"=601'	B/W	NASA
1982	1"=690'	B/W	USGS
1998	1"=666'	B/W	USGS
2005	1"=500'	Color	EDR
2006	1"=500'	Color	EDR

HISTORIC TOPOGRAPHIC MAPS:

Geomorphic features on the following USGS topographic maps obtained from Environmental Data Resources (EDR) were interpreted as part of this investigation:

Year	Quad	Series	Scale
1906	Pleasanton	15-Minute	1:62500
1947	Pleasanton	15-Minute	1:50000
1953	Livermore	7.5-Minute	1:24000
1961	Livermore	7.5-Minute	1:24000
1968	Livermore	7.5-Minute	1:24000
1973	Livermore	7.5-Minute	1:24000
1980	Livermore	7.5-Minute	1:24000

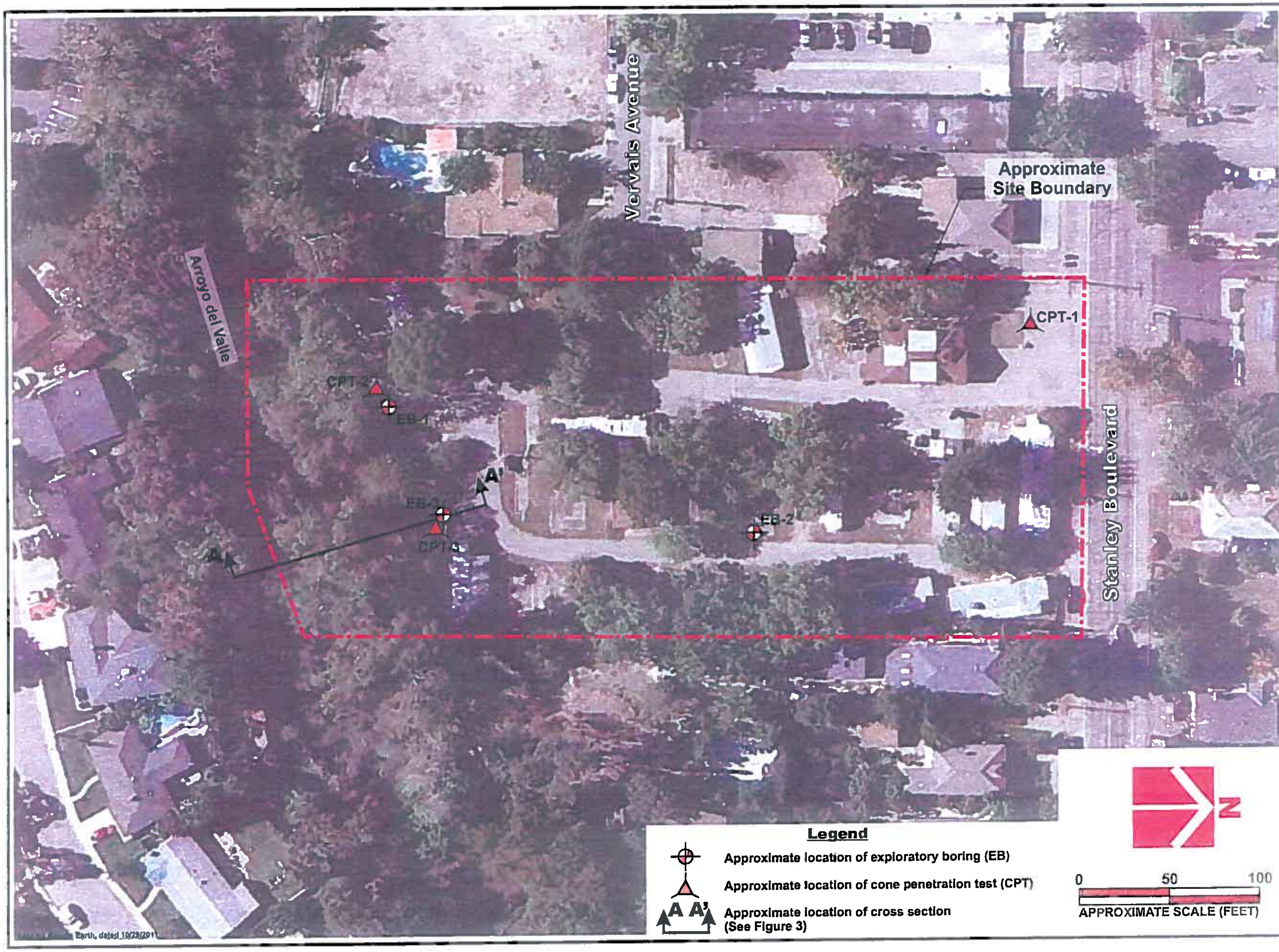


CORNERSTONE EARTH GROUP

Vicinity Map

4202 Stanley Boulevard
Pleasanton, CA

Project Number	132-5-1
Figure Number	Figure 1
Date	January 2012
Drawn By	RRN

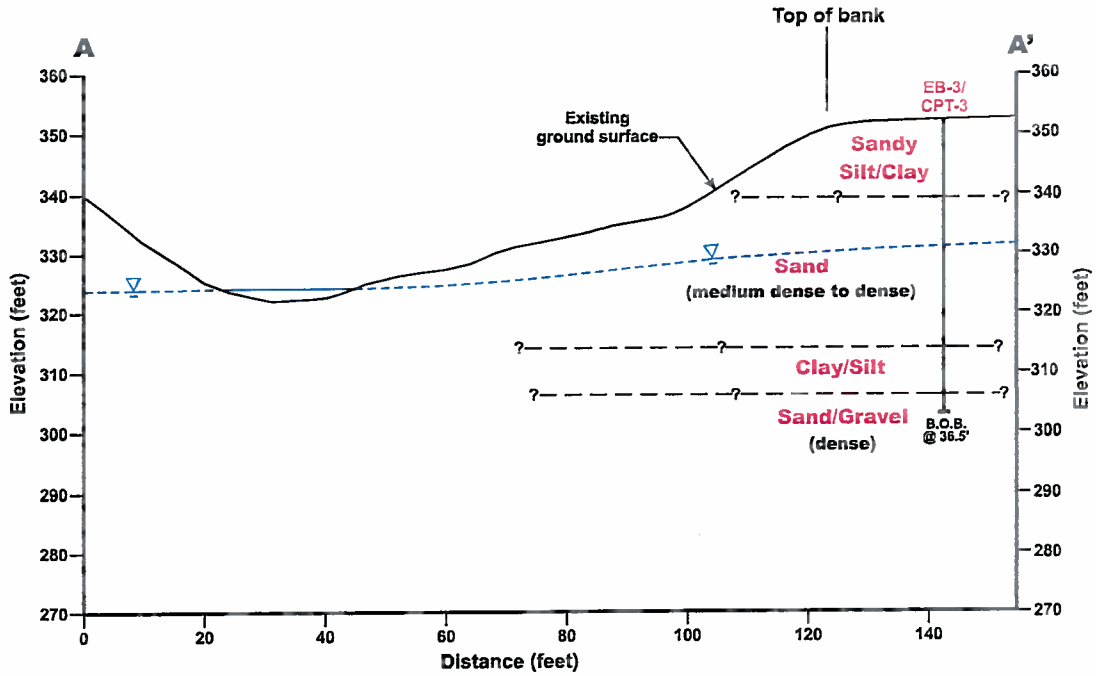


CORNERSTONE EARTH GROUP

Site Plan

4202 Stanley Boulevard
Pleasanton, CA

Project Number	132-5-1
Figure Number	Figure 2
Date	January 2012
Drawn By	RRN



Section A-A'
(View Looking West)
1"=20' H:V

Symbols

- Assumed high ground water level
- Estimated contact between soil layers; queried where uncertain

Notes:
1) Surficial fills associated with existing pavements, landscaping or utilities are not shown.
2) The subsurface profile is conceptual and is based on limited subsurface data obtained from widely spaced borings. Actual subsurface conditions may vary significantly between borings.
3) See Figure 2 for location of cross section.

Project Number 132-5-1
Figure Number Figure 3
Date January 2013
Drawn By RRN

Generalized Cross Section A-A'

4202 Stanley Boulevard
Pleasanton, CA

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APPENDIX A: FIELD INVESTIGATION

The field investigation consisted of a surface reconnaissance and a subsurface exploration program using truck-mounted, hollow-stem auger drilling equipment and 20-ton truck-mounted Cone Penetration Test equipment. Three 8-inch-diameter exploratory borings were drilled on January 16 and December 18, 2012, to depths ranging from approximately 15 to 40 feet. Three CPT soundings were also performed in accordance with ASTM D 5778-95 (revised, 2002) on January 19, 2012, to depths of approximately 50 feet. The approximate exploration locations are shown on the Site Plan, Figure 2. The soils encountered were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (ASTM D2488). Boring logs, as well as a key to the classification of the soil, are included as part of this appendix.

Exploration locations were approximated using existing site boundaries and other site features as references. Exploration elevations were not determined. The exploration locations should be considered accurate only to the degree implied by the method used.

Representative soil samples were obtained from the borings at selected depths. All samples were returned to our laboratory for evaluation and appropriate testing. The standard penetration resistance blow counts were obtained by dropping a 140-pound hammer through a 30-inch free fall. The 2-inch O.D. split-spoon sampler was driven 18 inches and the number of blows was recorded for each 6 inches of penetration (ASTM D1586). 2.5-inch I.D. samples were obtained using a Modified California Sampler driven into the soil with the 140-pound hammer previously described. Unless otherwise indicated, the blows per foot recorded on the boring log represent the accumulated number of blows required to drive the last 12 inches. The various samplers are denoted at the appropriate depth on the boring logs.

The CPT soundings involved advancing an instrumented cone-tipped probe into the ground while simultaneously recording the resistance at the cone tip (q_c) and along the friction sleeve (f_s) at approximately 5-centimeter intervals. Based on the tip resistance and tip to sleeve ratio (R_f), the CPT classified the soil behavior type and estimated engineering properties of the soil, such as equivalent Standard Penetration Test (SPT) blow count, internal friction angle within sand layers, and undrained shear strength in silts and clays. A pressure transducer behind the tip of the CPT cone measured pore water pressure (u_2). Graphical logs of the CPT data is included as part of this appendix.

Field tests included an evaluation of the unconfined compressive strength of the soil samples using a pocket penetrometer device. The results of these tests are presented on the individual boring logs at the appropriate sample depths.

Attached exploration logs and related information depict subsurface conditions at the locations indicated and on the date designated on the logs. Subsurface conditions at other locations may differ from conditions occurring at these exploration locations. The passage of time may result in altered subsurface conditions due to environmental changes. In addition, any stratification lines on the logs represent the approximate boundary between soil types and the transition may be gradual.

UNIFIED SOIL CLASSIFICATION (ASTM D-2487-98)

MATERIAL TYPES	CRITERIA FOR ASSIGNING SOIL GROUP NAMES			GROUP SYMBOL	SOIL GROUP NAMES & LEGEND
COARSE-GRAINED SOILS >50% RETAINED ON NO. 200 SIEVE	GRAVELS >50% OF COARSE FRACTION RETAINED ON NO 4. SIEVE	CLEAN GRAVELS <5% FINES	Cu>4 AND 1<Cc<3	GW	WELL-GRADED GRAVEL
			Cu>4 AND 1>Cc>3	GP	POORLY-GRADED GRAVEL
		GRAVELS WITH FINES >12% FINES	FINES CLASSIFY AS ML OR CL	GM	SILTY GRAVEL
			FINES CLASSIFY AS CL OR CH	GC	CLAYEY GRAVEL
	SANDS >50% OF COARSE FRACTION PASSES ON NO 4. SIEVE	CLEAN SANDS <5% FINES	Cu>6 AND 1<Cc<3	SW	WELL-GRADED SAND
			Cu>6 AND 1>Cc>3	SP	POORLY-GRADED SAND
		SANDS AND FINES >12% FINES	FINES CLASSIFY AS ML OR CL	SM	SILTY SAND
			FINES CLASSIFY AS CL OR CH	SC	CLAYEY SAND
FINE-GRAINED SOILS >50% PASSES NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT<50	INORGANIC	PI>7 AND PLOTS>"A" LINE	CL	LEAN CLAY
			PI>4 AND PLOTS<"A" LINE	ML	SILT
		ORGANIC	LL (oven dried)/LL (not dried)<0.75	OL	ORGANIC CLAY OR SILT
	SILTS AND CLAYS LIQUID LIMIT>50	INORGANIC	PI PLOTS >"A" LINE	CH	FAT CLAY
			PI PLOTS <"A" LINE	MH	ELASTIC SILT
		ORGANIC	LL (oven dried)/LL (not dried)<0.75	OH	ORGANIC CLAY OR SILT
HIGHLY ORGANIC SOILS		PRIMARILY ORGANIC MATTER, DARK IN COLOR, AND ORGANIC ODOR		PT	PEAT

OTHER MATERIAL SYMBOLS

- Poorly-Graded Sand with Clay
- Clayey Sand
- Sandy Silt
- Artificial/Undocumented Fill
- Poorly-Graded Gravelly Sand
- Topsoil
- Well-Graded Gravel with Clay
- Well-Graded Gravel with Silt
- Sand
- Silt
- Well Graded Gravelly Sand
- Gravelly Silt
- Asphalt
- Boulders and Cobble

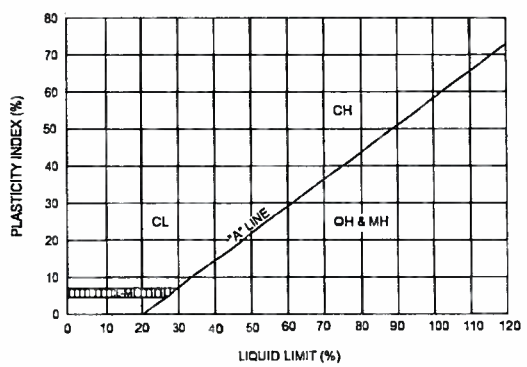
SAMPLER TYPES

- SPT
- Modified California (2.5" I.D.)
- Rock Core
- Shelby Tube
- No Recovery
- Grab Sample

ADDITIONAL TESTS

CA	-	CHEMICAL ANALYSIS (CORROSIVITY)	PI	-	PLASTICITY INDEX
CD	-	CONSOLIDATED DRAINED TRIAXIAL	SW		SWELL TEST
CN	-	CONSOLIDATION	TC	-	CYCLIC TRIAXIAL
CU	-	CONSOLIDATED UNDRAINED TRIAXIAL	TV	-	TORVANE SHEAR
DS	-	DIRECT SHEAR	UC	-	UNCONFINED COMPRESSION
PP	-	POCKET PENETROMETER (TSF)	(1.5)	-	(WITH SHEAR STRENGTH IN KSF)
(3.0)	-	(WITH SHEAR STRENGTH IN KSF)			
RV	-	R-VALUE	UU	-	UNCONSOLIDATED UNDRAINED TRIAXIAL
SA	-	SIEVE ANALYSIS: % PASSING #200 SIEVE			
	-	WATER LEVEL			

PLASTICITY CHART



PENETRATION RESISTANCE (RECORDED AS BLOWS / FOOT)

SAND & GRAVEL		SILT & CLAY		
RELATIVE DENSITY	BLOWS/FOOT*	CONSISTENCY	BLOWS/FOOT*	STRENGTH** (KSF)
VERY LOOSE	0 - 4	VERY SOFT	0 - 2	0 - 0.25
LOOSE	4 - 10	SOFT	2 - 4	0.25 - 0.5
MEDIUM DENSE	10 - 30	MEDIUM STIFF	4 - 8	0.5-1.0
DENSE	30 - 50	STIFF	8 - 15	1.0 - 2.0
VERY DENSE	OVER 50	VERY STIFF	15 - 30	2.0 - 4.0
		HARD	OVER 30	OVER 4.0

* NUMBER OF BLOWS OF 140 LB HAMMER FALLING 30 INCHES TO DRIVE A 2 INCH O.D. (1-3/8 INCH I.D.) SPLIT-BARREL SAMPLER THE LAST 12 INCHES OF AN 18-INCH DRIVE (ASTM-1586 STANDARD PENETRATION TEST).

** UNDRAINED SHEAR STRENGTH IN KIPS/SQ. FT. AS DETERMINED BY LABORATORY TESTING OR APPROXIMATED BY THE STANDARD PENETRATION TEST, POCKET PENETROMETER, TORVANE, OR VISUAL OBSERVATION.

CORNERSTONE EARTH GROUP

LEGEND TO SOIL DESCRIPTIONS

Figure Number A-1

BORING NUMBER EB-1

CORNERSTONE EARTH GROUP

PROJECT NAME 4202 Stanley Boulevard
PROJECT NUMBER 132-5-1
PROJECT LOCATION Pleasanton, CA
DATE STARTED 1/16/12 DATE COMPLETED 1/16/12
GROUND ELEVATION _____ BORING DEPTH 40 ft.
DRILLING CONTRACTOR Exploration Geoservices, Inc.
LATITUDE _____ LONGITUDE _____
DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY NBZ
▽ AT TIME OF DRILLING Not Encountered
NOTES _____
▽ AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT, %	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
	0		**Silty Sand with Gravel (SM) [Fill]** medium dense, moist, grayish brown, fine to coarse sand, fine angular gravel	41	MC-1A	97	4		
			Poorly Graded Sand with Silt and Gravel (SC-SM) dense to very dense, moist, brown, fine sand, some coarse sand, fine subangular gravel, some coarse subangular to subrounded gravel	50/5"	MC-2	103	2		
	5			42	SPT-3		2		7
				48	SPT-4		2		8
	10								
				56	SPT-5		2		
	15								
				71	SPT-6		4		
	20								
				65	SPT				
	25								
				53	SPT-8		5		
	30								
			Sandy Silty Clay (CL-ML) hard, moist, brown, fine to medium sand, low plasticity	44	SPT-9		9		
	35								
				39	SPT				
	40		Bottom of Boring at 40.0 feet.						

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

BORING NUMBER EB-2

CORNERSTONE EARTH GROUP

PROJECT NAME 4202 Stanley Boulevard
PROJECT NUMBER 132-5-1
PROJECT LOCATION Pleasanton, CA
DATE STARTED 1/16/12 DATE COMPLETED 1/16/12
GROUND ELEVATION _____ BORING DEPTH 16.5 ft.
DRILLING CONTRACTOR Exploration Geoservices, Inc.
LATITUDE _____ LONGITUDE _____
DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY NBZ
▽ AT TIME OF DRILLING Not Encountered
NOTES _____
▼ AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT, %	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
	0		**Sandy Silt (ML) [Fill]** very stiff, moist, brown, fine to medium sand, low plasticity	11	MC-1A	87	7	4	
			Silt with Sand (ML) very stiff, moist, brown, fine to medium sand, low plasticity Liquid Limit = 25, Plastic Limit = 21	14	MC-2B	75	7		
	5			8	SPT-3		9		79
			Sandy Silt (ML) medium stiff, moist, brown, fine sand, low plasticity	10	SPT-4		11		63
	10								
			Silty Sand (SM) medium dense, moist, brown, fine sand	19	MC-5B	98	3		
	15			16	SPT-6				
			Bottom of Boring at 16.5 feet.						
	20								
	25								
	30								
	35								

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

BORING NUMBER EB-3

CORNERSTONE EARTH GROUP

PROJECT NAME 4202 Stanley Boulevard
PROJECT NUMBER 132-5-1
PROJECT LOCATION Pleasanton, CA
DATE STARTED 12/18/12 DATE COMPLETED 12/18/12
GROUND ELEVATION _____ BORING DEPTH 36.5 ft.
DRILLING CONTRACTOR Exploration Geoservices, Inc.
LATITUDE _____ LONGITUDE _____
DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY RRB
AT TIME OF DRILLING Not Encountered
NOTES _____
AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

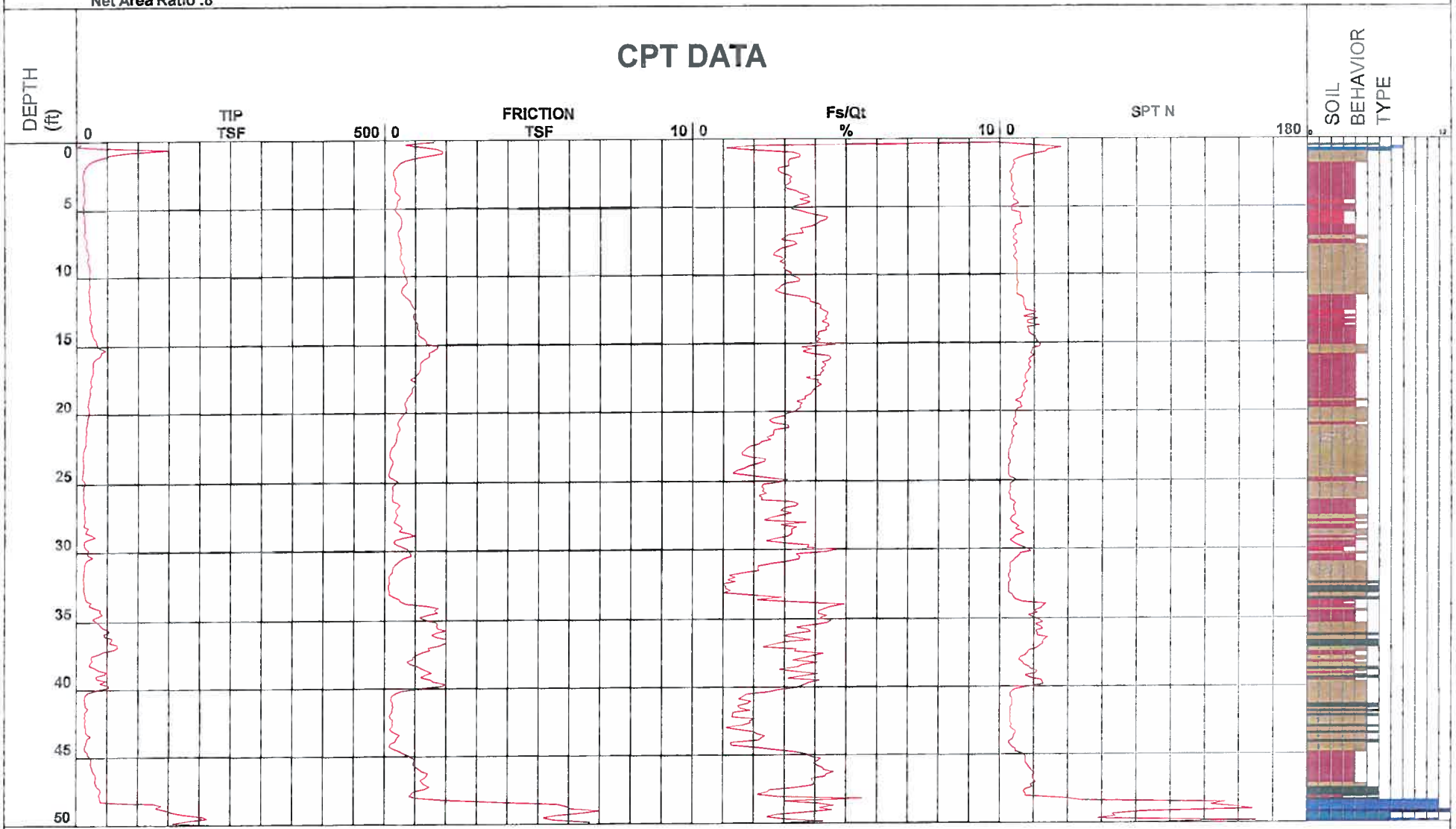
ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT, %	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL) 1.0 2.0 3.0 4.0
	0		**Sandy Silt (ML)** very stiff to hard, moist, brown, fine sand, low plasticity	5	MC-1	84	14			
				12	MC-2B	97	15			
	5			16	MC-3B	90	13			>4.5
			trace fine rounded gravel @ 8'	22	MC-4B	108	8			>4.5
	10									
			Poorly Graded Sand with Silt (SP-SM) medium dense to dense, moist, brown, fine to medium sand, some fine rounded to subangular gravel	29	MC-5A	109	3			
				26	SPT-6		2		5	
	15			31	SPT-7		5			
			fine to coarse gravel							
	20		increase in coarse sand @ 20'	51	SPT-8		2			
	25		becomes medium dense	17	SPT-9		3		7	
	30		becomes very dense	65	SPT-10		3			
	35			54	SPT-11		3			
			Bottom of Boring at 36.5 feet.							

Cornerstone Earth Group

Project	4202 Stanley Blvd Pleasanton	Operator	RA/TF	Filename	SDF(901).cpt
Job Number	132-5-1	Cone Number	DSG0906	GPS	
Hole Number	CPT-01	Date and Time	1/19/2012 3:53:58 PM	Maximum Depth	50.36 ft
Water Table Depth	12.00 ft				

Net Area Ratio .8

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 10cm squared

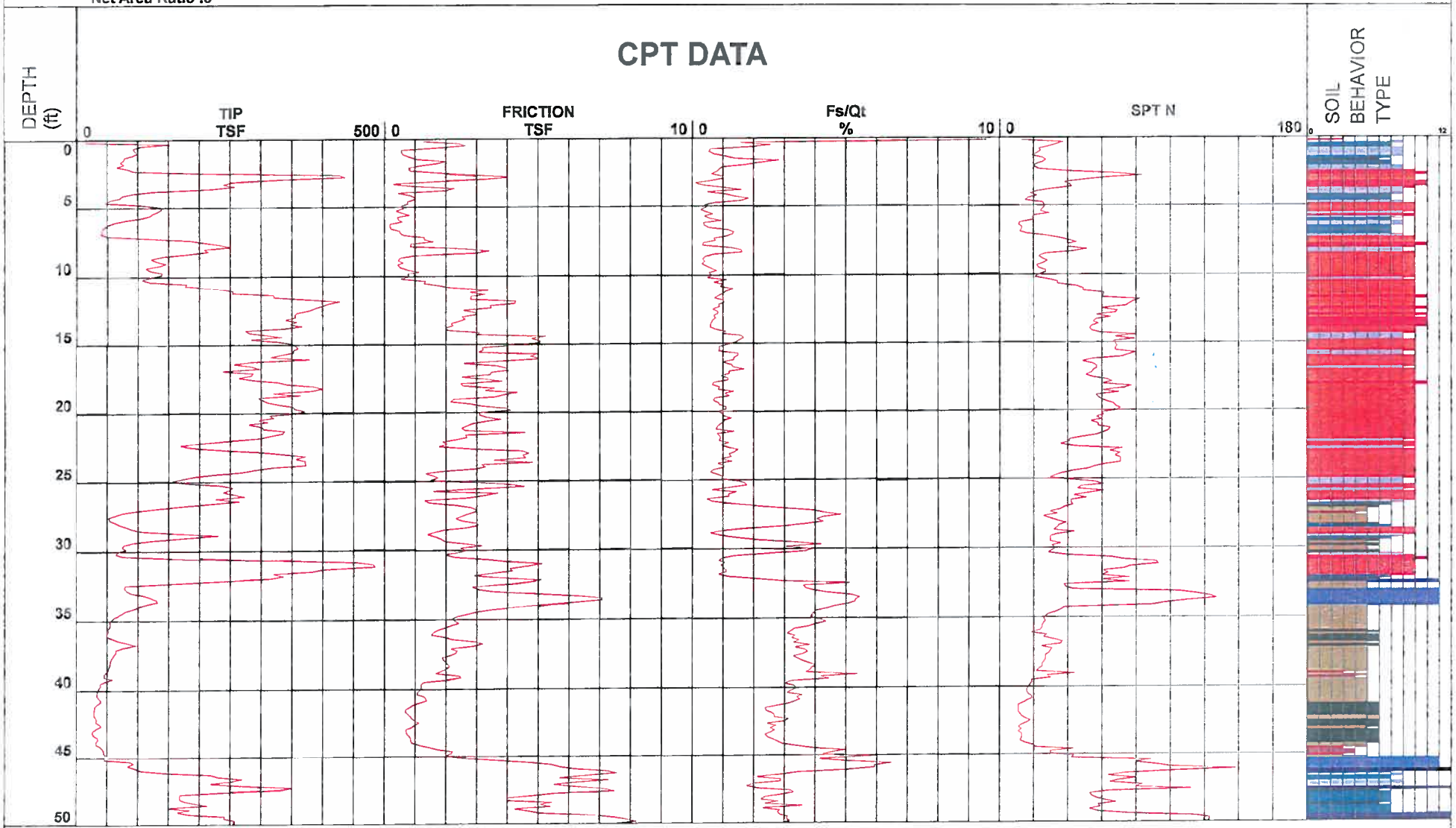
*Soil behavior type and SPT based on data from UBC-1983

Cornerstone Earth Group

Project	4202 Stanley Blvd Pleasanton	Operator	RA/TF	Filename	SDF(902).cpt
Job Number	132-5-1	Cone Number	DSG0906	GPS	
Hole Number	CPT-02	Date and Time	1/19/2012 4:35:55 PM	Maximum Depth	50.52 ft
Water Table Depth	12.00 ft				

Net Area Ratio .8

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 10cm squared

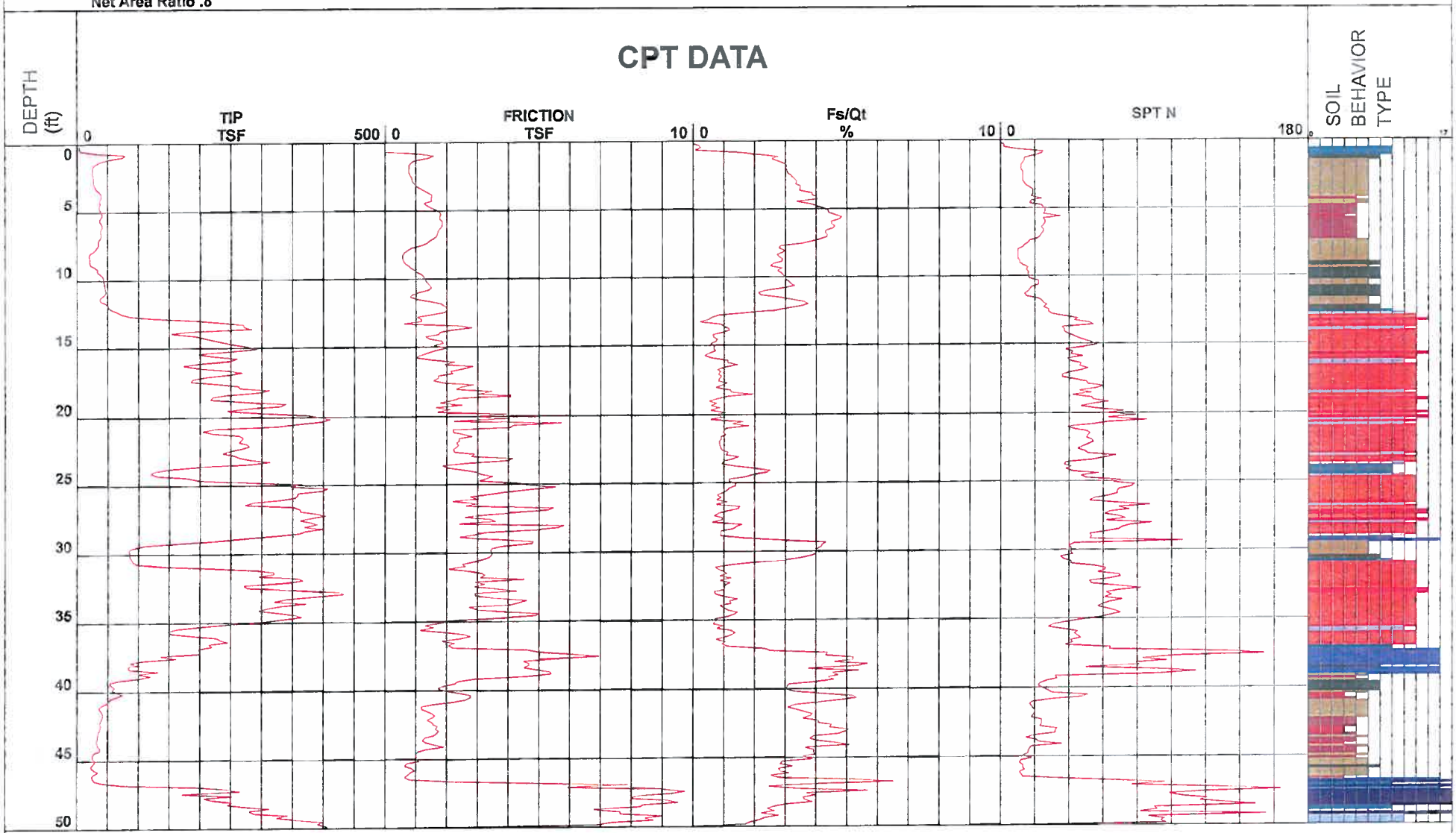
*Soil behavior type and SPT based on data from UBC-1983

Cornerstone Earth Group

Project	4202 Stanley Blvd Pleasanton	Operator	RA/TF	Filename	SDF(903).cpt
Job Number	132-5-1	Cone Number	DSG0906	GPS	
Hole Number	CPT-03	Date and Time	1/19/2012 5:30:18 PM	Maximum Depth	50.20 ft
Water Table Depth	12.00 ft				

Net Area Ratio .8

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 10cm squared

*Soil behavior type and SPT based on data from UBC-1983

APPENDIX B: LABORATORY TEST PROGRAM

The laboratory testing program was performed to evaluate the physical and mechanical properties of the soils retrieved from the site to aid in verifying soil classification.

Moisture Content: The natural water content was determined (ASTM D2216) on 24 samples of the materials recovered from the borings. These water contents are recorded on the boring logs at the appropriate sample depths.

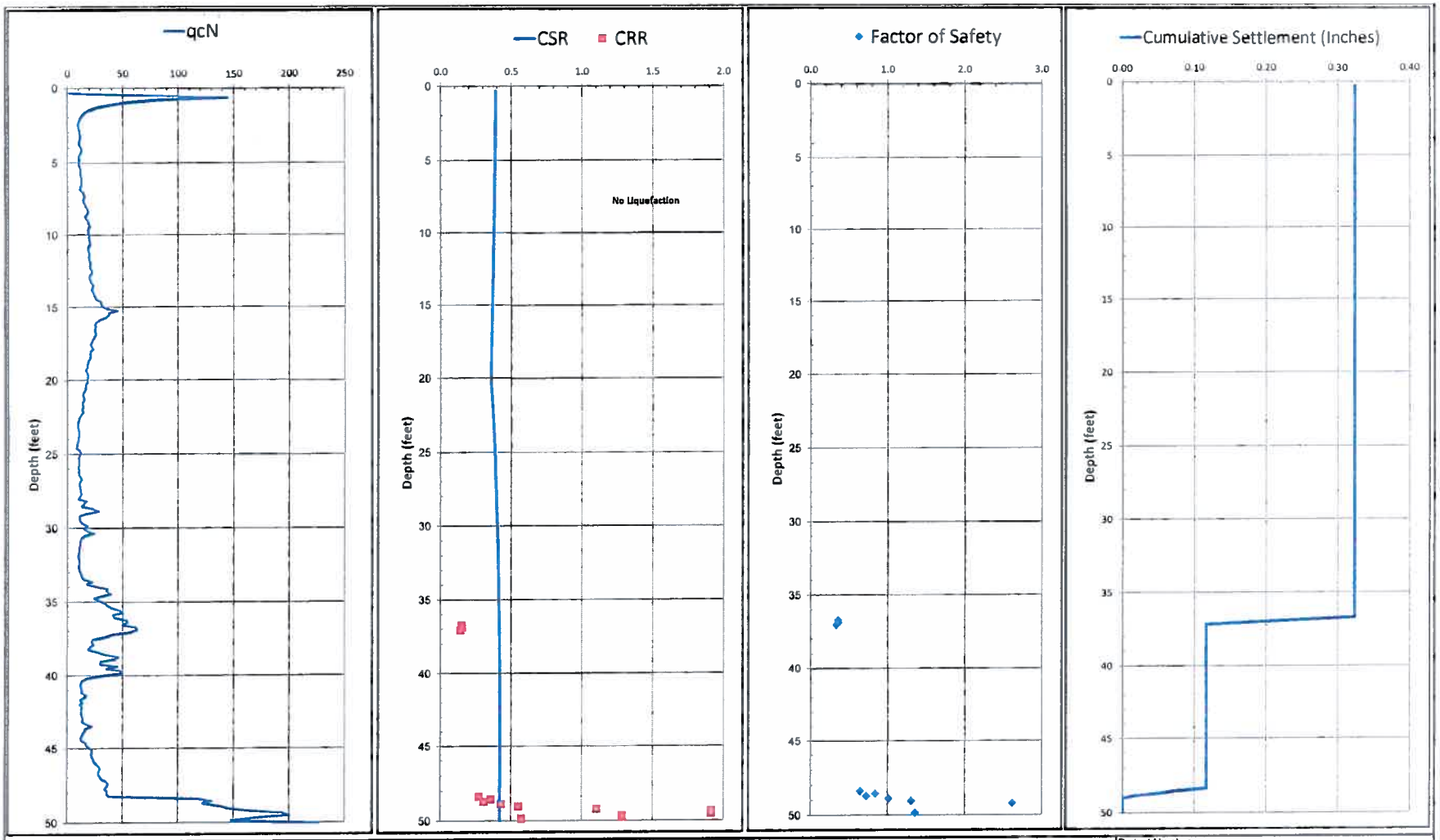
Dry Densities: In place dry density determinations (ASTM D2937) were performed on 10samples to measure the unit weight of the subsurface soils. Results of these tests are shown on the boring logs at the appropriate sample depths.

Washed Sieve Analyses: The percent soil fraction passing the No. 200 sieve (ASTM D1140) was determined on six subsurface soil samples to aid soil classification. Results of these tests are shown on the boring logs at the appropriate sample depths.

Plasticity Index: One Plasticity Index determination (ASTM D4318) was performed on a sample of the subsurface soil to measure the range of water contents over which this material exhibits plasticity. The Plasticity Index was used to classify the soil in accordance with the Unified Soil Classification System and to evaluate the soil expansion potential. Results of this test are shown on the boring log at the appropriate sample depth.

CORNERSTONE EARTH GROUP

APPENDIX C: LIQUEFACTION ANALYSES CALCULATIONS



CORNERSTONE EARTH GROUP

Liquefaction Analysis Summary

4202 Stanley Boulevard
Pleasanton, California

Project Number	132-5-1
Figure Number	Figure C-1
1/30/2012	CPT No. 1

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.60

Total Settlement:	0.32	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-cs}	Stress Reduction Coeff, r_d	CSR	Ko for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.330	2.300	0.700	41.3	41.3	110.515	30.710	3.06		Unsaturated	51.3			2.17	1.70	3.70	35.31	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.490	58.000	1.200	81.3	81.3	322.048	2.070	1.81		Unsaturated	13.1			54.82	1.70	93.19	122.00	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.680	152.400	1.700	82.5	82.5	729.311	1.116	1.41		Unsaturated	8.8			144.05	1.70	244.88	246.99	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	88.100	1.900	102.5	102.5	378.123	2.158	1.79		Unsaturated	12.8			83.27	1.70	141.56	175.84	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	57.400	1.900	122.5	122.5	225.244	3.314	2.07		Unsaturated	18.5			54.25	1.70	92.23	139.15	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	40.800	1.400	143.8	143.8	146.969	3.454	2.19		Unsaturated	21.5			38.37	1.70	65.24	109.75	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	29.100	1.000	163.8	163.8	98.594	3.446	2.30		Unsaturated	24.3			27.50	1.70	46.78	88.46	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	21.700	0.700	185.0	185.0	69.070	3.240	2.38		Unsaturated	26.6			20.51	1.70	34.87	74.20	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	17.300	0.500	205.0	205.0	52.223	2.907	2.43		Unsaturated	28.2			16.35	1.70	27.80	65.48	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	14.600	0.500	225.0	225.0	41.993	3.451	2.55		Unsaturated	31.9			13.80	1.70	23.48	60.75	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	12.700	0.400	246.3	246.3	34.848	3.180	2.59		Unsaturated	33.1			12.00	1.70	20.41	58.88	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	11.900	0.300	266.3	266.3	31.354	2.550	2.56		Unsaturated	32.2			11.25	1.70	19.12	54.99	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	10.800	0.300	287.5	287.5	40.732	2.815	2.50		Unsaturated	30.3			10.21	1.70	17.35	52.21	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	10.100	0.300	307.5	307.5	36.270	3.018	2.58		Unsaturated	32.2			9.55	1.70	16.23	51.11	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	10.400	0.300	327.5	327.5	35.716	2.931	2.55		Unsaturated	32.0			9.83	1.70	16.71	51.73	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	11.000	0.400	348.8	348.8	36.147	3.695	2.62		Unsaturated	34.2			10.40	1.70	17.67	53.38	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	11.600	0.400	368.8	368.8	36.657	3.504	2.60		Unsaturated	33.5			10.98	1.70	18.64	54.57	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	11.700	0.400	390.0	390.0	35.524	3.477	2.61		Unsaturated	33.7			11.06	1.70	18.80	54.83	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	12.200	0.400	410.0	410.0	35.762	3.335	2.59		Unsaturated	33.3			11.53	1.70	19.80	55.83	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.450	11.900	0.400	431.3	431.3	33.628	3.423	2.62		Unsaturated	34.2			11.25	1.70	19.12	55.33	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	10.900	0.300	451.3	451.3	29.760	2.810	2.80		Unsaturated	33.6			10.30	1.70	17.51	53.09	1.00	0.388	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	11.000	0.400	471.3	471.3	29.113	3.716	2.69		Unsaturated	36.6			10.40	1.70	17.67	53.88	1.00	0.388	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	12.800	0.400	492.5	492.5	32.920	3.188	2.60		Unsaturated	33.7			12.10	1.70	20.57	57.20	0.99	0.388	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	13.600	0.500	512.5	512.5	34.030	3.747	2.64		Unsaturated	35.0			12.85	1.70	21.85	59.11	0.99	0.388	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	13.300	0.500	533.8	533.8	32.308	3.836	2.66		Unsaturated	35.8			12.57	1.70	21.37	58.56	0.99	0.387	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	12.000	0.400	553.8	553.8	28.320	3.412	2.67		Unsaturated	36.1			11.34	1.70	19.28	55.78	0.99	0.387	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	10.800	0.400	573.8	573.8	26.647	3.805	2.62		Unsaturated	34.3			10.21	1.70	17.35	52.97	0.99	0.387	1.095	n.a.	n.a.	n.a.	0.00	0.00
4.760	11.300	0.400	595.0	595.0	26.983	3.838	2.61		Unsaturated	33.8			10.88	1.70	18.18	53.97	0.99	0.387	1.093	n.a.	n.a.	n.a.	0.00	0.00
4.920	11.000	0.400	615.0	615.0	34.772	3.741	2.83		Unsaturated	34.7			10.40	1.70	17.67	53.46	0.99	0.388	1.090	n.a.	n.a.	n.a.	0.00	0.00
5.090	11.100	0.400	636.3	636.3	33.892	3.710	2.64		Unsaturated	34.9			10.49	1.70	17.84	53.70	0.99	0.386	1.088	n.a.	n.a.	n.a.	0.00	0.00
5.250	11.400	0.400	656.3	656.3	33.743	3.613	2.63		Unsaturated	34.7			10.78	1.70	18.32	54.32	0.99	0.386	1.086	n.a.	n.a.	n.a.	0.00	0.00
5.410	12.600	0.500	676.3	676.3	36.264	4.078	2.85		Unsaturated	35.1			11.91	1.70	20.25	56.97	0.99	0.386	1.086	n.a.	n.a.	n.a.	0.00	0.00
5.580	12.700	0.500	697.5	697.5	35.418	4.048	2.65		Unsaturated	35.3			12.00	1.70	20.41	57.21	0.99	0.386	1.084	n.a.	n.a.	n.a.	0.00	0.00
5.740	12.500	0.500	717.5	717.5	33.843	4.118	2.67		Unsaturated	36.0			11.81	1.70	20.09	56.86	0.99	0.385	1.082	n.a.	n.a.	n.a.	0.00	0.00
5.910	13.000	0.600	738.8	738.8	34.195	4.750	2.71		Unsaturated	37.4			12.29	1.70	20.89	58.08	0.99	0.385	1.080	n.a.	n.a.	n.a.	0.00	0.00
6.070	13.600	0.600	758.8	758.8	34.848	4.538	2.69		Unsaturated	36.7			12.85	1.70	21.85	59.31	0.99	0.385	1.079	n.a.	n.a.	n.a.	0.00	0.00
6.230	13.600	0.500	778.8	778.8	33.928	3.785	2.64		Unsaturated	35.1			12.85	1.70	21.85	59.12	0.99	0.385	1.077	n.a.	n.a.	n.a.	0.00	0.00
6.400	13.700	0.500	800.0	800.0	33.250	3.759	2.65		Unsaturated	35.3			12.95	1.70	22.01	59.36	0.99	0.384	1.075	n.a.	n.a.	n.a.	0.00	0.00
6.560	13.800	0.500	820.0	820.0	32.171	3.791	2.66		Unsaturated	35.7			12.85	1.70	21.85	59.20	0.98	0.384	1.073	n.a.	n.a.	n.a.	0.00	0.00
6.730	12.400	0.400	841.3	841.3	28.480	3.339	2.67		Unsaturated	35.8			11.72	1.70	19.92	56.62	0.98	0.384	1.069	n.a.	n.a.	n.a.	0.00	0.00
6.890	12.300	0.400	861.3	861.3	27.563	3.370	2.68		Unsaturated	36.3			11.63	1.70	19.76	56.45	0.98	0.384	1.068	n.a.	n.a.	n.a.	0.00	0.00
7.050	15.000	0.500	881.3	881.3	33.043	3.434	2.62		Unsaturated	34.4			14.18	1.89	23.94	61.84	0.98	0.383	1.069	n.a.	n.a.	n.a.	0.00	0.00
7.220	16.000	0.500	902.5	902.5	26.684	3.216	2.68		Unsaturated	36.2			15.12	1.66	25.06	63.57	0.98	0.383	1.068	n.a.	n.a.	n.a.	0.00	0.00
7.380	16.400	0.500	922.5	922.5	26.937	3.137	2.67		Unsaturated	35.8			15.50	1.63	25.34	63.90	0.98	0.383	1.066	n.a.	n.a.	n.a.	0.00	0.00
7.550	15.500	0.500	943.8	943.8	31.848	3.327	2.63		Unsaturated	34.5			14.65	1.62	23.78	61.81	0.98	0.383	1.063	n.a.	n.a.	n.a.	0.00	0.00
7.710	15.800	0.500	963.8	963.8	31.374	3.307	2.83		Unsaturated	34.8			14.74	1.60	23.63	61.44	0.98	0.382	1.062	n.a.	n.a.	n.a.	0.00	0.00
7.870	17.100	0.500	983.8	983.8	26.833	3.011	2.68		Unsaturated	35.5			16.16	1.57	25.43	63.98	0.98	0.382	1.061	n.a.	n.a.	n.a.	0.00	0.00
8.040	18.100	0.500	1005.0	1005.0	28.010	2.841	2.83		Unsaturated	34.4			17.11	1.55	26.50	65.27	0.98	0.382	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.200	19.200	0.500	1025.0	1025.0	29.337	2.676	2.59		Unsaturated	33.4			18.15	1.53	27.70	66.70	0.98	0.382	1.059	n.a.	n.a.	n.a.	0.00	0.00
8.370	20.100	0.500	1048.3	1048.3	30.295	2.554	2.57		Unsaturated	32.6			19.00	1.50	28.59	67.75	0.98	0.381	1.058	n.a.	n.a.	n.a.	0.00	0.00
8.530	19.000	0.500	1066.3	1066.3	28.201	2.708	2.61		Unsaturated	33.9			17.96	1.49	26.84	65.65	0.98	0.381	1.056	n.a.	n.a.	n.a.	0.00	0.00
8.690	17.300	0.500	1086.3	1086.3	30.853	2.984	2.61		Unsaturated	33.8			16.35	1.49	24.34	62.28	0.98	0.381	1.053	n.a.	n.a.	n.a.	0.00	0.00
8.880	18.200	0.500	1107.5	1107.5	28.241	2.833	2.65		Unsaturated	35.2			17.20	1.47	25.24	63.89	0.98	0.380	1.052	n.a.	n.a.	n.a.	0.00	0.00
9.020	20.000	0.800	1127.5	1127.5	28.543	3.087	2.64		Unsaturated	35.0			18.90	1.44	27.30	66.44	0.97	0.380	1.051	n.a.	n.a.	n.a.	0.00	0.00
9.190	20.300	0.800	1148.8	1148.8	28.592	3.042	2.84		Unsaturated	34.9			19.19	1.43	27.41	66.56	0.97	0.380	1.050	n.a.	n.a.	n.a.	0.00	0.00
9.350	21.700	0.700	1168.8	1168.8	30.239	3.315	2.64		Unsaturated	35.1			20.51	1.41	28.90	68.59	0.97	0.380	1.049	n.a.	n.a.	n.a.	0.00	0.00
9.510	20.800	0.600	1186.8	1188.8	28.595	2.969	2.63		Unsaturated	34.6			19.66	1.40	27.52	66.67	0.97	0.379	1.047	n.a.	n.a.	n.a.	0.00	0.00
9.680	20.100	0.600	1210.0	1210.0	32.223	3.078	2.60		Unsaturated	33.6			19.00	1.39	26.40	65.01	0.97	0.379	1.045	n.a.	n.a.	n.a.	0.00	0.00
9.840	20.400	0.700	1230.0	1230.0	32.171	3.538	2.64		Unsaturated	35.0			19.28	1.38	26.52	65.36	0.97	0.379	1.044	n.a.	n.a.	n.a.	0.00	0.00
10.010	21.300	0.700	1251.3	1251.3	33.046	3.386	2.62		Unsaturated	34.3			20.13	1.36	27.36	66.41	0.97	0.379	1.043	n.a.	n.a.	n.a.	0.00	0.00
10.170	20.900	0.700	1271.3	1271.3	31.881	3.454	2.64		Unsaturated	34.9			19.75	1.35	26.84	65.53	0.97	0.378	1.041	n.a.	n.a.	n.a.	0.00	0.00
10.340	21.100	0.700	1292.5	1292.5	31.850	3.422	2.84		Unsaturated	34.9			19.94	1.34	26.83	65.52	0.97	0.378	1.040	n.a.	n.a.	n.a.	0.00	0.00
10.500	21.400	0.700	1312.5	1312.5	31.810	3.375	2.83		Unsaturated	34.7			20.23	1.32	26.76	65.87	0.97	0.378	1.039	n.a.	n.a.	n.a.	0.00	0.00
10.660	22.000	0.700	1332.5	1332.5	32.021	3.281	2.62		Unsaturated	34.3			20.79	1.31	27.25	66.26	0.97	0.377	1.038	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.60

Total Settlement: 0.32 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	Q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{cN}	$q_{c\,IN\text{-}CS}$	Stress Reduction Coeff, rd	C6R	Ko for Sand	$CRR_{M=7.5,\ \sigma'vc\ =\ 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
10.830	20.800	0.800	1353.8	1353.8	29.434	3.012	2.62		Unsaturated	34.4			19.47	1.30	25.37	83.75	0.97	0.377	1.036	n.a.	n.a.	n.a.	0.00	0.00
10.990	19.900	0.800	1373.8	1373.8	27.972	3.123	2.85		Unsaturated	35.4			18.81	1.29	24.33	82.49	0.97	0.377	1.034	n.a.	n.a.	n.a.	0.00	0.00
11.160	20.800	0.600	1395.0	1395.0	28.534	3.015	2.84		Unsaturated	34.8			19.47	1.28	24.94	83.23	0.97	0.377	1.033	n.a.	n.a.	n.a.	0.00	0.00
11.320	21.100	0.600	1415.0	1415.0	28.823	2.942	2.83		Unsaturated	34.4			19.94	1.27	25.31	83.66	0.96	0.376	1.032	n.a.	n.a.	n.a.	0.00	0.00
11.480	21.000	0.700	1435.0	1435.0	28.268	3.451	2.68		Unsaturated	36.2			19.85	1.26	24.99	83.48	0.96	0.376	1.031	n.a.	n.a.	n.a.	0.00	0.00
11.650	20.900	0.800	1456.3	1456.3	27.704	3.966	2.72		Unsaturated	37.9			19.75	1.25	24.66	83.21	0.96	0.376	1.030	n.a.	n.a.	n.a.	0.00	0.00
11.810	21.700	0.800	1476.3	1476.3	28.399	3.816	2.70		Unsaturated	37.2			20.51	1.24	25.38	84.10	0.96	0.375	1.029	n.a.	n.a.	n.a.	0.00	0.00
11.980	22.500	0.900	1497.5	1497.5	29.050	4.138	2.72		Unsaturated	37.8			21.27	1.23	26.06	85.08	0.96	0.375	1.028	n.a.	n.a.	n.a.	0.00	0.00
12.140	21.900	0.900	1517.5	1517.5	27.863	4.257	2.74		Unsaturated	38.6			20.70	1.22	25.20	83.99	0.96	0.375	1.027	n.a.	n.a.	n.a.	0.00	0.00
12.300	22.500	0.900	1537.5	1537.5	28.288	4.142	2.73		Unsaturated	38.1			21.27	1.21	25.87	84.59	0.96	0.375	1.026	n.a.	n.a.	n.a.	0.00	0.00
12.470	23.800	1.000	1558.8	1558.8	29.537	4.344	2.73		Unsaturated	38.1			22.50	1.20	26.90	86.24	0.96	0.374	1.025	n.a.	n.a.	n.a.	0.00	0.00
12.630	23.400	1.000	1578.8	1578.8	28.844	4.423	2.74		Unsaturated	38.7			22.12	1.19	26.27	85.43	0.96	0.374	1.024	n.a.	n.a.	n.a.	0.00	0.00
12.800	21.600	1.000	1600.0	1600.0	28.000	4.808	2.80		Unsaturated	40.7			20.42	1.18	24.11	82.67	0.96	0.374	1.022	n.a.	n.a.	n.a.	0.00	0.00
12.960	21.400	0.900	1620.0	1620.0	25.420	4.371	2.78		Unsaturated	39.9			20.23	1.17	23.73	82.10	0.96	0.373	1.021	n.a.	n.a.	n.a.	0.00	0.00
13.120	22.300	1.000	1640.0	1640.0	28.195	4.655	2.79		Unsaturated	40.3			21.08	1.18	24.52	83.19	0.96	0.373	1.020	n.a.	n.a.	n.a.	0.00	0.00
13.290	22.800	1.000	1661.3	1661.3	26.449	4.552	2.78		Unsaturated	39.9			21.55	1.15	24.87	83.64	0.96	0.373	1.019	n.a.	n.a.	n.a.	0.00	0.00
13.450	25.100	1.100	1681.3	1681.3	28.859	4.534	2.75		Unsaturated	38.8			23.72	1.14	27.13	86.81	0.95	0.372	1.019	n.a.	n.a.	n.a.	0.00	0.00
13.620	24.800	1.100	1702.5	1702.5	27.899	4.832	2.77		Unsaturated	39.5			23.25	1.14	26.41	85.89	0.95	0.372	1.018	n.a.	n.a.	n.a.	0.00	0.00
13.780	23.700	1.100	1722.5	1722.5	28.518	4.816	2.79		Unsaturated	40.5			22.40	1.13	25.30	84.25	0.95	0.372	1.018	n.a.	n.a.	n.a.	0.00	0.00
13.940	24.900	1.100	1742.5	1742.5	27.560	4.578	2.77		Unsaturated	39.5			23.53	1.12	26.37	85.84	0.95	0.372	1.016	n.a.	n.a.	n.a.	0.00	0.00
14.110	26.100	1.100	1763.8	1763.8	28.596	4.362	2.74		Unsaturated	38.5			24.67	1.11	27.43	86.99	0.95	0.371	1.015	n.a.	n.a.	n.a.	0.00	0.00
14.270	26.900	1.100	1783.8	1783.8	29.161	4.229	2.73		Unsaturated	38.0			25.43	1.10	28.07	87.81	0.95	0.371	1.014	n.a.	n.a.	n.a.	0.00	0.00
14.440	28.200	1.200	1805.0	1805.0	30.247	4.396	2.73		Unsaturated	38.0			26.65	1.10	29.21	89.34	0.95	0.371	1.013	n.a.	n.a.	n.a.	0.00	0.00
14.600	32.300	1.300	1825.0	1825.0	34.397	4.142	2.67		Unsaturated	35.9			30.53	1.09	33.17	74.45	0.95	0.370	1.013	n.a.	n.a.	n.a.	0.00	0.00
14.760	32.600	1.400	1845.0	1845.0	34.339	4.420	2.69		Unsaturated	36.6			30.81	1.08	33.27	74.67	0.95	0.370	1.012	n.a.	n.a.	n.a.	0.00	0.00
14.930	34.000	1.400	1868.3	1868.3	35.437	4.234	2.66		Unsaturated	35.8			32.14	1.07	34.46	76.17	0.95	0.370	1.011	n.a.	n.a.	n.a.	0.00	0.00
15.090	37.500	1.700	1886.3	1888.3	38.781	4.850	2.87		Unsaturated	35.8			35.44	1.08	37.73	80.57	0.95	0.369	1.010	n.a.	n.a.	n.a.	0.00	0.00
15.260	47.800	1.700	1907.5	1907.5	48.835	3.829	2.53		Unsaturated	31.4			45.18	1.05	47.65	93.00	0.95	0.369	1.010	n.a.	n.a.	n.a.	0.00	0.00
15.420	40.400	1.600	1927.5	1927.5	40.920	4.057	2.61		Unsaturated	33.8			38.19	1.05	40.15	83.50	0.95	0.369	1.009	n.a.	n.a.	n.a.	0.00	0.00
15.580	40.000	1.400	1947.5	1947.5	38.449	3.587	2.59		Unsaturated	33.2			37.81	1.05	39.54	82.57	0.94	0.368	1.008	n.a.	n.a.	n.a.	0.00	0.00
15.750	37.400	1.500	1968.8	1968.8	36.994	4.119	2.64		Unsaturated	35.0			35.35	1.04	36.78	79.17	0.94	0.368	1.007	n.a.	n.a.	n.a.	0.00	0.00
15.910	31.900	1.400	1988.8	1988.8	31.080	4.530	2.73		Unsaturated	38.0			30.15	1.04	31.23	72.06	0.94	0.368	1.005	n.a.	n.a.	n.a.	0.00	0.00
16.080	28.300	1.300	2010.0	2010.0	27.159	4.763	2.78		Unsaturated	40.1			26.75	1.03	27.58	67.28	0.94	0.368	1.004	n.a.	n.a.	n.a.	0.00	0.00
16.240	27.000	1.200	2030.0	2030.0	25.601	4.818	2.79		Unsaturated	40.5			25.52	1.02	26.15	65.40	0.94	0.367	1.003	n.a.	n.a.	n.a.	0.00	0.00
16.400	27.600	1.200	2050.0	2050.0	25.927	4.516	2.78		Unsaturated	40.1			28.09	1.02	26.58	65.95	0.94	0.367	1.003	n.a.	n.a.	n.a.	0.00	0.00
16.570	28.800	1.200	2071.3	2071.3	24.878	4.858	2.80		Unsaturated	40.9			25.33	1.01	25.85	64.75	0.94	0.367	1.002	n.a.	n.a.	n.a.	0.00	0.00
16.730	27.100	1.200	2091.3	2091.3	24.918	4.606	2.80		Unsaturated	40.8			25.61	1.01	25.79	64.94	0.94	0.366	1.001	n.a.	n.a.	n.a.	0.00	0.00
16.900	27.600	1.200	2112.5	2112.5	25.130	4.521	2.79		Unsaturated	40.5			26.09	1.00	26.11	65.35	0.94	0.366	1.000	n.a.	n.a.	n.a.	0.00	0.00
17.060	26.400	1.100	2132.5	2132.5	23.760	4.342	2.80		Unsaturated	40.7			24.95	1.00	24.84	63.65	0.94	0.366	0.999	n.a.	n.a.	n.a.	0.00	0.00
17.230	25.200	1.100	2153.8	2153.8	22.401	4.580	2.83		Unsaturated	42.0			23.82	0.99	23.57	62.00	0.94	0.365	0.999	n.a.	n.a.	n.a.	0.00	0.00
17.390	24.100	1.000	2173.8	2173.8	21.174	4.345	2.84		Unsaturated	42.1			22.78	0.98	22.41	60.44	0.94	0.365	0.998	n.a.	n.a.	n.a.	0.00	0.00
17.550	22.900	0.800	2193.8	2193.8	19.877	3.669	2.81		Unsaturated	41.1			21.64	0.98	21.17	58.73	0.93	0.365	0.997	n.a.	n.a.	n.a.	0.00	0.00
17.720	23.800	1.000	2215.0	2215.0	20.309	4.446	2.86		Unsaturated	42.9			22.31	0.97	21.70	59.51	0.93	0.364	0.996	n.a.	n.a.	n.a.	0.00	0.00
17.880	25.200	1.000	2235.0	2235.0	21.550	4.152	2.82		Unsaturated	41.4			23.82	0.97	23.05	61.27	0.93	0.364	0.996	n.a.	n.a.	n.a.	0.00	0.00
18.050	22.600	0.900	2256.3	2256.3	19.033	4.192	2.88		Unsaturated	43.1			21.36	0.96	20.54	57.95	0.93	0.364	0.995	n.a.	n.a.	n.a.	0.00	0.00
18.210	22.300	0.900	2276.3	2276.3	18.594	4.253	2.87		Unsaturated	43.6			21.08	0.96	20.16	57.45	0.93	0.363	0.994	n.a.	n.a.	n.a.	0.00	0.00
18.370	22.700	0.900	2296.3	2296.3	18.771	4.176	2.87		Unsaturated	43.3			21.46	0.95	20.41	57.78	0.93	0.363	0.994	n.a.	n.a.	n.a.	0.00	0.00
18.540	22.000	0.900	2317.5	2317.5	17.986	4.318	2.89		Unsaturated	44.2			20.79	0.95	19.86	56.80	0.93	0.363	0.993	n.a.	n.a.	n.a.	0.00	0.00
18.700	20.700	0.800	2337.5	2337.5	18.711	4.096	2.90		Unsaturated	44.6			19.57	0.94	18.39	55.10	0.93	0.362	0.993	n.a.	n.a.	n.a.	0.00	0.00
18.870	20.200	0.700	2358.8	2358.8	18.128	3.880	2.88		Unsaturated	43.9			19.09	0.93	17.94	54.34	0.93	0.362	0.992	n.a.	n.a.	n.a.	0.00	0.00
19.030	19.500	0.700	2378.8	2378.8	15.395	3.823	2.91		Unsaturated	44.9			18.43	0.93	17.13	53.40	0.93	0.362	0.991	n.a.	n.a.	n.a.	0.00	0.00
19.190	19.500	0.700	2398.8	2398.8	15.258	3.825	2.91		Unsaturated	45.1			18.43	0.92	17.04	53.28	0.93	0.361	0.991	n.a.	n.a.	n.a.	0.00	0.00
19.360	18.400	0.700	2420.0	2420.0	14.207	4.072	2.95		Unsaturated	48.7			17.39	0.92	15.98	51.88	0.93	0.361	0.990	n.a.	n.a.	n.a.	0.00	0.00
19.520	19.500	0.700	2440.0	2440.0	14.984	3.829	2.92		Unsaturated	45.3			18.43	0.91	16.85	53.04	0.92	0.361	0.990	n.a.	n.a.	n.a.	0.00	0.00
19.690	20.200	0.700	2461.3	2461.3	15.414	3.690	2.90		Unsaturated	44.5			19.09	0.91	17.37	53.72	0.92	0.360	0.989	n.a.	n.a.	n.a.	0.00	0.00
19.850	20.300	0.700	2481.3	2481.3	15.363	3.673	2.90		Unsaturated	44.5			19.19	0.91	17.37	53.72	0.92	0.360	0.988	n.a.	n.a.	n.a.	0.00	0.00
20.010	19.800	0.700	2501.2	2500.6	14.836	3.774	2.92		[redacted]	45.3			18.71	0.96	n.a.	n.a.	0.92	0.360	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	19.400	0.600	2521.8	2510.4	14.451	3.308	2.89			44.3			18.34	0.96	n.a.	n.a.	0.92	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	18.300	0.500	2540.8	2519.6	13.518	2.936	2.88			44.0			17.30	0.95	n.a.	n.a.	0.92	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	18.000	0.500	2561.2	2529.4	13.220	2.991	2.90			44.5			17.01	0.95	n.a.	n.a.	0.92	0.363	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	17.500	0.400	2580.4	2538.8	12.771	2.488	2.88			43.1			16.54	0.95	n.a.	n.a.	0.92	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	16.300	0.400	2599.8	2547.8	11.775	2.887	2.91			45.0			15.41	0.95	n.a.	n.a.	0.92	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	15.300	0.500	2620.0	2557.8	10.940	3.574	3.01			49.1			14.46	0.95	n.a.	n.a.	0.92	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	16.100	0.500	2639.2	2566.8	11.517	3.383	2.98			47.7			15.22	0.95	n.a.	n.a.	0.92	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.60

Total Settlement:	0.32	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	Q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted Q_{cN}	C_N	Q_{c1N}	Q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	Ke for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
21.330	16.700	0.400	2859.8	2578.8	11.931	2.802	2.90			44.6			15.78	0.95	n.a.	n.a.	0.92	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	15.200	0.400	2878.8	2585.8	10.720	2.886	2.98			47.1			14.37	0.95	n.a.	n.a.	0.91	0.369	n.a.	n.a.	n.a.	n.a	0.00	0.00
21.650	15.100	0.400	2898.0	2595.0	10.598	2.909	2.97			47.4			14.27	0.95	n.a.	n.a.	0.91	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	15.800	0.400	2718.4	2604.8	10.934	2.809	2.95			46.6			14.74	0.95	n.a.	n.a.	0.91	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	14.800	0.400	2737.8	2614.0	10.276	2.978	2.99			48.1			13.99	0.95	n.a.	n.a.	0.91	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.150	15.300	0.300	2758.0	2623.8	10.611	2.155	2.90			44.5			14.46	0.94	n.a.	n.a.	0.91	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	14.000	0.300	2777.2	2633.1	9.579	2.379	2.98			46.9			13.23	0.94	n.a.	n.a.	0.91	0.374	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	12.500	0.200	2796.4	2642.3	8.403	1.802	2.94			46.3			11.81	0.94	n.a.	n.a.	0.91	0.375	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	11.500	0.200	2816.8	2652.1	7.810	1.982	3.00			48.7			10.87	0.94	n.a.	n.a.	0.91	0.376	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	10.800	0.200	2838.0	2661.3	7.051	2.132	3.05			50.6			10.21	0.94	n.a.	n.a.	0.91	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	10.600	0.200	2858.4	2671.1	6.866	2.181	3.06			51.3			10.02	0.94	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	10.400	0.200	2875.8	2680.3	6.687	2.232	3.07			51.9			9.83	0.94	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.300	10.900	0.200	2896.0	2690.1	7.027	2.116	3.04			50.6			10.30	0.94	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	11.200	0.300	2915.2	2699.3	7.218	3.079	3.12			54.0			10.59	0.94	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	11.500	0.300	2934.4	2708.5	7.408	2.990	3.10			53.2			10.87	0.94	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	11.400	0.200	2954.8	2718.3	7.301	2.016	3.02			49.6			10.78	0.94	n.a.	n.a.	0.90	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	10.800	0.200	2974.0	2727.5	6.829	2.148	3.06			51.2			10.21	0.94	n.a.	n.a.	0.90	0.383	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.120	10.800	0.200	2994.4	2737.3	6.797	2.150	3.06			51.3			10.21	0.93	n.a.	n.a.	0.90	0.384	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	10.200	0.100	3013.8	2746.5	6.330	1.150	2.96			47.0			9.84	0.93	n.a.	n.a.	0.90	0.385	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	9.600	0.100	3032.8	2755.7	5.867	1.237	3.00			48.9			9.07	0.93	n.a.	n.a.	0.90	0.385	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	9.300	0.200	3053.2	2765.5	5.822	2.573	3.17			58.3			8.79	0.93	n.a.	n.a.	0.90	0.386	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	12.100	0.300	3072.4	2774.8	7.614	2.840	3.08			52.3			11.44	0.93	n.a.	n.a.	0.90	0.387	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.940	13.600	0.400	3092.8	2784.5	8.858	3.319	3.07			51.9			12.85	0.93	n.a.	n.a.	0.90	0.388	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	12.300	0.300	3112.0	2793.8	7.691	2.792	3.07			51.9			11.63	0.93	n.a.	n.a.	0.89	0.388	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	11.300	0.300	3131.2	2803.0	6.946	3.082	3.13			54.6			10.68	0.93	n.a.	n.a.	0.89	0.389	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	11.300	0.300	3151.6	2812.8	6.914	3.085	3.14			54.7			10.68	0.93	n.a.	n.a.	0.89	0.390	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	11.800	0.300	3170.8	2822.0	7.239	2.937	3.11			53.4			11.15	0.93	n.a.	n.a.	0.89	0.391	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.760	11.500	0.300	3191.2	2831.8	6.995	3.029	3.13			54.3			10.87	0.93	n.a.	n.a.	0.89	0.391	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	11.000	0.300	3210.4	2841.0	6.814	3.193	3.18			55.8			10.40	0.93	n.a.	n.a.	0.89	0.392	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	11.800	0.300	3229.6	2850.2	7.007	3.004	3.13			54.2			10.96	0.92	n.a.	n.a.	0.89	0.393	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	11.300	0.300	3250.0	2860.0	6.766	3.101	3.15			55.1			10.68	0.92	n.a.	n.a.	0.89	0.393	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	11.700	0.300	3269.2	2869.2	7.016	2.981	3.12			54.1			11.06	0.92	n.a.	n.a.	0.89	0.394	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.580	13.000	0.400	3289.6	2879.0	7.888	3.523	3.12			54.0			12.29	0.92	n.a.	n.a.	0.89	0.395	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	14.300	0.500	3308.8	2888.2	8.757	3.954	3.11			53.6			13.52	0.92	n.a.	n.a.	0.88	0.395	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	12.700	0.400	3328.0	2897.4	7.618	3.625	3.14			54.9			12.00	0.92	n.a.	n.a.	0.88	0.396	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	12.100	0.400	3348.4	2907.2	7.172	3.837	3.18			56.5			11.44	0.92	n.a.	n.a.	0.88	0.397	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	12.600	0.400	3367.6	2916.4	7.486	3.864	3.15			55.3			11.91	0.92	n.a.	n.a.	0.88	0.397	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	13.100	0.400	3388.0	2926.2	7.798	3.507	3.12			54.1			12.38	0.92	n.a.	n.a.	0.88	0.398	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	13.100	0.400	3407.2	2935.5	7.765	3.510	3.13			54.2			12.38	0.92	n.a.	n.a.	0.88	0.398	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	14.100	0.400	3426.4	2944.7	8.413	3.229	3.08			52.0			13.33	0.92	n.a.	n.a.	0.88	0.399	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	12.700	0.300	3448.8	2954.5	7.431	2.733	3.08			52.3			12.00	0.92	n.a.	n.a.	0.88	0.400	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	11.400	0.400	3466.0	2963.7	6.524	4.138	3.23			59.0			10.78	0.91	n.a.	n.a.	0.88	0.400	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	18.800	0.500	3486.4	2973.5	11.473	2.931	2.94			48.3			17.77	0.91	n.a.	n.a.	0.88	0.401	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	18.700	0.800	3505.8	2982.7	10.023	4.014	3.07			51.7			15.78	0.91	n.a.	n.a.	0.88	0.401	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	14.700	0.500	3524.8	2991.9	8.848	3.865	3.11			53.6			13.89	0.91	n.a.	n.a.	0.87	0.402	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	24.800	0.800	3545.2	3001.7	15.343	3.474	2.86			44.0			23.44	0.91	n.a.	n.a.	0.87	0.402	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	30.000	1.000	3564.4	3010.9	18.744	3.544	2.82			41.5			28.35	0.91	n.a.	n.a.	0.87	0.403	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	18.100	0.600	3584.8	3020.7	10.797	3.679	3.02			49.8			17.11	0.91	n.a.	n.a.	0.87	0.403	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	12.300	0.300	3604.0	3029.9	6.930	2.858	3.12			53.9			11.63	0.91	n.a.	n.a.	0.87	0.404	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	12.300	0.300	3623.2	3039.1	8.902	2.860	3.12			53.9			11.63	0.91	n.a.	n.a.	0.87	0.404	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	12.800	0.400	3643.6	3048.9	7.201	3.644	3.16			55.9			12.10	0.91	n.a.	n.a.	0.87	0.405	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	14.900	0.800	3662.8	3058.1	8.547	4.591	3.16			55.8			14.08	0.91	n.a.	n.a.	0.87	0.405	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	19.700	0.700	3683.2	3067.9	11.842	3.920	3.01			49.2			18.82	0.91	n.a.	n.a.	0.87	0.406	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	16.700	0.800	3702.4	3077.2	9.851	5.388	3.16			55.8			15.78	0.91	n.a.	n.a.	0.87	0.406	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.190	19.200	0.800	3722.8	3088.9	11.234	4.614	3.07			51.6			18.15	0.91	n.a.	n.a.	0.86	0.407	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	25.700	0.900	3742.0	3096.2	15.393	3.777	2.91			44.8			24.29	0.90	n.a.	n.a.	0.86	0.407	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.510	17.600	0.600	3761.2	3105.4	10.124	3.817	3.05			51.0			16.64	0.90	n.a.	n.a.	0.86	0.408	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.680	14.300	0.500	3781.6	3115.2	7.967	4.029	3.15			55.4			13.52	0.90	n.a.	n.a.	0.86	0.408	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	13.100	0.400	3800.8	3124.4	7.169	3.572	3.18			55.7			12.38	0.90	n.a.	n.a.	0.86	0.409	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.010	12.700	0.300	3821.2	3134.2	6.885	2.781	3.11			53.7			12.00	0.90	n.a.	n.a.	0.86	0.409	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.170	12.700	0.300	3840.4	3143.4	6.859	2.783	3.12			53.8			12.00	0.90	n.a.	n.a.	0.86	0.409	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.330	12.100	0.300	3859.8	3152.6	6.452	2.950	3.15			55.4			11.44	0.90	n.a.	n.a.	0.86	0.410	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.500	11.700	0.300	3880.0	3162.4	6.173	3.074	3.18			56.8			11.06	0.90	n.a.	n.a.	0.86	0.410	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	11.700	0.200	3899.2	3171.8	6.149	2.051	3.09			52.5			11.06	0.90	n.a.	n.a.	0.86	0.411	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.60

Total Settlement:	0.32	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	Q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted Q_{cN}	C_N	Q_{c1N}	Q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (inches)
31.830	11.000	0.100	3919.6	3181.4	5.683	1.106	3.00			48.5			10.40	0.90	n.a.	n.a.	0.86	0.411	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	11.100	0.200	3938.8	3190.8	5.723	2.190	3.13			54.4			10.49	0.90	n.a.	n.a.	0.85	0.411	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	11.700	0.100	3956.0	3199.8	6.076	1.029	2.96			48.9			11.06	0.90	n.a.	n.a.	0.85	0.412	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	11.800	0.200	3978.4	3209.6	8.113	2.039	3.09			52.8			11.15	0.90	n.a.	n.a.	0.85	0.412	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	11.800	0.100	3997.6	3218.8	8.090	1.020	2.95			48.8			11.15	0.90	n.a.	n.a.	0.85	0.412	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.650	11.300	0.100	4018.0	3228.6	5.755	1.078	2.99			48.1			10.68	0.89	n.a.	n.a.	0.85	0.413	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	11.800	0.100	4037.2	3237.9	6.042	1.022	2.96			46.9			11.15	0.89	n.a.	n.a.	0.85	0.413	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	12.700	0.200	4056.4	3247.1	6.573	1.874	3.04			50.8			12.00	0.89	n.a.	n.a.	0.85	0.413	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.140	13.900	0.100	4076.8	3256.9	7.284	0.843	2.85			42.6			13.14	0.89	n.a.	n.a.	0.85	0.414	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.300	14.400	0.300	4096.0	3266.1	7.584	2.429	3.05			50.8			13.81	0.89	n.a.	n.a.	0.85	0.414	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.470	16.300	0.500	4116.4	3275.9	8.895	3.511	3.09			52.4			15.41	0.89	n.a.	n.a.	0.85	0.414	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	24.200	0.500	4135.6	3285.1	13.474	2.259	2.82			41.5			22.87	0.89	n.a.	n.a.	0.84	0.415	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.790	19.800	0.700	4154.8	3294.3	10.638	3.995	3.05			50.7			18.53	0.89	n.a.	n.a.	0.84	0.415	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	28.100	1.400	4175.2	3304.1	15.746	5.382	3.00			48.5			26.56	0.89	n.a.	n.a.	0.84	0.415	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	38.800	1.700	4194.4	3313.3	22.155	4.632	2.84			42.3			36.67	0.89	n.a.	n.a.	0.84	0.416	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.290	37.700	1.600	4214.8	3323.1	21.421	4.495	2.84			42.4			35.83	0.89	n.a.	n.a.	0.84	0.416	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	41.900	1.700	4234.0	3332.3	23.877	4.273	2.79			40.5			39.60	0.89	n.a.	n.a.	0.84	0.416	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	34.400	1.400	4253.2	3341.5	19.317	4.338	2.87			43.3			32.51	0.89	n.a.	n.a.	0.84	0.416	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	28.200	1.100	4273.6	3351.3	14.380	4.571	2.98			47.9			24.78	0.89	n.a.	n.a.	0.84	0.417	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	31.800	1.300	4292.8	3360.5	17.848	4.384	2.90			44.6			30.06	0.89	n.a.	n.a.	0.84	0.417	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.110	36.500	1.600	4313.2	3370.3	20.380	4.659	2.87			43.4			34.50	0.88	n.a.	n.a.	0.84	0.417	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	39.200	1.700	4332.4	3379.6	21.918	4.590	2.84			42.3			37.05	0.88	n.a.	n.a.	0.83	0.417	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	43.000	1.700	4351.6	3388.8	24.094	4.164	2.78			40.1			40.64	0.88	n.a.	n.a.	0.83	0.418	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	50.900	1.700	4372.0	3398.6	28.667	3.490	2.88			38.2			48.11	0.88	n.a.	n.a.	0.83	0.418	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	53.100	2.000	4391.2	3407.8	29.875	3.929	2.70			36.9			50.19	0.88	n.a.	n.a.	0.83	0.418	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	44.100	1.700	4411.6	3417.6	24.517	4.058	2.77			39.5			41.68	0.88	n.a.	n.a.	0.83	0.418	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	45.800	1.500	4430.8	3426.8	25.436	3.442	2.71			37.4			43.29	0.88	n.a.	n.a.	0.83	0.418	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.260	57.000	1.700	4451.2	3436.6	31.877	3.104	2.81			33.8			53.88	0.88	n.a.	n.a.	0.83	0.419	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	57.800	2.000	4470.4	3445.8	32.135	3.812	2.85			35.2			54.44	0.88	n.a.	n.a.	0.83	0.419	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	53.400	2.000	4489.6	3455.0	29.812	3.910	2.70			37.0			50.47	0.88	n.a.	n.a.	0.83	0.419	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	65.500	2.000	4510.0	3464.8	46.715	3.162	2.49		Sand	30.0			61.91	0.78	48.05	93.12	0.83	0.419	0.950	0.132	0.150	0.36	0.03	0.07
36.910	86.500	1.800	4529.2	3474.0	47.384	2.802	2.45		Sand	28.8			62.85	0.78	48.75	93.59	0.82	0.419	0.950	0.132	0.151	0.36	0.03	0.07
37.080	61.000	1.400	4549.6	3483.8	43.258	2.384	2.43		Sand	28.2			57.86	0.77	44.33	87.49	0.82	0.420	0.952	0.123	0.141	0.34	0.04	0.07
37.240	43.400	1.500	4568.8	3493.0	23.542	3.648	2.75			39.0			41.02	0.86	n.a.	n.a.	0.82	0.420	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	36.500	1.200	4588.0	3502.2	19.534	3.508	2.80			40.9			34.50	0.86	n.a.	n.a.	0.82	0.420	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	24.800	1.100	4608.4	3512.0	12.811	4.890	3.04			50.3			23.44	0.87	n.a.	n.a.	0.82	0.420	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	23.400	0.900	4627.6	3521.2	11.977	4.268	3.02			49.7			22.12	0.87	n.a.	n.a.	0.82	0.420	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.900	25.300	0.900	4648.0	3531.0	13.014	3.917	2.97			47.6			23.91	0.87	n.a.	n.a.	0.82	0.420	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	22.400	0.700	4667.2	3540.3	11.336	3.488	2.99			48.3			21.17	0.87	n.a.	n.a.	0.82	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	20.500	0.800	4686.4	3549.5	10.231	4.406	3.09			52.5			19.38	0.87	n.a.	n.a.	0.82	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	29.900	1.100	4705.8	3559.3	15.479	3.993	2.92			45.3			28.26	0.87	n.a.	n.a.	0.82	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	35.600	1.200	4726.0	3568.5	18.628	3.610	2.83			41.8			33.65	0.87	n.a.	n.a.	0.82	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.720	48.300	1.400	4748.4	3578.3	25.870	3.048	2.87			38.1			45.85	0.87	n.a.	n.a.	0.81	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	45.400	1.500	4765.6	3587.5	23.982	3.487	2.73			38.3			42.91	0.87	n.a.	n.a.	0.81	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	32.400	1.300	4784.8	3596.7	18.888	4.332	2.92			45.2			30.62	0.87	n.a.	n.a.	0.81	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	32.300	1.200	4805.2	3606.5	18.580	4.014	2.90			44.5			30.53	0.87	n.a.	n.a.	0.81	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	47.700	1.500	4824.4	3615.7	25.051	3.312	2.71			37.2			45.09	0.87	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.540	38.300	1.800	4644.8	3625.5	19.792	4.460	2.87			43.3			36.20	0.87	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	52.400	2.000	4864.0	3634.7	27.495	4.003	2.73			38.1			49.53	0.87	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	51.400	1.900	4883.2	3643.9	26.871	3.881	2.73			38.0			48.58	0.87	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	32.600	1.100	4903.6	3653.7	18.503	3.849	2.87			43.5			30.81	0.87	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	18.900	0.500	4922.8	3662.9	8.976	3.042	3.04			50.4			17.86	0.87	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.380	14.600	0.400	4943.2	3672.7	8.805	3.298	3.17			58.2			13.80	0.86	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	13.600	0.200	4962.4	3682.0	6.040	1.799	3.07			51.6			12.85	0.86	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	12.800	0.200	4981.6	3691.2	5.586	1.940	3.11			53.8			12.10	0.86	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	13.700	0.200	5002.0	3701.0	6.052	1.786	3.06			51.5			12.95	0.86	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	13.900	0.300	5021.2	3710.2	6.140	2.634	3.14			55.0			13.14	0.86	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.180	14.200	0.300	5041.6	3720.0	6.279	2.569	3.13			54.4			13.42	0.86	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	18.300	0.300	5060.8	3729.2	8.457	1.902	2.95			46.7			17.30	0.86	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	18.100	0.200	5080.0	3738.4	7.254	1.475	2.96			46.9			15.22	0.86	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	12.600	0.200	5100.4	3748.2	5.382	1.990	3.13			54.5			11.91	0.86	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	14.800	0.200	5119.8	3757.4	8.515	1.834	3.02			49.5			13.99	0.86	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.000	12.300	0.200	5140.0	3767.2	5.166	2.055	3.15			55.5			11.83	0.86	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	14.500	0.200	5159.2	3776.4	8.313	1.878	3.04			50.2			13.71	0.86	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00

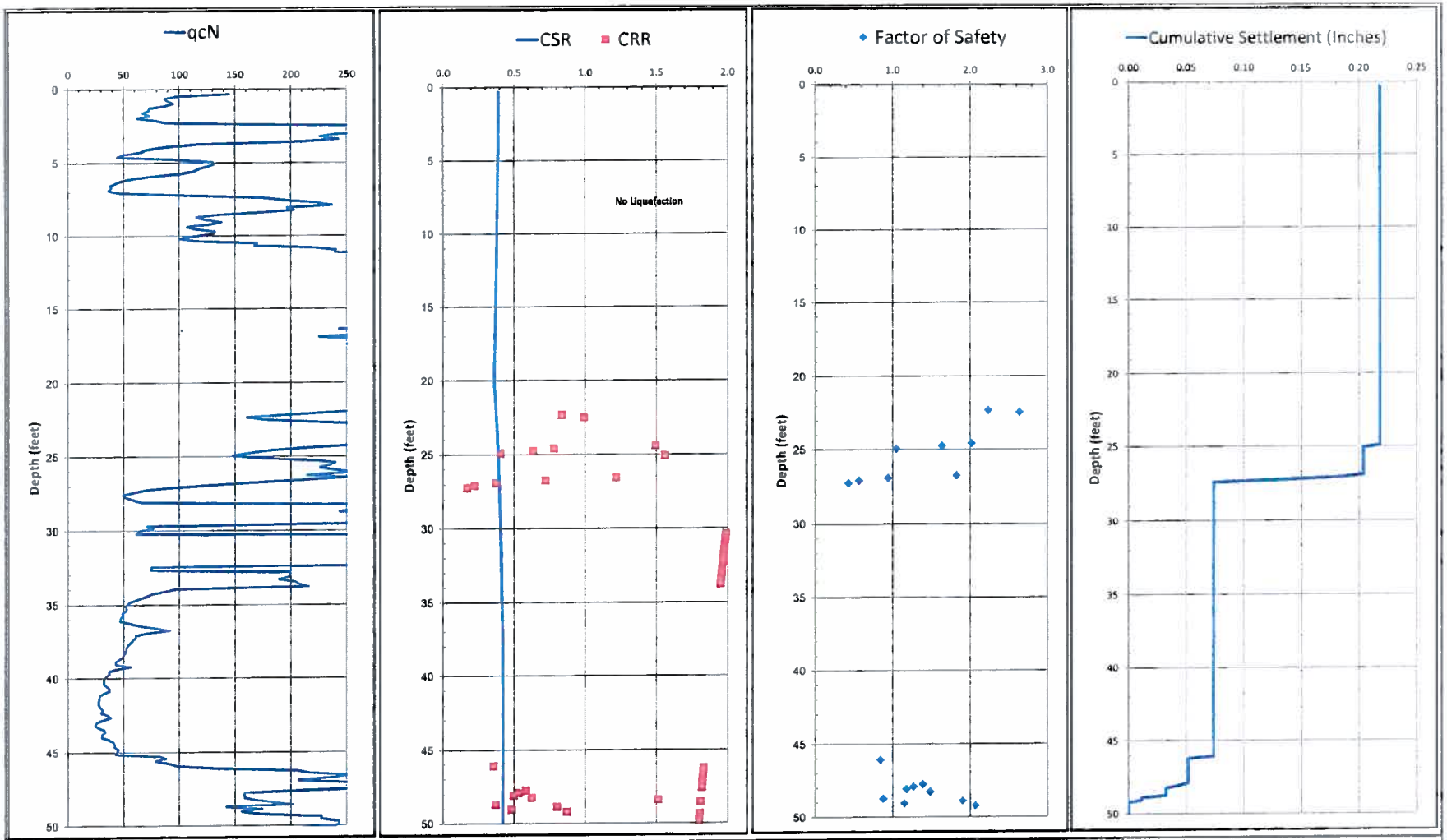
CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.60

Total Settlement: 0.32 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	Q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_{la})	Interpreted Q_{cN}	C_N	Q_{c1N}	Q_{c1N-CS}	Stress Reduction Coeff, rd	CSR	Ke for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
42.320	13.500	0.300	5178.4	3785.6	5.784	2.750	3.18			56.5			12.78	0.86	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	13.400	0.200	5188.8	3795.4	5.891	1.852	3.10			52.9			12.87	0.86	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	13.500	0.300	5218.0	3804.6	5.725	2.755	3.18			56.7			12.78	0.86	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.820	14.600	0.200	5238.4	3814.4	6.282	1.689	3.04			50.3			13.80	0.86	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	15.000	0.200	5257.8	3823.6	6.471	1.617	3.02			49.5			14.18	0.86	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.150	14.500	0.200	5278.0	3833.4	6.188	1.686	3.04			50.6			13.71	0.85	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	17.800	0.300	5297.2	3842.7	7.886	1.980	2.99			48.2			16.82	0.85	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	23.000	0.500	5316.4	3851.9	10.562	2.458	2.93			45.8			21.74	0.85	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	17.600	0.400	5336.8	3861.7	7.733	2.679	3.06			51.4			16.84	0.85	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	16.800	0.400	5358.0	3870.9	7.193	2.873	3.11			53.3			15.89	0.85	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.970	15.500	0.300	5378.4	3880.7	6.803	2.342	3.09			52.8			14.65	0.85	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	14.200	0.200	5395.8	3889.9	5.914	1.739	3.07			51.6			13.42	0.85	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.290	12.900	0.200	5414.8	3899.1	5.228	1.962	3.14			54.9			12.19	0.85	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	13.900	0.300	5435.2	3908.9	5.722	2.683	3.17			58.4			13.14	0.85	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	17.700	0.500	5454.4	3918.1	7.843	3.339	3.12			53.9			16.73	0.85	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.790	18.300	0.600	5474.8	3927.9	7.924	3.855	3.14			54.9			17.30	0.85	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	21.000	0.800	5494.0	3937.1	9.272	4.383	3.12			53.9			19.85	0.85	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	23.700	0.900	5513.2	3946.3	10.814	4.297	3.07			51.8			22.40	0.85	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	23.800	1.000	5533.6	3956.1	10.532	4.800	3.10			53.0			22.31	0.85	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	23.200	0.900	5552.8	3965.3	10.301	4.407	3.08			52.4			21.93	0.85	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.610	23.600	0.900	5573.2	3975.1	10.472	4.324	3.07			51.9			22.31	0.85	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	25.000	1.000	5592.4	3984.4	11.148	4.504	3.08			51.4			23.63	0.85	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	26.100	1.100	5611.6	3993.6	11.686	4.722	3.06			51.3			24.67	0.85	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	28.200	1.200	5632.0	4003.4	12.681	4.727	3.03			50.1			26.65	0.85	n.a.	n.a.	0.77	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	30.500	1.400	5651.2	4012.6	13.794	5.059	3.02			49.6			28.83	0.84	n.a.	n.a.	0.77	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.430	31.300	1.400	5671.6	4022.4	14.153	4.918	3.01			49.0			29.58	0.84	n.a.	n.a.	0.77	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	30.400	1.300	5690.8	4031.6	13.889	4.718	3.01			49.0			28.73	0.84	n.a.	n.a.	0.77	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	29.800	1.200	5710.0	4040.8	13.338	4.454	3.00			48.7			28.17	0.84	n.a.	n.a.	0.77	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	31.300	1.200	5730.4	4050.8	14.040	4.220	2.97			47.3			29.58	0.84	n.a.	n.a.	0.77	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	32.700	1.300	5749.6	4059.8	14.693	4.359	2.96			47.0			30.91	0.84	n.a.	n.a.	0.76	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.250	37.400	1.500	5770.0	4069.6	16.962	4.348	2.91			45.0			35.35	0.84	n.a.	n.a.	0.76	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	39.000	1.300	5789.2	4078.8	17.704	3.601	2.84			42.4			36.86	0.84	n.a.	n.a.	0.76	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	38.400	1.000	5808.4	4088.0	17.368	2.817	2.79			40.2			36.29	0.84	n.a.	n.a.	0.76	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	36.000	0.900	5828.8	4097.8	16.148	2.720	2.80			40.8			34.03	0.84	n.a.	n.a.	0.76	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	38.000	0.800	5848.0	4107.0	17.081	2.281	2.74			38.4			35.92	0.84	n.a.	n.a.	0.76	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.070	38.000	1.100	5868.4	4118.8	17.035	3.137	2.82			41.5			35.92	0.84	n.a.	n.a.	0.76	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	39.700	2.200	5887.6	4126.0	17.817	5.985	2.99			48.1			37.52	0.84	n.a.	n.a.	0.76	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	124.900	3.800	5906.8	4135.3	82.450	3.116	2.31		Sand	24.8			118.05	0.76	89.62	145.22	0.76	0.421	0.897	0.251	0.271	0.64	0.02	0.04
48.560	137.900	5.800	5927.2	4145.1	91.125	4.150	2.38		Sand	28.7			130.34	0.77	100.60	161.28	0.76	0.421	0.881	0.335	0.355	0.84	0.01	0.02
48.720	129.300	5.900	5946.4	4154.3	85.216	4.670	2.44		Sand	28.4			122.21	0.76	93.40	152.84	0.75	0.421	0.889	0.285	0.305	0.72	0.02	0.04
48.890	146.000	6.100	5968.8	4164.1	96.361	4.265	2.37		Sand	26.5			138.00	0.78	107.28	170.00	0.75	0.421	0.870	0.407	0.426	1.01	0.01	0.01
49.050	154.400	7.000	5986.0	4173.3	101.901	4.623	2.39		Sand	26.8			145.94	0.78	114.48	179.81	0.75	0.421	0.857	0.533	0.549	1.30	0.00	0.00
49.220	174.400	8.500	8008.4	4183.1	115.220	3.792	2.28		Sand	24.0			164.84	0.80	131.63	199.55	0.75	0.421	0.822	1.115	1.102	2.82	0.00	0.00
49.380	205.900	5.600	8025.6	4192.3	138.239	2.780	2.13		Sand	20.0			194.81	0.82	159.17	227.97	0.75	0.421	0.795	2.000	1.912	4.54	0.00	0.00
49.540	211.700	5.200	8044.8	4201.5	139.973	2.492	2.09		Sand	19.0			200.09	0.82	164.00	231.33	0.75	0.421	0.794	2.000	1.910	4.54	0.00	0.00
49.710	180.900	5.500	6065.2	4211.3	119.188	3.092	2.21		Sand	21.9			170.98	0.80	136.86	202.98	0.75	0.421	0.813	1.311	1.281	3.05	0.00	0.00
49.870	156.800	8.700	6084.4	4220.5	102.903	4.358	2.38		Sand	26.2			148.20	0.78	115.95	181.21	0.75	0.421	0.852	0.556	0.570	1.35	0.00	0.00
50.040	240.600	8.700	8104.8	4230.3	158.795	2.820	2.10		Sand	19.2			227.41	0.83	189.42	264.24	0.75	0.420	0.792	2.000	1.905	4.53	0.00	0.00



CORNERSTONE EARTH GROUP

Liquefaction Analysis Summary

4202 Stanley Boulevard
Pleasanton, California

Project Number	132-5-1
Figure Number	Figure C-2
1/30/2012	CPT No. 2

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.60

Total Settlement:	0.22	(Inches)

Depth (ft)	qc (tsf)	f_s (tsf)	σvc (psf)	Instu σ'vc (psf)	Q	F (%)	Ic	Layer "Ptastic" PI > 7	Flag Soil Type	Fines (%)	qcN near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted qcN	CN	qc1N	qc1N-CS	Stress Reduction Coeff, rd	CSR	Ke for Sand	CRRM=7.5, σ'vc = 1 atm	CRR	Factor of Safety (CRR/CSR)	Vertical Strain εv	Settlement (Inches)
0.330	152.800	2.400	41.3	41.3	1034.249	1.571	1.49		Unsaturated	7.9			144.42	1.70	245.52	252.33	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.490	103.500	2.600	61.3	61.3	574.819	2.513	1.77		Unsaturated	12.3			97.83	1.70	166.30	201.43	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.660	92.300	1.800	82.5	82.5	441.624	1.951	1.72		Unsaturated	11.5			87.24	1.70	148.31	175.26	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	94.800	0.800	102.5	102.5	408.896	0.833	1.34		Unsaturated	5.9			89.80	1.70	152.33	152.70	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	99.900	0.500	122.5	122.5	392.196	0.501	1.27		Unsaturated	5.2			94.42	1.70	160.52	160.58	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	91.500	0.800	143.8	143.8	331.549	0.656	1.41		Unsaturated	6.8			86.48	1.70	147.02	146.53	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	78.100	0.800	163.8	163.8	265.080	1.025	1.62		Unsaturated	9.7			73.82	1.70	125.49	139.21	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	76.700	1.100	185.0	185.0	244.882	1.436	1.75		Unsaturated	12.0			72.50	1.70	123.24	150.46	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	71.200	2.000	205.0	205.0	215.898	2.813	2.02		Unsaturated	17.4			67.30	1.70	114.40	163.98	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	77.800	1.700	225.0	225.0	224.601	2.194	1.92		Unsaturated	15.3			73.35	1.70	124.69	166.93	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	88.300	1.100	246.3	246.3	183.354	1.662	1.88		Unsaturated	14.4			82.87	1.70	106.53	143.51	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	82.900	0.800	266.3	266.3	220.538	0.987	1.85		Unsaturated	10.3			78.36	1.70	133.20	150.80	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	94.000	0.800	287.5	287.5	240.867	0.852	1.58		Unsaturated	9.3			88.85	1.70	151.04	163.27	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.480	216.400	1.700	307.5	307.5	538.185	0.786	1.34		Unsaturated	8.0			204.54	1.88	340.23	340.94	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	426.400	2.700	327.5	327.5	1024.040	0.633	1.12		Unsaturated	3.8			403.02	1.84	659.34	659.34	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	435.400	4.200	348.8	348.8	1013.280	0.985	1.29		Unsaturated	5.4			411.53	1.61	662.18	662.53	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	328.700	3.300	368.8	368.8	743.810	1.005	1.36		Unsaturated	6.2			310.88	1.59	492.61	494.18	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	253.900	1.700	390.0	390.0	558.559	0.870	1.27		Unsaturated	5.2			239.98	1.56	374.92	375.04	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	239.100	0.300	410.0	410.0	512.984	0.128	0.82		Unsaturated	1.7			225.99	1.54	348.44	348.44	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.450	256.200	0.900	431.3	431.3	535.848	0.352	1.07		Unsaturated	3.3			242.18	1.52	368.42	368.42	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.810	220.300	2.300	451.3	451.3	450.436	1.045	1.48		Unsaturated	7.8			208.22	1.50	313.03	320.87	1.00	0.388	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	123.400	2.000	471.3	471.3	246.679	1.624	1.79		Unsaturated	12.7			116.64	1.57	182.94	223.33	1.00	0.388	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	91.900	0.500	492.5	492.5	179.564	0.546	1.55		Unsaturated	6.7			86.86	1.70	147.67	158.54	0.99	0.388	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	74.400	0.800	512.5	512.5	142.397	1.079	1.82		Unsaturated	13.2			70.32	1.70	119.55	153.08	0.99	0.388	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	70.400	1.000	533.8	533.8	131.986	1.428	1.93		Unsaturated	15.4			66.54	1.70	113.12	155.38	0.99	0.387	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	53.600	1.000	553.8	553.8	98.521	1.875	2.10		Unsaturated	19.3			50.86	1.70	86.12	133.02	0.99	0.387	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	47.200	0.800	573.8	573.8	85.154	1.705	2.12		Unsaturated	19.7			44.61	1.70	75.84	120.88	0.99	0.387	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	103.900	0.800	595.0	595.0	184.665	0.772	1.64		Unsaturated	10.1			98.20	1.59	156.20	174.08	0.99	0.387	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	137.200	0.500	815.0	815.0	240.002	0.385	1.34		Unsaturated	6.0			129.88	1.51	195.98	196.49	0.99	0.388	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	138.200	0.600	636.3	636.3	237.665	0.435	1.39		Unsaturated	8.6			130.62	1.49	195.17	196.55	0.99	0.386	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	132.500	0.400	656.3	656.3	224.324	0.303	1.32		Unsaturated	5.8			125.24	1.50	187.74	188.03	0.99	0.386	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	124.500	0.600	676.3	676.3	207.590	0.483	1.47		Unsaturated	7.6			117.67	1.50	176.65	180.73	0.99	0.386	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	119.400	0.800	697.5	697.5	195.990	0.672	1.58		Unsaturated	9.1			112.85	1.49	187.74	180.05	0.99	0.386	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	106.000	0.400	717.5	717.5	171.473	0.379	1.47		Unsaturated	7.6			100.19	1.53	153.06	157.08	0.99	0.385	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	78.900	0.500	738.8	738.8	125.621	0.637	1.71		Unsaturated	11.3			74.57	1.56	116.33	136.62	0.99	0.385	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	81.700	0.800	758.8	758.8	96.790	0.978	1.92		Unsaturated	15.2			58.32	1.57	91.83	128.54	0.99	0.385	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.230	50.800	0.200	778.8	778.8	78.541	0.397	1.77		Unsaturated	12.4			48.02	1.64	78.84	102.06	0.99	0.385	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	45.500	0.200	800.0	800.0	69.327	0.443	1.85		Unsaturated	13.8			43.01	1.63	70.18	97.74	0.99	0.384	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.560	40.400	0.200	820.0	820.0	60.718	0.500	1.92		Unsaturated	15.3			38.19	1.63	62.13	93.27	0.98	0.384	1.096	n.a.	n.a.	n.a.	0.00	0.00
6.730	41.400	0.500	841.3	841.3	61.429	1.220	2.13		Unsaturated	20.0			39.13	1.57	61.58	102.97	0.98	0.384	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	39.000	0.500	861.3	861.3	57.141	1.296	2.17		Unsaturated	21.0			36.86	1.57	57.74	99.48	0.98	0.384	1.095	n.a.	n.a.	n.a.	0.00	0.00
7.050	48.700	0.600	881.3	881.3	70.681	1.243	2.09		Unsaturated	19.0			46.03	1.51	69.69	111.55	0.98	0.383	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.220	113.700	1.300	902.5	902.5	163.901	1.148	1.79		Unsaturated	12.8			107.47	1.35	145.80	180.58	0.98	0.383	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.380	184.600	1.300	922.5	922.5	263.593	0.706	1.50		Unsaturated	8.0			174.48	1.27	222.38	229.49	0.98	0.383	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.550	206.900	1.600	943.8	943.8	292.154	0.775	1.50		Unsaturated	8.0			195.56	1.24	242.80	250.28	0.98	0.383	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.710	234.200	0.900	963.8	963.8	327.327	0.385	1.25		Unsaturated	5.0			221.38	1.23	272.40	272.44	0.98	0.382	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.870	250.100	0.800	983.8	983.8	348.010	0.321	1.18		Unsaturated	4.3			238.39	1.22	289.32	289.33	0.98	0.382	1.100	n.a.	n.a.	n.a.	0.00	0.00
8.040	207.900	2.600	1005.0	1005.0	284.441	1.254	1.68		Unsaturated	10.5			196.50	1.22	239.15	267.48	0.98	0.382	1.100	n.a.	n.a.	n.a.	0.00	0.00
8.200	214.400	3.400	1025.0	1025.0	290.486	1.590	1.74		Unsaturated	11.9			202.65	1.21	245.35	286.93	0.98	0.382	1.100	n.a.	n.a.	n.a.	0.00	0.00
8.370	180.700	2.900	1046.3	1046.3	242.186	1.610	1.79		Unsaturated	12.8			170.79	1.21	206.26	250.40	0.98	0.381	1.100	n.a.	n.a.	n.a.	0.00	0.00
8.530	141.800	1.000	1066.3	1066.3	187.831	0.709	1.81		Unsaturated	9.6			133.84	1.27	170.04	185.50	0.98	0.381	1.100	n.a.	n.a.	n.a.	0.00	0.00
8.690	122.000	0.500	1088.3	1066.3	160.225	0.412	1.52		Unsaturated	8.3			115.31	1.30	149.84	156.45	0.98	0.381	1.100	n.a.	n.a.	n.a.	0.00	0.00
8.860	131.400	0.500	1107.5	1107.5	170.847	0.382	1.47		Unsaturated	7.7			124.20	1.28	159.04	163.34	0.98	0.380	1.100	n.a.	n.a.	n.a.	0.00	0.00
9.020	145.800	0.600	1127.5	1127.5	188.057	0.413	1.48		Unsaturated	7.5			137.81	1.28	173.06	176.78	0.97	0.380	1.100	n.a.	n.a.	n.a.	0.00	0.00
9.190	135.200	0.400	1148.8	1148.8	172.898	0.297	1.41		Unsaturated	6.9			127.79	1.28	161.39	163.22	0.97	0.380	1.100	n.a.	n.a.	n.a.	0.00	0.00
9.350	113.800	0.500	1168.8	1168.8	143.731	0.442	1.57		Unsaturated	9.1			107.37	1.27	136.78	147.27	0.97	0.380	1.093	n.a.	n.a.	n.a.	0.00	0.00
9.510	121.400	0.800	1188.8	1188.8	152.340	0.662	1.66		Unsaturated	10.4			114.74	1.25	143.17	162.18	0.97	0.379	1.100	n.a.	n.a.	n.a.	0.00	0.00
9.680	139.200	1.100	1210.0	1210.0	173.232	0.794	1.66		Unsaturated	10.5			131.57	1.22	160.40	181.87	0.97	0.379	1.100	n.a.	n.a.	n.a.	0.00	0.00
9.840	138.400	0.800	1230.0	1230.0	170.813	0.581	1.58		Unsaturated	9.2			130.81	1.22	159.77	172.16	0.97	0.379	1.100	n.a.	n.a.	n.a.	0.00	0.00
10.010	122.100	0.800	1251.3	1251.3	149.309	0.659	1.66		Unsaturated	10.5			115.41	1.22	141.35	160.78	0.97	0.379	1.092	n.a.	n.a.	n.a.	0.00	0.00
10.170	107.500	0.600	1271.3	1271.3	130.314	0.561	1.67		Unsaturated	10.6			101.61	1.23	125.42	144.03	0.97	0.378	1.077	n.a.	n.a.	n.a.	0.00	0.00
10.340	120.800	1.300	1292.5	1292.5	145.310	1.082	1.81		Unsaturated	13.1			114.18	1.20	136.86	172.64	0.97	0.378	1.097	n.a.	n.a.	n.a.	0.00	0.00
10.500	179.500	1.300	1312.5	1312.5	214.633	0.727	1.57		Unsaturated	9.0			169.66	1.18	197.29	210.39	0.97	0.378	1.100	n.a.	n.a.	n.a.	0.00	0.00
10.660	177.300	1.800	1332.5	1332.5	210.384	1.019	1.88		Unsaturated	10.8			167.56	1.15	192.93	219.42	0.97	0.377	1.100	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.60

Total Settlement:	0.22	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Instu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	Q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted Q_{cN}	C_N	Q_{cIN}	Q_{cIN-CS}	Stress Reduction Coeff, rd	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
10.830	234.800	2.200	1353.8	1353.8	278.424	0.940	1.58		Unsaturated	9.1			221.74	1.13	249.47	265.84	0.97	0.377	1.100	n.a.	n.a.	n.a.	0.00	0.00
10.990	254.200	3.400	1373.8	1373.8	297.385	1.341	1.88		Unsaturated	10.7			240.28	1.12	269.27	302.23	0.97	0.377	1.100	n.a.	n.a.	n.a.	0.00	0.00
11.160	253.400	2.800	1395.0	1395.0	294.187	1.108	1.61		Unsaturated	9.7			239.51	1.12	267.34	289.83	0.97	0.377	1.100	n.a.	n.a.	n.a.	0.00	0.00
11.320	320.600	3.300	1415.0	1415.0	369.741	1.032	1.53		Unsaturated	8.4			303.02	1.11	336.96	350.39	0.96	0.376	1.100	n.a.	n.a.	n.a.	0.00	0.00
11.480	321.000	2.800	1435.0	1435.0	367.603	0.874	1.47		Unsaturated	7.7			303.40	1.11	336.14	343.34	0.96	0.376	1.100	n.a.	n.a.	n.a.	0.00	0.00
11.650	378.800	2.800	1456.3	1456.3	430.753	0.741	1.37		Unsaturated	6.4			358.03	1.10	395.13	396.82	0.96	0.378	1.100	n.a.	n.a.	n.a.	0.00	0.00
11.810	427.600	4.300	1476.3	1476.3	483.036	1.007	1.45		Unsaturated	7.4			404.16	1.10	444.43	451.54	0.96	0.375	1.100	n.a.	n.a.	n.a.	0.00	0.00
11.980	408.800	4.200	1497.5	1497.5	458.462	1.029	1.47		Unsaturated	7.7			386.39	1.10	423.29	432.18	0.96	0.375	1.100	n.a.	n.a.	n.a.	0.00	0.00
12.140	398.500	3.400	1517.5	1517.5	443.924	0.855	1.42		Unsaturated	6.9			376.65	1.09	411.18	414.94	0.96	0.375	1.100	n.a.	n.a.	n.a.	0.00	0.00
12.300	388.200	3.500	1537.5	1537.5	429.595	0.903	1.44		Unsaturated	7.3			366.92	1.09	399.17	404.78	0.96	0.375	1.096	n.a.	n.a.	n.a.	0.00	0.00
12.470	377.800	2.600	1558.8	1558.8	415.192	0.690	1.36		Unsaturated	6.2			357.09	1.08	387.08	388.31	0.96	0.374	1.092	n.a.	n.a.	n.a.	0.00	0.00
12.630	358.100	3.000	1578.8	1578.8	390.988	0.840	1.44		Unsaturated	7.3			338.47	1.08	365.66	370.78	0.96	0.374	1.088	n.a.	n.a.	n.a.	0.00	0.00
12.800	354.800	3.000	1600.0	1600.0	384.783	0.847	1.45		Unsaturated	7.4			335.35	1.08	361.01	366.85	0.96	0.374	1.084	n.a.	n.a.	n.a.	0.00	0.00
12.960	355.900	2.500	1620.0	1620.0	383.577	0.704	1.39		Unsaturated	6.8			336.39	1.07	360.95	363.02	0.96	0.373	1.080	n.a.	n.a.	n.a.	0.00	0.00
13.120	340.400	2.800	1640.0	1640.0	364.560	0.786	1.43		Unsaturated	7.1			321.74	1.07	344.11	348.17	0.96	0.373	1.076	n.a.	n.a.	n.a.	0.00	0.00
13.290	358.300	2.400	1661.3	1661.3	381.323	0.671	1.37		Unsaturated	6.4			338.66	1.07	360.98	362.56	0.96	0.373	1.073	n.a.	n.a.	n.a.	0.00	0.00
13.450	347.600	2.200	1681.3	1681.3	367.892	0.634	1.37		Unsaturated	6.3			328.54	1.06	349.10	350.40	0.96	0.372	1.069	n.a.	n.a.	n.a.	0.00	0.00
13.620	368.100	2.200	1702.5	1702.5	384.873	0.602	1.34		Unsaturated	5.9			348.03	1.06	366.46	367.15	0.95	0.372	1.065	n.a.	n.a.	n.a	0.00	0.00
13.780	338.800	2.000	1722.5	1722.5	351.927	0.595	1.38		Unsaturated	6.2			318.34	1.06	336.09	337.17	0.95	0.372	1.062	n.a.	n.a.	n.a.	0.00	0.00
13.940	275.300	2.100	1742.5	1742.5	285.835	0.765	1.50		Unsaturated	8.0			260.21	1.05	273.89	282.29	0.95	0.372	1.058	n.a.	n.a.	n.a	0.00	0.00
14.110	282.300	3.100	1763.8	1763.8	291.344	1.102	1.61		Unsaturated	9.7			266.82	1.05	279.95	303.35	0.95	0.371	1.055	n.a.	n.a.	n.a.	0.00	0.00
14.270	309.100	3.000	1783.8	1783.8	317.285	0.973	1.55		Unsaturated	8.7			292.16	1.05	305.62	320.87	0.95	0.371	1.051	n.a.	n.a.	n.a.	0.00	0.00
14.440	332.800	5.200	1805.0	1805.0	339.655	1.567	1.70		Unsaturated	11.1			314.56	1.04	328.03	370.94	0.95	0.371	1.048	n.a.	n.a.	n.a.	0.00	0.00
14.600	284.900	4.800	1825.0	1825.0	289.028	1.690	1.76		Unsaturated	12.3			269.28	1.04	280.00	330.15	0.95	0.370	1.044	n.a.	n.a.	n.a.	0.00	0.00
14.760	329.200	5.100	1845.0	1845.0	332.288	1.554	1.70		Unsaturated	11.1			311.15	1.04	322.61	365.41	0.95	0.370	1.041	n.a.	n.a.	n.a.	0.00	0.00
14.930	350.000	5.100	1866.3	1866.3	351.314	1.461	1.68		Unsaturated	10.5			330.81	1.03	341.96	379.34	0.95	0.370	1.038	n.a.	n.a.	n.a.	0.00	0.00
15.090	357.100	4.100	1886.3	1886.3	358.545	1.151	1.58		Unsaturated	9.1			337.52	1.03	347.92	388.94	0.95	0.369	1.034	n.a.	n.a.	n.a.	0.00	0.00
15.260	360.300	3.200	1907.5	1907.5	357.728	0.891	1.49		Unsaturated	7.8			340.55	1.03	350.00	358.77	0.95	0.369	1.031	n.a.	n.a.	n.a.	0.00	0.00
15.420	353.000	3.200	1927.5	1927.5	348.628	0.909	1.50		Unsaturated	8.0			333.65	1.02	341.98	352.07	0.95	0.369	1.028	n.a.	n.a.	n.a.	0.00	0.00
15.580	352.600	3.100	1947.5	1947.5	346.429	0.882	1.49		Unsaturated	7.9			333.27	1.02	340.85	349.78	0.94	0.368	1.025	n.a.	n.a.	n.a.	0.00	0.00
15.750	333.000	5.000	1968.8	1968.8	325.338	1.506	1.69		Unsaturated	11.0			314.74	1.02	320.79	362.19	0.94	0.368	1.022	n.a.	n.a.	n.a.	0.00	0.00
15.910	318.100	4.800	1988.8	1988.8	307.212	1.523	1.71		Unsaturated	11.3			298.77	1.02	303.70	346.89	0.94	0.366	1.019	n.a.	n.a.	n.a.	0.00	0.00
16.080	378.300	5.200	2010.0	2010.0	365.894	1.378	1.63		Unsaturated	10.0			357.56	1.01	362.44	395.14	0.94	0.368	1.015	n.a.	n.a.	n.a.	0.00	0.00
16.240	289.100	3.900	2030.0	2030.0	278.000	1.354	1.70		Unsaturated	11.1			273.25	1.01	276.28	313.56	0.94	0.367	1.012	n.a.	n.a.	n.a.	0.00	0.00
16.400	257.200	2.600	2050.0	2050.0	245.998	1.015	1.63		Unsaturated	10.0			243.10	1.01	245.14	289.24	0.94	0.367	1.010	n.a.	n.a.	n.a.	0.00	0.00
16.570	286.400	3.700	2071.3	2071.3	272.819	1.297	1.69		Unsaturated	10.9			270.70	1.01	272.23	307.41	0.94	0.367	1.006	n.a.	n.a.	n.a.	0.00	0.00
16.730	296.700	4.000	2091.3	2091.3	281.095	1.353	1.69		Unsaturated	11.0			280.43	1.00	281.31	318.56	0.94	0.366	1.004	n.a.	n.a.	n.a.	0.00	0.00
16.900	238.400	4.000	2112.5	2112.5	224.518	1.685	1.83		Unsaturated	13.5			225.33	1.00	225.43	277.90	0.94	0.366	1.000	n.a.	n.a.	n.a.	0.00	0.00
17.060	287.300	3.500	2132.5	2132.5	269.494	1.223	1.67		Unsaturated	10.6			271.55	1.00	270.99	303.11	0.94	0.366	0.998	n.a.	n.a.	n.a	0.00	0.00
17.230	284.400	3.400	2153.8	2153.8	265.434	1.200	1.67		Unsaturated	10.6			268.81	1.00	267.58	298.98	0.94	0.365	0.995	n.a.	n.a.	n.a.	0.00	0.00
17.390	264.700	2.500	2173.8	2173.8	245.830	0.948	1.61		Unsaturated	9.7			250.19	0.99	248.42	269.52	0.94	0.365	0.992	n.a.	n.a.	n.a.	0.00	0.00
17.550	287.800	3.300	2193.8	2193.8	268.141	1.151	1.65		Unsaturated	10.3			272.02	0.99	269.45	298.53	0.93	0.365	0.989	n.a.	n.a.	n.a.	0.00	0.00
17.720	327.500	3.800	2215.0	2215.0	301.528	1.184	1.62		Unsaturated	9.9			309.55	0.99	305.83	332.55	0.93	0.384	0.988	n.a.	n.a.	n.a.	0.00	0.00
17.880	342.800	2.500	2235.0	2235.0	314.052	0.732	1.46		Unsaturated	7.5			323.82	0.99	319.18	324.84	0.93	0.384	0.984	n.a.	n.a.	n.a	0.00	0.00
18.050	385.300	2.800	2256.3	2256.3	351.845	0.677	1.40		Unsaturated	6.7			364.18	0.98	358.06	360.59	0.93	0.384	0.981	n.a.	n.a.	n.a.	0.00	0.00
18.210	400.300	3.600	2276.3	2276.3	363.757	0.902	1.49		Unsaturated	7.8			378.36	0.98	371.14	380.33	0.93	0.383	0.978	n.a.	n.a.	n.a.	0.00	0.00
18.370	381.800	3.300	2296.3	2296.3	345.375	0.867	1.49		Unsaturated	7.8			360.87	0.98	353.17	362.05	0.93	0.363	0.975	n.a	n.a.	n.a.	0.00	0.00
18.540	320.400	4.300	2317.5	2317.5	288.324	1.347	1.69		Unsaturated	10.9			302.84	0.98	295.65	332.83	0.93	0.363	0.973	n.a	n.a.	n.a.	0.00	0.00
18.700	363.600	3.900	2337.5	2337.5	325.828	1.076	1.58		Unsaturated	9.1			343.67	0.97	334.76	355.09	0.93	0.362	0.970	n.a	n.a.	n.a.	0.00	0.00
18.870	296.800	3.800	2358.8	2358.8	284.648	1.218	1.67		Unsaturated	10.7			280.53	0.97	272.61	305.48	0.93	0.362	0.967	n.a.	n.a.	n.a.	0.00	0.00
19.030	303.100	2.300	2378.8	2378.8	289.139	0.762	1.52		Unsaturated	8.2			266.48	0.97	277.77	287.90	0.93	0.362	0.965	n.a.	n.a.	n.a.	0.00	0.00
19.190	311.100	2.200	2398.8	2398.8	275.107	0.710	1.49		Unsaturated	7.8			294.05	0.97	284.47	291.98	0.93	0.361	0.962	n.a.	n.a.	n.a.	0.00	0.00
19.360	328.300	2.800	2420.0	2420.0	289.089	0.856	1.53		Unsaturated	8.5			310.30	0.97	299.51	312.17	0.93	0.361	0.960	n.a	n.a.	n.a.	0.00	0.00
19.520	351.300	3.100	2440.0	2440.0	308.137	0.886	1.52		Unsaturated	8.4			332.04	0.96	319.79	332.26	0.92	0.361	0.957	n.a.	n.a.	n.a.	0.00	0.00
19.690	355.500	4.000	2461.3	2461.3	310.478	1.129	1.81		Unsaturated	9.6			336.01	0.96	322.88	347.50	0.92	0.360	0.955	n.a.	n.a.	n.a.	0.00	0.00
19.850	371.600	4.100	2481.3	2481.3	323.268	1.107	1.59		Unsaturated	9.3			351.23	0.96	336.78	359.20	0.92	0.360	0.952	n.a.	n.a.	n.a.	0.00	0.00
20.010	358.300	3.100	2501.3	2501.3	310.400	0.868	1.52		Sand	8.3			338.66	0.96	324.04	335.58	0.92	0.360	0.950	2.000	2.284	6.35	0.00	0.00
20.180	314.400	3.100	2522.5	2522.5	271.077	0.990	1.60		Sand	9.5			297.18	0.95	283.70	304.84	0.92	0.361	0.947	2.000	2.278	6.31	0.00	0.00
20.340	320.700	3.300	2542.5	2542.5	275.433	1.033	1.61		Sand	9.6			303.12	0.95	288.78	311.74	0.92	0.362	0.945	2.000	2.273	6.28	0.00	0.00
20.510	297.200	3.800	2563.8	2563.8	254.101	1.284	1.70		Sand	11.2			280.91	0.95	267.04	304.43	0.92	0.363	0.942	2.000	2.267	6.24	0.00	0.00
20.670	310.700	3.300	2583.8	2583.8	264.654	1.067	1.63		Sand	10.0			293.87	0.95	278.59	304.41	0.92	0.364	0.940	2.000	2.261	6.21	0.00	0.00
20.830	281.000	2.900	2603.8	2603.8	238.321	1.037	1.65		Sand	10.3			285.80	0.95	251.45	278.51	0.92	0.365	0.938	2.000	2.255	6.18	0.00	0.00
21.000	301.300	2.700	2625.0	2625.0	254.572	0.900	1.58		Sand	9.3			284.78	0.94	269.04	287.46	0.92	0.368	0.935	2.000	2.250	6.14	0.00	0.00
21.160	304.700	2.500	2645.0	2645.0	256.474	0.824	1.55		Sand	8.8			288.00	0.94	271.53	285.99	0.92	0.367	0.933	2.000	2.244	6.11	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.60

Total Settlement:	0.22	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	QcN near interfaces (soft layer)	Thin Layer Factor (K_{H1})	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Strass Reduction Coeff, rd	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Setttlement (Inches)
21.330	338.800	2.700	2666.3	2666.3	283.985	0.801	1.52		Sand	8.2			320.04	0.94	301.10	311.88	0.92	0.368	0.931	2.000	2.238	6.08	0.00	0.00
21.480	334.900	4.800	2668.3	2668.3	279.814	1.379	1.70		Sand	11.2			318.54	0.94	297.23	337.59	0.91	0.369	0.928	2.000	2.233	6.05	0.00	0.00
21.950	316.600	2.600	2706.3	2706.3	263.475	0.825	1.55		Sand	8.7			299.24	0.94	280.44	294.28	0.91	0.370	0.928	2.000	2.228	6.01	0.00	0.00
21.820	298.600	2.700	2727.5	2727.5	247.452	0.908	1.60		Sand	9.4			282.23	0.94	263.95	283.70	0.91	0.371	0.924	2.000	2.222	5.98	0.00	0.00
21.980	250.600	2.400	2747.5	2747.5	206.727	0.963	1.67		Sand	10.6			236.86	0.93	220.70	247.95	0.91	0.372	0.922	2.000	2.217	5.95	0.00	0.00
22.150	214.700	1.900	2768.8	2768.8	176.260	0.891	1.69		Sand	11.0			202.93	0.92	188.65	214.21	0.91	0.373	0.919	2.000	2.211	5.92	0.00	0.00
22.310	170.100	2.100	2788.8	2788.8	138.898	1.245	1.87		Sand	14.2			160.78	0.91	146.23	189.68	0.91	0.374	0.935	0.742	0.835	2.23	0.00	0.00
22.470	186.600	1.900	2808.8	2808.8	151.931	0.972	1.77		Sand	12.3			176.37	0.91	160.30	194.19	0.91	0.375	0.930	0.885	0.990	2.64	0.00	0.00
22.640	235.500	2.900	2830.0	2830.0	191.317	1.239	1.77		Sand	12.4			222.59	0.92	205.65	246.50	0.91	0.378	0.913	2.000	2.195	5.84	0.00	0.00
22.800	299.500	4.500	2850.0	2850.0	242.759	1.510	1.77		Sand	12.4			283.08	0.92	261.69	310.28	0.91	0.377	0.911	2.000	2.190	5.81	0.00	0.00
22.970	339.800	4.700	2871.3	2871.3	274.388	1.380	1.71		Sand	11.3			320.98	0.92	298.15	337.88	0.91	0.378	0.908	2.000	2.185	5.78	0.00	0.00
23.130	372.300	4.500	2891.3	2891.3	299.870	1.213	1.64		Sand	10.1			351.89	0.92	324.07	354.94	0.91	0.379	0.906	2.000	2.180	5.75	0.00	0.00
23.300	357.600	4.600	2912.5	2912.5	286.922	1.292	1.67		Sand	10.7			338.00	0.92	310.67	348.75	0.90	0.380	0.904	2.000	2.175	5.73	0.00	0.00
23.460	371.900	3.800	2932.5	2932.5	297.418	0.972	1.57		Sand	9.0			351.51	0.92	322.52	340.72	0.90	0.381	0.902	2.000	2.170	5.70	0.00	0.00
23.620	371.800	4.800	2952.5	2952.5	296.319	1.298	1.67		Sand	10.5			351.42	0.92	321.85	357.53	0.90	0.381	0.900	2.000	2.165	5.68	0.00	0.00
23.790	373.000	3.200	2973.8	2973.8	296.208	0.861	1.53		Sand	8.4			352.55	0.91	322.28	335.07	0.90	0.382	0.898	2.000	2.160	5.65	0.00	0.00
23.950	317.200	3.300	2993.8	2993.8	250.867	1.045	1.64		Sand	10.1			299.81	0.91	273.58	300.41	0.90	0.383	0.896	2.000	2.155	5.63	0.00	0.00
24.120	291.800	3.000	3015.0	3015.0	229.860	1.033	1.66		Sand	10.4			275.80	0.91	251.21	278.73	0.90	0.384	0.894	2.000	2.150	5.60	0.00	0.00
24.280	270.500	1.900	3035.0	3035.0	212.284	0.708	1.57		Sand	9.0			255.87	0.91	231.89	245.77	0.90	0.385	0.892	2.000	2.145	5.58	0.00	0.00
24.440	225.300	1.400	3055.0	3055.0	176.025	0.626	1.59		Sand	9.4			212.95	0.89	189.05	204.05	0.90	0.385	0.889	1.382	1.494	3.88	0.00	0.00
24.810	191.500	1.600	3076.3	3078.3	148.811	0.842	1.73		Sand	11.7			181.00	0.88	159.07	188.43	0.90	0.386	0.914	0.709	0.778	2.02	0.00	0.00
24.770	174.200	1.800	3096.3	3096.3	134.804	1.043	1.82		Sand	13.4			164.65	0.87	143.89	182.15	0.90	0.387	0.918	0.573	0.632	1.63	0.00	0.00
24.940	156.700	1.500	3117.5	3117.5	120.808	0.967	1.84		Sand	13.6			148.11	0.86	127.85	164.86	0.90	0.388	0.929	0.361	0.404	1.04	0.01	0.01
25.100	185.500	2.800	3137.5	3137.5	142.770	1.522	1.92		Sand	15.3			175.33	0.88	154.40	205.09	0.89	0.388	0.890	1.457	1.559	4.01	0.00	0.00
25.260	235.700	4.100	3157.5	3157.5	181.151	1.751	1.90		Sand	14.9			222.78	0.90	200.45	259.06	0.89	0.389	0.980	2.000	2.116	5.44	0.00	0.00
25.430	253.900	4.600	3178.9	3178.8	194.572	1.823	1.89		Sand	14.7			239.99	0.90	215.55	275.40	0.99	0.390	0.878	2.000	2.111	5.41	0.00	0.00
25.590	249.800	3.100	3198.8	3198.8	190.803	1.249	1.77		Sand	12.4			238.11	0.90	211.71	253.92	0.89	0.391	0.876	2.000	2.107	5.39	0.00	0.00
25.760	239.400	1.800	3220.0	3220.0	182.198	0.873	1.80		Sand	9.5			229.29	0.86	198.88	215.27	0.99	0.391	0.874	2.000	2.102	5.37	0.00	0.00
25.920	255.600	3.700	3240.0	3240.0	193.999	1.457	1.92		Sand	13.3			241.59	0.89	215.90	265.46	0.99	0.392	0.872	2.000	2.098	5.35	0.00	0.00
26.080	273.200	3.200	3260.0	3260.0	208.797	1.178	1.73		Sand	11.7			258.22	0.89	230.40	268.55	0.89	0.393	0.870	2.000	2.093	5.33	0.00	0.00
26.250	227.400	2.700	3281.3	3281.3	171.356	1.196	1.79		Sand	12.9			214.93	0.88	199.19	230.86	0.89	0.393	0.869	2.000	2.089	5.31	0.00	0.00
26.410	264.500	1.300	3301.3	3301.3	198.802	0.495	1.49		Sand	7.8			250.00	0.88	219.02	225.16	0.89	0.394	0.867	2.000	2.084	5.29	0.00	0.00
26.580	221.700	1.500	3322.5	3322.5	165.974	0.682	1.63		Sand	10.0			209.55	0.86	180.62	200.17	0.89	0.395	0.861	1.147	1.215	3.08	0.00	0.00
26.740	173.800	2.300	3342.5	3342.5	129.446	1.336	1.91		Sand	15.1			164.27	0.85	140.14	186.79	0.88	0.395	0.856	0.668	0.720	1.82	0.00	0.00
26.900	135.800	2.800	3362.5	3362.5	100.561	2.088	2.13		Sand	19.9			128.36	0.84	107.40	181.48	0.88	0.396	0.918	0.336	0.371	0.94	0.01	0.02
27.070	99.000	3.000	3383.8	3383.8	72.731	3.083	2.35		Sand	25.7			93.57	0.81	78.06	128.13	0.88	0.397	0.938	0.198	0.224	0.56	0.02	0.05
27.230	74.800	3.000	3403.8	3403.8	54.475	4.104	2.52		Sand	31.1			70.70	0.79	56.03	104.13	0.88	0.397	0.948	0.149	0.170	0.43	0.03	0.06
27.400	63.000	2.700	3425.0	3425.0	35.788	4.405	2.67		[redacted]	36.1			59.55	0.88	n.a.	n.a.	0.88	0.398	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	52.600	2.500	3445.0	3445.0	29.537	4.814	2.77		[redacted]	39.5			49.72	0.88	n.a.	n.a.	0.88	0.399	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	54.800	2.300	3465.0	3485.0	30.631	4.334	2.72		[redacted]	37.7			51.80	0.88	n.a.	n.a.	0.88	0.399	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.880	82.600	2.500	3486.3	3488.3	34.913	4.108	2.68		[redacted]	35.6			59.17	0.88	n.a.	n.a.	0.88	0.400	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	70.700	3.000	3506.3	3506.3	39.328	4.351	2.64		[redacted]	35.0			66.82	0.88	n.a.	n.a.	0.88	0.400	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	82.100	3.100	3527.5	3527.5	58.810	3.859	2.48		Sand	29.7	185	1.58	257.40	0.97	224.93	329.07	0.88	0.401	0.847	2.000	2.036	5.08	0.00	0.00
28.380	91.500	2.700	3547.5	3547.5	65.498	3.009	2.37		Sand	28.4	185	1.58	257.40	0.87	224.80	325.20	0.88	0.401	0.845	2.000	2.032	5.06	0.00	0.00
28.540	107.000	2.000	3567.5	3567.5	76.590	1.901	2.18		Sand	21.3	185	1.58	257.40	0.97	224.28	315.03	0.87	0.402	0.843	2.000	2.026	5.05	0.00	0.00
28.710	165.500	1.700	3588.8	3588.8	118.813	1.038	1.88		Sand	14.1		1.58	244.03	0.87	212.28	267.48	0.87	0.402	0.842	2.000	2.024	5.03	0.00	0.00
28.870	231.800	1.400	3608.8	3608.8	166.481	0.609	1.60		Sand	9.5		1.56	341.78	0.87	296.88	319.53	0.87	0.403	0.840	2.000	2.020	5.01	0.00	0.00
29.040	178.000	1.700	3630.0	3630.0	127.142	0.985	1.82		Sand	13.3		1.56	262.46	0.87	227.63	279.29	0.87	0.403	0.838	2.000	2.016	5.00	0.00	0.00
29.200	125.300	1.900	3650.0	3650.0	86.860	1.539	2.07		Sand	18.6	178	1.58	277.68	0.97	240.48	326.74	0.87	0.404	0.838	2.000	2.012	4.98	0.00	0.00
29.360	92.800	2.000	3670.0	3670.0	65.285	2.199	2.28		Sand	23.8	178	1.58	277.88	0.86	240.13	341.39	0.87	0.404	0.835	2.000	2.008	4.96	0.00	0.00
29.530	77.700	2.600	3691.3	3691.3	54.293	3.428	2.47		Sand	29.3	178	1.56	277.68	0.86	239.77	349.52	0.87	0.405	0.833	2.000	2.004	4.95	0.00	0.00
29.690	75.400	3.200	3711.3	3711.3	39.833	4.351	2.84		[redacted]	34.9			71.27	0.86	n.a.	n.a.	0.87	0.405	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	81.200	2.500	3732.5	3732.5	58.459	3.151	2.43	Plastic	[redacted]	28.2			78.75	0.86	n.a.	n.a.	0.87	0.406	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	68.300	2.700	3752.4	3751.2	35.415	4.085	2.85		[redacted]	35.4			64.56	0.86	n.a.	n.a.	0.87	0.406	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.190	85.300	2.400	3772.8	3760.8	33.722	3.785	2.85		[redacted]	35.2			81.72	0.86	n.a.	n.a.	0.86	0.407	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	76.400	2.000	3792.0	3770.2	52.756	2.684	2.40		Sand	27.4	300	1.35	405.00	0.86	347.76	469.80	0.86	0.407	0.827	2.000	1.988	4.88	0.00	0.00
30.510	163.700	2.300	3811.2	3779.4	114.426	1.422	1.97		Sand	16.3	300	1.35	405.00	0.86	347.53	446.86	0.86	0.408	0.826	2.000	1.987	4.87	0.00	0.00
30.680	346.300	3.400	3831.6	3788.2	243.245	0.987	1.63		Sand	9.9		1.35	441.88	0.86	378.92	411.54	0.86	0.408	0.825	2.000	1.985	4.86	0.00	0.00
30.840	455.600	4.000	3850.8	3798.4	320.050	0.882	1.51		Sand	8.2		1.35	581.34	0.86	498.19	514.07	0.86	0.409	0.824	2.000	1.983	4.85	0.00	0.00
31.010	482.700	5.100	3871.2	3808.2	338.724	1.081	1.56		Sand	8.9		1.35	615.92	0.86	527.47	553.65	0.86	0.409	0.824	2.000	1.981	4.84	0.00	0.00
31.170	485.800	4.600	3890.4	3817.4	340.349	0.951	1.52		Sand	8.3		1.35	619.62	0.86	530.30	548.84	0.86	0.409	0.823	2.000	1.979	4.83	0.00	0.00
31.330	401.400	4.100	3909.8	3826.8	280.752	1.026	1.80		Sand	9.5		1.35	512.18	0.86	438.07	468.51	0.86	0.410	0.822	2.000	1.978	4.83	0.00	0.00
31.500	382.900	4.200	3930.0	3836.4	267.400	1.103	1.64		Sand	10.1		1.35	488.58	0.85	417.60	455.12	0.86	0.410	0.821	2.000	1.976	4.82	0.00	0.00
31.660	320.700	3.800	3949.2	3845.8	223.463	1.129	1.70		Sand	11.1		1.35	409.21	0.85	349.54	394.20	0.86	0.411	0.821	2.000	1.974	4.81	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.60

Total Settlement: 0.22 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	Q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_{HL})	Interpreted Q_{cN}	C_N	Q_{cIN}	Q_{cIN-CS}	Stress Reduction Coeff, rd	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
31.930	338.500	3.000	3968.8	3855.4	234.238	0.897	1.81		Sand	9.8		1.35	429.37	0.85	386.52	394.35	0.66	0.411	0.820	2.000	1.972	4.80	0.00	0.00
31.980	315.800	3.700	3988.8	3884.8	218.472	1.179	1.72		Sand	11.4		1.35	402.96	0.85	343.75	391.92	0.95	0.411	0.819	2.000	1.970	4.79	0.00	0.00
32.150	237.300	5.100	4008.0	3873.8	164.397	2.187	2.00		Sand	18.9	300	1.35	405.00	0.85	345.28	448.78	0.85	0.412	0.819	2.000	1.969	4.78	0.00	0.00
32.320	159.000	4.700	4028.4	3883.6	109.525	2.894	2.22		Sand	22.2	300	1.35	405.00	0.85	345.05	474.41	0.85	0.412	0.818	2.000	1.967	4.77	0.00	0.00
32.480	79.900	4.100	4047.6	3892.8	39.959	5.272	2.99			38.9			75.43	0.85	n.a.	n.a.	0.85	0.412	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.850	79.100	2.900	4068.0	3902.8	53.638	3.763	2.50	Plastic		30.3			74.76	0.85	n.a.	n.a.	0.85	0.413	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	82.600	3.100	4087.2	3911.8	55.999	3.848	2.49		Sand	30.2	120	1.66	199.20	0.85	169.39	255.23	0.85	0.413	0.816	2.000	1.962	4.75	0.00	0.00
32.970	89.400	3.500	4106.4	3921.1	60.648	4.007	2.48		Sand	28.8	120	1.66	199.20	0.85	169.28	254.87	0.85	0.413	0.815	2.000	1.960	4.74	0.00	0.00
33.140	109.500	4.800	4126.8	3930.9	74.504	4.468	2.46		Sand	29.1	120	1.86	199.20	0.85	169.17	254.20	0.85	0.414	0.814	2.000	1.958	4.73	0.00	0.00
33.300	120.800	6.300	4148.0	3940.1	82.237	5.308	2.49		Sand	30.0		1.88	189.53	0.84	159.50	241.93	0.85	0.414	0.813	2.000	1.956	4.73	0.00	0.00
33.470	130.000	7.100	4168.4	3949.8	88.493	5.550	2.49		Sand	29.9		1.68	203.97	0.85	173.00	259.87	0.85	0.414	0.813	2.000	1.955	4.72	0.00	0.00
33.630	132.400	7.100	4185.6	3959.1	90.042	5.449	2.47		Sand	28.5		1.86	207.74	0.85	178.09	263.75	0.84	0.415	0.812	2.000	1.953	4.71	0.00	0.00
33.790	115.000	6.100	4204.8	3968.3	77.921	5.403	2.51		Sand	30.7	130	1.86	215.80	0.85	182.81	273.48	0.84	0.415	0.811	2.000	1.951	4.70	0.00	0.00
33.960	102.300	5.200	4225.2	3978.1	50.370	5.190	2.82			34.3			96.69	0.85	n.a.	n.a.	0.84	0.415	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	93.300	4.300	4244.4	3987.3	45.734	4.716	2.82			34.2			88.19	0.85	n.a.	n.a.	0.84	0.418	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	80.300	3.500	4264.8	3997.1	39.112	4.479	2.65			35.3			75.90	0.85	n.a.	n.a.	0.84	0.419	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	74.600	3.000	4284.0	4008.3	36.172	4.140	2.85			35.3			70.51	0.85	n.a.	n.a.	0.84	0.416	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	88.200	2.700	4303.2	4015.5	32.898	4.088	2.86			38.2			64.48	0.84	n.a.	n.a.	0.84	0.418	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	61.400	2.400	4323.8	4025.3	29.433	4.051	2.71			37.4			58.03	0.84	n.a.	n.a.	0.84	0.417	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	57.300	2.200	4342.8	4034.5	27.328	3.991	2.73			38.1			54.18	0.84	n.a.	n.a.	0.84	0.417	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.110	54.700	2.300	4363.2	4044.3	25.971	4.379	2.77			39.7			51.70	0.84	n.a.	n.a.	0.84	0.417	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	55.800	2.400	4382.4	4053.6	28.450	4.477	2.77			39.7			52.74	0.84	n.a.	n.a.	0.83	0.417	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	54.600	2.200	4401.6	4062.8	25.795	4.199	2.76			39.3			51.61	0.84	n.a.	n.a.	0.83	0.418	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	52.100	2.000	4422.0	4072.6	24.500	4.009	2.77			39.5			49.24	0.84	n.a.	n.a.	0.83	0.418	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	52.400	1.700	4441.2	4081.8	24.587	3.388	2.72			37.7			49.53	0.84	n.a.	n.a.	0.83	0.418	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	50.000	1.600	4461.6	4091.6	23.350	3.349	2.73			38.2			47.26	0.84	n.a.	n.a.	0.83	0.418	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	49.700	1.500	4480.8	4100.8	23.147	3.181	2.72			37.7			46.98	0.84	n.a.	n.a.	0.83	0.418	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.260	59.600	2.000	4501.2	4110.6	27.903	3.487	2.68			38.5			56.33	0.84	n.a.	n.a.	0.83	0.419	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	88.100	2.200	4520.4	4119.8	31.983	3.341	2.63			34.5			64.37	0.84	n.a.	n.a.	0.83	0.419	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	84.400	2.900	4539.6	4129.0	55.572	3.531	2.47	Plastic		29.4			79.77	0.84	n.a.	n.a.	0.83	0.419	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	96.700	3.200	4560.0	4138.8	83.811	3.389	2.42	Plastic		27.7			91.40	0.84	n.a.	n.a.	0.83	0.419	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	75.600	2.900	4579.2	4148.0	35.347	3.958	2.64			35.1			71.46	0.84	n.a.	n.a.	0.82	0.419	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.080	84.800	2.200	4599.8	4157.8	30.064	3.520	2.89			35.7			61.25	0.84	n.a.	n.a.	0.82	0.420	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	64.600	2.400	4618.8	4167.0	28.897	3.853	2.69			36.7			61.08	0.84	n.a.	n.a.	0.82	0.420	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	61.900	2.300	4638.0	4176.2	28.533	3.860	2.71			37.3			59.51	0.84	n.a.	n.a.	0.82	0.420	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	59.700	2.200	4658.4	4186.0	27.411	3.835	2.72			37.7			58.43	0.84	n.a.	n.a.	0.82	0.420	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	57.400	1.900	4677.8	4195.2	26.249	3.451	2.70			37.1			54.25	0.83	n.a.	n.a.	0.82	0.420	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.900	55.900	1.900	4698.0	4205.0	25.470	3.548	2.72			37.7			52.84	0.83	n.a.	n.a.	0.82	0.420	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	55.400	2.000	4717.2	4214.3	25.172	3.771	2.74			38.5			52.36	0.83	n.a.	n.a.	0.82	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	54.400	2.100	4738.4	4223.5	24.839	4.038	2.77			39.5			51.42	0.83	n.a.	n.a.	0.82	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	53.000	2.100	4756.8	4233.3	23.918	4.148	2.78			40.1			50.09	0.83	n.a.	n.a.	0.82	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	52.000	2.000	4776.0	4242.5	23.366	4.031	2.78			40.1			49.15	0.83	n.a.	n.a.	0.82	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.720	49.400	1.900	4796.4	4252.3	21.936	4.130	2.82			41.3			45.75	0.83	n.a.	n.a.	0.81	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	45.400	1.700	4815.6	4261.5	20.177	3.954	2.83			41.7			42.91	0.83	n.a.	n.a.	0.81	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	45.700	2.500	4834.8	4270.7	20.270	5.778	2.93			48.0			43.19	0.83	n.a.	n.a.	0.81	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	59.300	2.500	4855.2	4280.5	26.573	4.396	2.77			39.5			56.05	0.83	n.a.	n.a.	0.81	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	46.600	2.100	4874.4	4289.7	20.590	4.755	2.87			43.5			44.05	0.83	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.540	39.200	1.300	4894.8	4299.5	17.096	3.537	2.85			42.7			37.05	0.83	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	39.500	1.200	4914.0	4308.7	17.194	3.239	2.83			41.7			37.33	0.83	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	36.700	1.200	4933.2	4317.9	15.856	3.505	2.88			43.8			34.89	0.83	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	34.700	1.200	4953.6	4327.7	14.892	3.724	2.91			45.1			32.80	0.83	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.100	34.100	1.100	4972.8	4338.9	14.579	3.490	2.90			44.7			32.23	0.83	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.360	34.200	1.100	4993.2	4348.7	14.587	3.470	2.90			44.6			32.33	0.83	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	36.200	1.300	5012.4	4358.0	15.470	3.858	2.91			45.0			34.22	0.83	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	39.600	1.400	5031.6	4365.2	18.991	3.775	2.87			43.5			37.43	0.83	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	39.600	1.400	5052.0	4375.0	18.948	3.776	2.87			43.5			37.43	0.83	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	34.300	1.100	5071.2	4384.2	14.490	3.463	2.90			44.7			32.42	0.83	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.180	30.300	0.900	5091.6	4394.0	12.633	3.243	2.93			46.0			28.64	0.82	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	30.000	0.800	5110.8	4403.2	12.486	2.915	2.91			45.1			28.36	0.82	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	29.500	0.700	5130.0	4412.4	12.209	2.599	2.88			44.2			27.86	0.82	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	29.800	0.700	5150.4	4422.2	11.881	2.669	2.91			44.9			27.22	0.82	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	29.600	0.800	5168.8	4431.4	12.193	2.961	2.92			45.5			27.98	0.82	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.000	31.600	0.800	5190.0	4441.2	13.062	2.758	2.88			43.6			29.97	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	33.700	0.900	5209.2	4450.4	13.974	2.894	2.97			43.4			31.85	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00

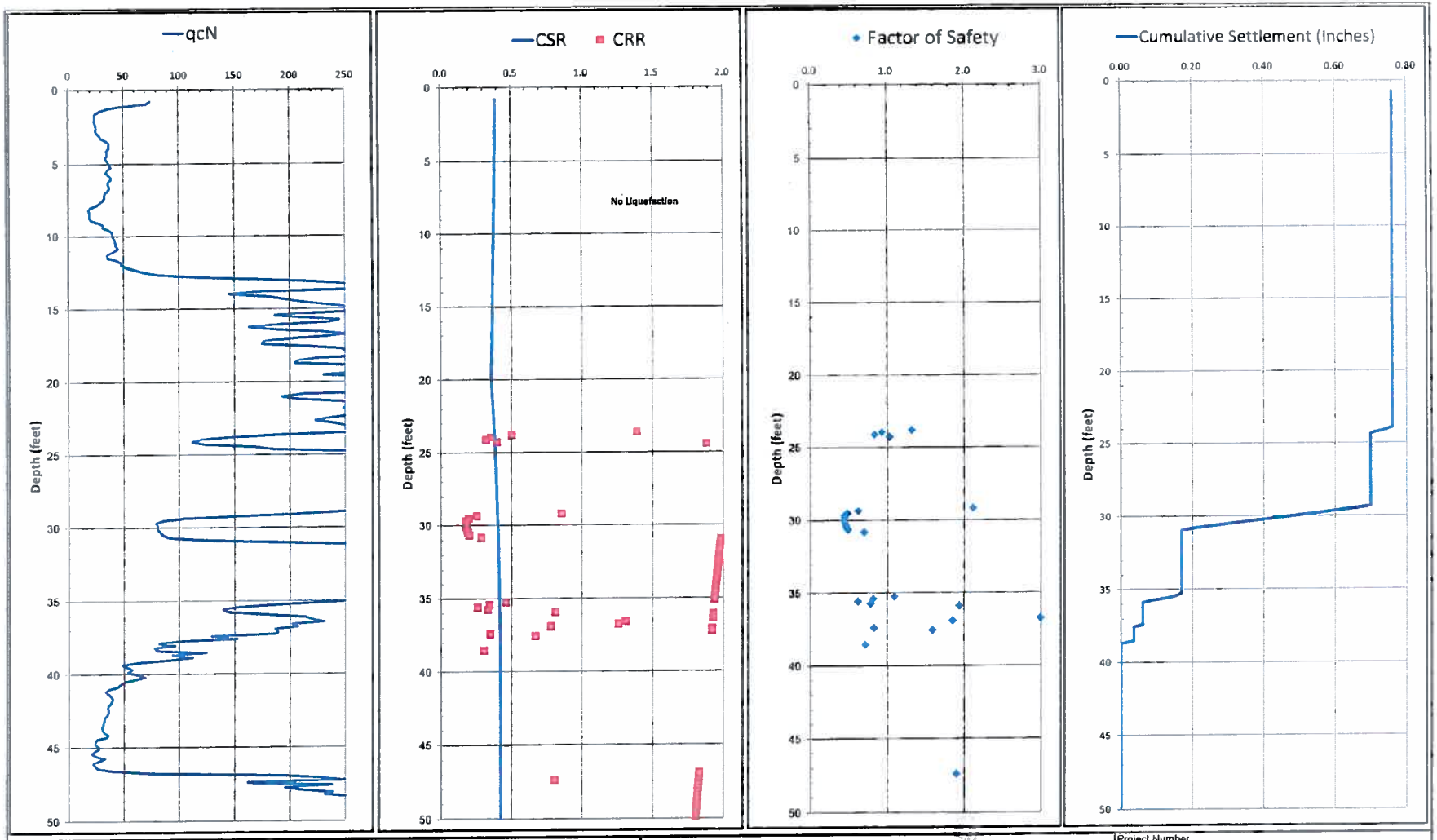
CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.60

Total Settlement:	0.22	(Inches)

Depth (ft)	Qc (tsf)	f_s (tsf)	Ovc (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	Qcn near interfaces (soft layer)	Thin Layer Factor (K_{H1})	Interpreted Q_{cN}	C_N	Q_{c1N}	Q_{c1N-CS}	Strass Reduction Coeff, rd	CSR	Ke for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
42.320	31.800	1.000	5228.4	4459.6	13.089	3.428	2.94			49.0			30.08	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	38.000	1.100	5248.8	4469.4	15.930	3.109	2.84			42.4			35.92	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	40.600	1.000	5268.0	4478.6	16.954	2.934	2.78			39.9			38.37	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.820	33.200	0.900	5288.4	4488.4	13.615	2.945	2.88			43.9			31.38	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	27.800	0.700	5307.6	4497.6	11.182	2.784	2.94			48.2			26.28	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.150	28.300	0.700	5328.0	4507.4	10.488	2.962	2.98			47.7			24.86	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	29.100	0.700	5347.2	4516.7	11.702	2.649	2.91			45.0			27.50	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	34.400	0.800	5366.4	4525.9	14.018	2.522	2.83			42.0			32.51	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	35.100	0.800	5386.8	4535.7	14.290	2.777	2.85			42.7			33.19	0.82	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	32.700	0.800	5406.0	4544.9	13.200	3.000	2.90			44.5			30.91	0.82	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.970	32.400	0.800	5426.4	4554.7	13.038	3.032	2.91			44.8			30.82	0.82	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	39.100	1.200	5445.6	4563.9	15.941	3.299	2.88			42.9			36.98	0.82	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.290	42.800	1.500	5464.9	4573.1	17.523	3.744	2.86			43.0			40.45	0.82	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	44.300	1.700	5485.2	4582.9	18.136	4.091	2.87			43.5			41.87	0.82	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	44.500	2.200	5504.4	4592.1	18.182	5.270	2.94			46.3			42.06	0.82	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.790	47.800	2.200	5524.8	4601.9	19.573	4.885	2.90			44.5			45.18	0.81	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	47.000	2.000	5544.0	4611.1	19.183	4.522	2.88			43.9			44.42	0.81	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	45.800	2.700	5563.2	4620.3	18.821	6.279	2.99			48.1			43.29	0.81	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	87.800	3.700	5583.6	4630.1	38.833	4.383	2.68			35.7			82.80	0.81	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	93.100	4.800	5602.8	4639.3	39.927	5.094	2.69			38.8			88.00	0.81	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.610	83.800	5.400	5623.2	4649.1	34.840	6.868	2.81			41.1			79.21	0.81	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	96.200	5.700	5642.4	4658.4	40.091	6.104	2.74			38.5			90.93	0.81	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	104.000	8.200	5661.6	4667.6	43.350	8.128	2.72			37.7			98.30	0.81	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	144.200	7.300	5682.0	4677.4	88.966	5.164	2.49		Sand	29.0			136.29	0.74	100.59	182.76	0.77	0.422	0.958	0.345	0.356	0.84	0.01	0.02
46.280	217.800	7.500	5701.2	4686.6	136.515	3.499	2.21		Sand	22.0			205.88	0.80	184.75	239.86	0.77	0.422	0.761	2.000	1.831	4.34	0.00	0.00
46.430	230.900	6.800	5721.6	4696.4	144.877	2.884	2.13		Sand	20.0			218.24	0.81	178.17	249.73	0.77	0.422	0.761	2.000	1.830	4.33	0.00	0.00
46.590	288.800	5.700	5740.8	4705.8	188.815	2.143	1.99		Sand	18.7			254.18	0.81	205.84	274.77	0.77	0.422	0.760	2.000	1.828	4.33	0.00	0.00
46.750	251.700	7.300	5760.0	4714.8	157.553	2.934	2.11		Sand	19.6			237.90	0.81	192.59	289.44	0.77	0.422	0.760	2.000	1.827	4.33	0.00	0.00
46.920	219.300	6.300	5780.4	4724.6	138.868	2.911	2.15		Sand	20.4			207.28	0.80	165.02	238.50	0.77	0.422	0.759	2.000	1.825	4.32	0.00	0.00
47.080	270.700	5.500	5799.6	4733.8	169.230	2.054	1.97		Sand	16.4			255.66	0.81	206.89	274.40	0.78	0.422	0.758	2.000	1.824	4.32	0.00	0.00
47.250	350.200	6.300	5820.0	4743.6	219.235	1.814	1.86		Sand	14.1			331.00	0.81	287.51	332.32	0.76	0.422	0.758	2.000	1.823	4.32	0.00	0.00
47.410	332.300	7.200	5839.2	4752.8	207.728	2.188	1.94		Sand	15.7			314.08	0.81	253.70	327.59	0.76	0.422	0.757	2.000	1.821	4.32	0.00	0.00
47.570	233.100	7.500	5858.4	4762.0	145.019	3.258	2.17		Sand	21.0			220.32	0.81	177.88	254.47	0.76	0.422	0.757	2.000	1.820	4.31	0.00	0.00
47.740	168.300	5.600	5879.8	4771.9	104.079	3.387	2.27		Sand	23.7			159.07	0.75	119.42	193.18	0.78	0.422	0.822	0.592	0.585	1.39	0.00	0.00
47.900	167.800	4.800	5898.0	4781.0	103.532	2.915	2.23		Sand	22.4			158.41	0.75	119.41	190.10	0.76	0.422	0.827	0.537	0.535	1.27	0.00	0.01
48.070	188.300	4.000	5918.4	4790.8	103.660	2.419	2.16		Sand	20.6			159.07	0.74	118.45	177.49	0.78	0.422	0.831	0.497	0.497	1.18	0.01	0.01
48.230	177.300	4.000	5937.6	4800.0	109.402	2.294	2.13		Sand	20.0			187.58	0.75	125.86	185.37	0.76	0.422	0.817	0.637	0.625	1.48	0.00	0.00
48.390	194.400	5.400	5956.8	4809.3	120.012	2.821	2.17		Sand	21.1			183.74	0.77	141.32	207.42	0.78	0.421	0.764	1.646	1.512	3.58	0.00	0.00
48.560	213.500	5.100	5977.2	4818.1	131.848	2.423	2.10		Sand	19.2			201.80	0.78	157.78	223.83	0.76	0.421	0.753	2.000	1.811	4.30	0.00	0.00
48.720	150.900	5.400	5996.4	4828.3	92.544	3.651	2.33		Sand	25.3			142.63	0.73	104.30	185.04	0.75	0.421	0.849	0.363	0.370	0.88	0.01	0.02
48.890	184.300	4.300	6016.8	4838.1	113.322	2.372	2.13		Sand	20.1			174.20	0.76	131.57	192.72	0.75	0.421	0.800	0.834	0.802	1.90	0.00	0.00
49.050	165.200	4.700	6038.0	4847.3	101.280	2.898	2.23		Sand	22.5			158.14	0.74	115.67	176.70	0.75	0.421	0.830	0.486	0.486	1.15	0.01	0.01
49.220	183.200	5.100	6056.4	4857.1	112.401	2.631	2.19		Sand	21.8			173.18	0.78	130.95	194.96	0.75	0.421	0.794	0.913	0.871	2.07	0.00	0.00
49.380	240.900	8.900	6075.6	4866.3	149.251	2.901	2.13		Sand	19.9			227.89	0.80	182.79	257.90	0.75	0.421	0.750	2.000	1.804	4.29	0.00	0.00
49.540	240.500	7.500	6094.8	4875.5	147.856	3.159	2.16		Sand	20.8			227.32	0.80	182.39	259.30	0.75	0.421	0.750	2.000	1.803	4.20	0.00	0.00
49.710	256.700	7.900	6115.2	4885.3	157.779	3.115	2.13		Sand	20.1			242.83	0.80	194.57	273.47	0.75	0.421	0.749	2.000	1.801	4.28	0.00	0.00
49.870	257.400	8.200	6134.4	4894.5	158.059	3.224	2.15		Sand	20.4			243.29	0.80	195.00	274.84	0.75	0.421	0.748	2.000	1.800	4.28	0.00	0.00
50.040	253.400	7.500	6154.8	4904.3	155.412	2.986	2.12		Sand	19.9			239.51	0.80	191.87	269.34	0.75	0.420	0.748	2.000	1.799	4.28	0.00	0.00
50.200	203.600	6.500	6174.0	4913.5	124.371	3.242	2.21		Sand	22.0			192.44	0.77	148.82	218.96	0.75	0.420	0.747	2.000	1.797	4.28	0.00	0.00



CORNERSTONE EARTH GROUP

Liquefaction Analysis Summary

4202 Stanley Boulevard
Pleasanton, California

Project Number	132-5-1
Figure Number	Figure C-3
1/30/2012	CPT No. 3

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.60

Total Settlement: 0.76 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	Q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted Q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, rd	C6R	Ka for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.820	78.600	1.200	102.5	102.5	337.326	1.528	1.69		Unsaturated	11.0			74.29	1.70	128.29	147.53	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	74.600	1.600	122.5	122.5	282.810	2.147	1.85		Unsaturated	13.8			70.51	1.70	119.87	156.44	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	48.800	1.400	143.8	143.8	180.331	2.915	2.06		Unsaturated	18.4			47.07	1.70	80.02	123.53	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	37.400	1.000	163.8	163.8	126.795	2.680	2.14		Unsaturated	20.3			35.35	1.70	80.09	101.50	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	30.200	0.800	185.0	185.0	98.241	2.657	2.22		Unsaturated	22.2			28.54	1.70	48.53	88.92	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	26.400	0.800	205.0	205.0	79.858	3.042	2.31		Unsaturated	24.8			24.95	1.70	42.42	83.14	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	25.500	0.800	225.0	225.0	73.587	3.151	2.35		Unsaturated	25.8			24.10	1.70	40.97	81.66	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	25.700	0.800	246.3	246.3	70.885	3.128	2.36		Unsaturated	26.1			24.29	1.70	41.29	82.42	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	25.400	0.800	268.3	268.3	67.325	3.166	2.38		Unsaturated	26.8			24.01	1.70	40.81	82.08	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	25.300	0.800	287.5	287.5	67.070	3.059	2.37		Unsaturated	26.4			24.86	1.70	42.26	83.85	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.480	26.800	0.800	307.5	307.5	68.087	3.002	2.37		Unsaturated	26.3			25.33	1.70	43.06	84.89	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.820	27.100	0.900	327.5	327.5	64.715	3.341	2.41		Unsaturated	27.5			25.81	1.70	43.54	86.12	1.00	0.390	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	26.700	0.900	348.8	348.8	61.756	3.393	2.43		Unsaturated	28.0			25.24	1.70	42.90	85.51	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	28.000	0.900	368.8	368.8	62.979	3.236	2.41		Unsaturated	27.4			26.47	1.70	44.99	88.01	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	30.200	1.000	390.0	390.0	68.059	3.333	2.40		Unsaturated	27.3			28.54	1.70	48.53	92.63	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	31.700	1.100	410.0	410.0	67.827	3.493	2.41		Unsaturated	27.5			29.96	1.70	50.94	95.94	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.450	35.800	1.200	431.3	431.3	74.502	3.372	2.37		Unsaturated	26.3			33.84	1.70	57.52	104.04	1.00	0.389	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	39.500	1.400	451.3	451.3	80.385	3.565	2.38		Unsaturated	26.2			37.33	1.70	63.47	111.83	1.00	0.388	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	39.300	1.500	471.3	471.3	78.240	3.840	2.40		Unsaturated	27.2			37.15	1.70	63.15	111.98	1.00	0.388	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	39.200	1.500	492.5	492.5	76.318	3.851	2.40		Unsaturated	27.4			37.05	1.70	62.99	111.88	0.99	0.388	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	37.200	1.500	512.5	512.5	70.952	4.060	2.44		Unsaturated	28.5			35.18	1.70	59.77	108.18	0.99	0.388	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	37.500	1.500	533.8	533.8	70.070	4.028	2.44		Unsaturated	28.8			35.44	1.70	60.26	108.83	0.99	0.387	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	37.600	1.300	553.8	553.8	68.959	3.483	2.40		Unsaturated	27.3			35.54	1.70	60.42	108.42	0.99	0.387	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	36.100	1.400	573.8	573.8	65.006	3.909	2.46		Unsaturated	28.9			34.12	1.70	58.01	106.00	0.99	0.387	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	37.100	1.500	595.0	595.0	65.598	4.078	2.47		Unsaturated	29.3			35.07	1.70	59.61	109.27	0.99	0.387	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	39.100	1.700	615.0	615.0	68.012	4.382	2.48		Unsaturated	29.7			36.98	1.70	62.83	112.72	0.99	0.386	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.080	40.500	1.800	636.3	636.3	69.261	4.480	2.48		Unsaturated	28.7			38.28	1.70	65.08	115.75	0.99	0.386	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	41.100	1.800	656.3	656.3	69.199	4.415	2.48		Unsaturated	29.8			38.85	1.70	66.04	116.98	0.99	0.386	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	38.400	1.900	678.3	678.3	63.837	4.729	2.52		Unsaturated	31.1			38.29	1.70	61.70	111.71	0.99	0.386	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	36.700	1.800	697.5	697.5	59.844	4.852	2.56		Unsaturated	32.1			34.69	1.70	56.97	108.38	0.99	0.388	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	38.900	1.800	717.5	717.5	62.559	4.670	2.52		Unsaturated	31.1			36.77	1.67	61.39	111.31	0.99	0.385	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	41.100	1.900	738.8	738.8	65.155	4.665	2.51		Unsaturated	30.7			38.85	1.64	63.59	114.12	0.99	0.385	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	41.100	1.800	758.8	758.8	64.274	4.420	2.50		Unsaturated	30.3			38.85	1.62	62.94	113.09	0.99	0.385	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.230	39.200	1.800	778.8	778.8	60.468	4.638	2.53		Unsaturated	31.3			37.05	1.61	59.77	109.21	0.99	0.385	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	38.300	1.700	800.0	800.0	58.259	4.485	2.53		Unsaturated	31.3			36.20	1.60	57.94	106.76	0.99	0.384	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.580	39.500	1.700	820.0	820.0	59.351	4.349	2.52		Unsaturated	30.8			37.33	1.58	58.91	107.91	0.98	0.384	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.730	39.600	1.700	841.3	841.3	58.731	4.339	2.52		Unsaturated	30.9			37.43	1.56	58.41	107.26	0.98	0.384	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	38.100	1.700	861.3	861.3	55.808	4.513	2.55		Unsaturated	31.8			38.01	1.55	55.89	104.16	0.98	0.384	1.099	n.a.	n.a.	n.a.	0.00	0.00
7.050	35.600	1.600	881.3	881.3	51.495	4.551	2.57		Unsaturated	32.7			33.65	1.55	52.12	99.33	0.98	0.383	1.093	n.a.	n.a.	n.a.	0.00	0.00
7.220	34.900	1.400	902.5	902.5	49.857	4.064	2.55		Unsaturated	31.8			32.99	1.54	50.70	97.21	0.98	0.383	1.089	n.a.	n.a.	n.a.	0.00	0.00
7.380	35.000	1.300	922.5	922.5	49.442	3.764	2.53		Unsaturated	31.1			33.08	1.52	50.35	98.55	0.98	0.383	1.086	n.a.	n.a.	n.a.	0.00	0.00
7.550	33.200	1.200	943.8	943.8	46.320	3.667	2.54		Unsaturated	31.5			31.38	1.51	47.54	92.89	0.98	0.383	1.081	n.a.	n.a.	n.a.	0.00	0.00
7.710	30.100	0.900	963.8	963.8	41.481	3.039	2.52		Unsaturated	30.8			28.45	1.52	43.13	86.80	0.98	0.382	1.075	n.a.	n.a.	n.a.	0.00	0.00
7.870	27.000	0.800	983.9	983.8	36.746	3.018	2.55		Unsaturated	32.0			25.52	1.52	39.69	81.16	0.98	0.382	1.070	n.a.	n.a.	n.a.	0.00	0.00
8.040	21.400	0.800	1005.0	1005.0	33.262	2.871	2.57		Unsaturated	32.8			20.23	1.53	30.94	70.92	0.99	0.382	1.063	n.a.	n.a.	n.a.	0.00	0.00
8.200	20.100	0.600	1025.0	1025.0	30.750	3.063	2.62		Unsaturated	34.1			19.00	1.52	28.89	68.43	0.98	0.382	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.370	20.800	0.600	1046.3	1046.3	31.378	2.959	2.60		Unsaturated	33.5			19.86	1.50	29.50	69.15	0.98	0.381	1.059	n.a.	n.a.	n.a.	0.00	0.00
8.530	20.700	0.600	1066.3	1066.3	30.797	2.975	2.61		Unsaturated	33.8			19.57	1.49	29.07	68.62	0.98	0.381	1.057	n.a.	n.a.	n.a.	0.00	0.00
8.690	20.700	0.800	1086.3	1086.3	30.364	2.977	2.61		Unsaturated	34.0			19.57	1.47	28.78	68.26	0.98	0.381	1.055	n.a.	n.a.	n.a.	0.00	0.00
8.860	22.700	0.700	1107.5	1107.5	32.933	3.161	2.60		Unsaturated	33.8			21.48	1.45	31.03	71.23	0.98	0.380	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.020	29.200	0.800	1127.5	1127.5	37.079	2.794	2.53		Unsaturated	31.2			27.60	1.41	39.95	81.18	0.97	0.380	1.058	n.a.	n.a.	n.a.	0.00	0.00
9.190	33.800	0.800	1148.8	1148.8	42.622	2.408	2.44		Unsaturated	28.5			31.95	1.38	44.10	87.28	0.97	0.380	1.059	n.a.	n.a.	n.a.	0.00	0.00
9.350	33.400	1.000	1168.8	1168.8	41.734	3.047	2.51		Unsaturated	30.8			31.57	1.37	43.21	86.89	0.97	0.380	1.057	n.a.	n.a.	n.a.	0.00	0.00
9.510	38.500	1.100	1188.8	1188.8	47.800	2.902	2.46		Unsaturated	29.0			36.39	1.34	48.89	93.87	0.97	0.379	1.058	n.a.	n.a.	n.a.	0.00	0.00
9.680	41.900	1.200	1210.0	1210.0	51.815	2.906	2.43		Unsaturated	28.3			39.80	1.32	52.43	98.28	0.97	0.379	1.059	n.a.	n.a.	n.a.	0.00	0.00
9.840	42.900	1.300	1230.0	1230.0	52.421	3.074	2.45		Unsaturated	28.6			40.55	1.31	53.17	99.42	0.97	0.379	1.057	n.a.	n.a.	n.a.	0.00	0.00
10.010	42.900	1.300	1251.3	1251.3	51.961	3.075	2.45		Unsaturated	28.7			40.55	1.30	52.75	98.80	0.97	0.379	1.055	n.a.	n.a.	n.a.	0.00	0.00
10.170	44.300	1.300	1271.3	1271.3	53.246	2.977	2.43		Unsaturated	28.2			41.87	1.29	53.95	100.28	0.97	0.378	1.054	n.a.	n.a.	n.a.	0.00	0.00
10.340	45.000	1.400	1292.5	1292.5	53.640	3.158	2.45		Unsaturated	28.7			42.53	1.28	54.31	100.96	0.97	0.378	1.053	n.a.	n.a.	n.a.	0.00	0.00
10.500	45.800	1.500	1312.5	1312.5	54.178	3.323	2.46		Unsaturated	29.1			43.29	1.27	54.81	101.79	0.97	0.378	1.051	n.a.	n.a.	n.a.	0.00	0.00
10.660	45.800	1.500	1332.5	1332.5	53.758	3.323	2.48		Unsaturated	27.8			43.29	1.26	54.43	101.31	0.97	0.377	1.050	n.a.	n.a.	n.a.	0.00	0.00
10.830	47.700	1.400	1353.8	1353.8	55.567	2.977	2.42		Unsaturated	28.6			45.09	1.25	56.15	103.02	0.97	0.377	1.049	n.a.	n.a.	n.a.	0.00	0.00
10.990	45.600	1.100	1373.8	1373.8	52.886	2.449	2.38		Unsaturated	26.8			43.10	1.24	53.51	98.89	0.97	0.377	1.046	n.a.	n.a.	n.a.	0.00	0.00
11.160	41.400	0.900	1395.0	1395.0	47.381	2.211	2.38		Unsaturated	26.7			39.13	1.24	48.51	92.31	0.97	0.377	1.042	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.60

Total Settlement	0.76	(inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	$q_{c\,IN}$	$q_{c\,IN\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5,\ \sigma'vc\ =\ 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (inches)
11.320	37.500	0.800	1415.0	1415.0	42.529	2.174	2.41		Unsaturated	27.8			35.44	1.24	43.89	86.90	0.96	0.378	1.039	n.a.	n.a.	n.a.	0.00	0.00
11.480	38.100	1.100	1435.0	1435.0	42.908	2.943	2.50		Unsaturated	30.2			36.01	1.23	44.17	88.00	0.96	0.376	1.038	n.a.	n.a.	n.a.	0.00	0.00
11.650	48.400	1.500	1456.3	1456.3	52.038	3.284	2.47		Unsaturated	29.3			43.88	1.21	52.88	99.29	0.96	0.376	1.040	n.a.	n.a.	n.a.	0.00	0.00
11.810	50.400	1.800	1476.3	1476.3	56.197	3.625	2.47		Unsaturated	29.5			47.64	1.19	56.79	104.61	0.96	0.375	1.040	n.a.	n.a.	n.a.	0.00	0.00
11.980	51.600	1.900	1497.5	1497.5	57.133	3.736	2.48		Unsaturated	29.7			48.77	1.18	57.68	105.86	0.96	0.375	1.038	n.a.	n.a.	n.a.	0.00	0.00
12.140	56.700	2.000	1517.5	1517.5	62.437	3.575	2.44		Unsaturated	28.4			53.59	1.17	62.71	112.04	0.96	0.375	1.039	n.a.	n.a.	n.a.	0.00	0.00
12.300	64.800	2.000	1537.5	1537.5	71.000	3.123	2.38		Unsaturated	28.0			61.25	1.16	70.80	121.42	0.96	0.375	1.040	n.a.	n.a.	n.a.	0.00	0.00
12.470	72.700	1.900	1558.8	1558.8	79.202	2.642	2.27		Unsaturated	23.7			68.71	1.14	78.57	128.64	0.96	0.374	1.041	n.a.	n.a.	n.a.	0.00	0.00
12.630	87.000	1.500	1578.8	1578.8	94.336	1.740	2.09		Unsaturated	19.0			82.23	1.13	92.94	141.21	0.96	0.374	1.043	n.a.	n.a.	n.a.	0.00	0.00
12.800	125.600	1.000	1600.0	1600.0	135.852	0.801	1.75		Unsaturated	11.9			118.71	1.11	132.27	180.24	0.96	0.374	1.049	n.a.	n.a.	n.a.	0.00	0.00
12.960	192.300	1.200	1620.0	1620.0	206.852	0.627	1.54		Unsaturated	8.8			181.78	1.09	197.93	207.88	0.96	0.373	1.077	n.a.	n.a.	n.a.	0.00	0.00
13.120	236.300	1.200	1640.0	1640.0	252.816	0.510	1.41		Unsaturated	8.9			223.35	1.07	239.70	242.09	0.96	0.373	1.076	n.a.	n.a.	n.a.	0.00	0.00
13.280	269.800	0.800	1661.3	1661.3	286.704	0.223	1.16		Unsaturated	4.1			254.82	1.07	271.82	271.82	0.96	0.373	1.073	n.a.	n.a.	n.a.	0.00	0.00
13.450	271.300	2.400	1681.3	1681.3	286.788	0.887	1.55		Unsaturated	8.7			256.43	1.06	272.47	285.91	0.96	0.372	1.069	n.a.	n.a.	n.a.	0.00	0.00
13.620	283.800	2.800	1702.5	1702.5	298.151	0.990	1.57		Unsaturated	9.1			269.24	1.06	284.08	301.32	0.95	0.372	1.065	n.a.	n.a.	n.a.	0.00	0.00
13.790	188.400	2.200	1722.5	1722.5	194.369	1.196	1.75		Unsaturated	12.0			176.18	1.06	187.40	223.13	0.95	0.372	1.062	n.a.	n.a.	n.a.	0.00	0.00
13.940	153.800	1.800	1742.5	1742.5	158.285	1.177	1.81		Unsaturated	13.1			145.37	1.07	155.23	193.62	0.95	0.372	1.047	n.a.	n.a.	n.a.	0.00	0.00
14.110	191.300	1.700	1763.8	1763.8	197.134	0.893	1.88		Unsaturated	10.4			180.81	1.06	191.33	214.77	0.95	0.371	1.055	n.a.	n.a.	n.a.	0.00	0.00
14.270	206.100	1.300	1783.8	1783.8	211.251	0.634	1.53		Unsaturated	9.5			194.80	1.05	205.39	215.24	0.95	0.371	1.051	n.a.	n.a.	n.a.	0.00	0.00
14.440	220.000	1.500	1805.0	1805.0	224.218	0.685	1.54		Unsaturated	8.6			207.94	1.05	217.87	228.51	0.95	0.371	1.048	n.a.	n.a.	n.a.	0.00	0.00
14.600	237.500	1.800	1825.0	1825.0	240.787	0.761	1.55		Unsaturated	8.7			224.48	1.04	233.73	245.99	0.95	0.370	1.044	n.a.	n.a.	n.a.	0.00	0.00
14.760	255.000	1.900	1845.0	1845.0	257.182	0.748	1.52		Unsaturated	8.4			241.02	1.04	249.89	260.02	0.95	0.370	1.041	n.a.	n.a.	n.a.	0.00	0.00
14.930	277.500	1.600	1868.3	1868.3	278.348	0.579	1.42		Unsaturated	7.0			262.29	1.03	271.12	274.02	0.95	0.370	1.038	n.a.	n.a.	n.a.	0.00	0.00
15.090	290.600	2.000	1888.3	1888.3	289.872	0.690	1.46		Unsaturated	7.5			274.67	1.03	283.13	288.83	0.95	0.369	1.034	n.a.	n.a.	n.a.	0.00	0.00
15.280	248.100	1.600	1907.5	1907.5	246.033	0.647	1.49		Unsaturated	7.9			234.50	1.03	241.17	248.28	0.95	0.369	1.031	n.a.	n.a.	n.a.	0.00	0.00
15.420	197.600	1.400	1927.5	1927.5	194.733	0.712	1.59		Unsaturated	9.4			186.77	1.03	192.41	208.01	0.95	0.369	1.027	n.a.	n.a.	n.a.	0.00	0.00
15.580	221.100	1.200	1947.5	1947.5	218.873	0.545	1.48		Unsaturated	7.8			208.98	1.03	214.31	220.18	0.94	0.368	1.025	n.a.	n.a.	n.a.	0.00	0.00
15.750	259.000	1.000	1968.8	1968.8	252.827	0.388	1.34		Unsaturated	6.0			244.80	1.02	249.58	250.14	0.94	0.368	1.022	n.a.	n.a.	n.a.	0.00	0.00
15.910	249.400	1.500	1988.8	1988.8	242.183	0.604	1.48		Unsaturated	7.7			235.73	1.02	239.76	245.83	0.94	0.368	1.019	n.a.	n.a.	n.a.	0.00	0.00
16.080	203.900	2.300	2010.0	2010.0	198.764	1.134	1.73		Unsaturated	11.7			192.72	1.02	195.63	229.90	0.94	0.368	1.015	n.a.	n.a.	n.a.	0.00	0.00
16.240	173.100	1.900	2030.0	2030.0	166.061	1.104	1.78		Unsaturated	12.5			163.61	1.01	165.85	201.88	0.94	0.367	1.011	n.a.	n.a.	n.a.	0.00	0.00
16.400	197.800	2.800	2050.0	2050.0	188.959	1.423	1.82		Unsaturated	13.3			186.96	1.01	188.67	233.72	0.94	0.367	1.010	n.a.	n.a.	n.a.	0.00	0.00
16.570	242.400	2.500	2071.3	2071.3	230.584	1.036	1.86		Unsaturated	10.4			229.11	1.01	230.41	257.15	0.94	0.367	1.006	n.a.	n.a.	n.a.	0.00	0.00
16.730	267.600	2.100	2091.3	2091.3	253.428	0.788	1.54		Unsaturated	8.7			252.93	1.00	253.72	286.21	0.94	0.366	1.004	n.a.	n.a.	n.a.	0.00	0.00
16.900	245.800	2.200	2112.5	2112.5	231.329	0.900	1.91		Unsaturated	9.7			232.14	1.00	232.24	252.47	0.94	0.366	1.000	n.a.	n.a.	n.a.	0.00	0.00
17.060	209.600	1.700	2132.5	2132.5	198.338	0.815	1.83		Unsaturated	10.0			198.11	1.00	197.84	218.15	0.94	0.366	0.998	n.a.	n.a.	n.a.	0.00	0.00
17.230	187.800	1.700	2153.8	2153.8	174.933	0.910	1.70		Unsaturated	11.2			177.50	0.99	176.49	204.19	0.94	0.365	0.995	n.a.	n.a.	n.a.	0.00	0.00
17.390	185.400	1.800	2173.8	2173.8	171.879	0.868	1.89		Unsaturated	11.0			175.24	0.99	173.69	199.97	0.94	0.365	0.993	n.a.	n.a.	n.a.	0.00	0.00
17.550	229.400	1.900	2193.8	2193.8	211.929	0.832	1.82		Unsaturated	9.7			218.82	0.99	214.58	233.99	0.93	0.365	0.989	n.a.	n.a.	n.a.	0.00	0.00
17.720	261.500	2.900	2215.0	2215.0	240.555	1.114	1.67		Unsaturated	10.6			247.18	0.99	244.20	273.93	0.93	0.364	0.986	n.a.	n.a.	n.a.	0.00	0.00
17.880	264.900	2.500	2235.0	2235.0	242.594	0.948	1.62		Unsaturated	9.7			250.38	0.99	246.79	268.32	0.93	0.364	0.984	n.a.	n.a.	n.a.	0.00	0.00
18.050	312.100	2.300	2256.3	2256.3	284.642	0.740	1.49		Unsaturated	7.9			294.99	0.98	290.04	297.90	0.93	0.364	0.981	n.a.	n.a.	n.a.	0.00	0.00
18.210	292.800	3.500	2276.3	2278.3	265.792	1.200	1.87		Unsaturated	10.8			278.75	0.98	271.47	303.18	0.93	0.363	0.978	n.a.	n.a.	n.a.	0.00	0.00
18.370	241.400	3.000	2298.3	2298.3	217.988	1.249	1.74		Unsaturated	11.7			228.17	0.98	223.30	281.20	0.93	0.363	0.975	n.a.	n.a.	n.a.	0.00	0.00
18.540	220.000	4.300	2317.5	2317.5	197.848	1.985	1.92		Unsaturated	15.2			207.94	0.98	203.01	283.03	0.93	0.363	0.973	n.a.	n.a.	n.a.	0.00	0.00
18.700	217.200	2.400	2337.5	2337.5	194.273	1.111	1.73		Unsaturated	11.7			205.29	0.97	199.51	233.86	0.93	0.362	0.970	n.a.	n.a.	n.a.	0.00	0.00
18.870	275.100	2.200	2358.8	2358.8	245.220	0.803	1.56		Unsaturated	8.0			260.02	0.97	252.67	267.02	0.93	0.362	0.967	n.a.	n.a.	n.a.	0.00	0.00
19.030	338.600	1.800	2378.8	2378.8	300.785	0.533	1.37		Unsaturated	6.4			320.04	0.97	310.31	311.65	0.93	0.362	0.965	n.a.	n.a.	n.a.	0.00	0.00
19.190	330.000	2.500	2398.8	2398.8	291.865	0.760	1.49		Unsaturated	7.9			311.91	0.97	301.76	310.00	0.93	0.361	0.962	n.a.	n.a.	n.a.	0.00	0.00
19.360	282.100	1.700	2420.0	2420.0	248.257	0.605	1.47		Unsaturated	7.6			288.64	0.97	257.38	283.02	0.93	0.361	0.960	n.a.	n.a.	n.a.	0.00	0.00
19.520	244.400	2.100	2440.0	2440.0	214.045	0.964	1.62		Unsaturated	9.9			231.00	0.96	222.09	243.11	0.92	0.361	0.957	n.a.	n.a.	n.a.	0.00	0.00
19.690	299.800	1.700	2461.3	2461.3	261.488	0.570	1.44		Unsaturated	7.2			283.16	0.96	272.11	275.79	0.92	0.360	0.955	n.a.	n.a.	n.a.	0.00	0.00
19.850	374.100	3.900	2481.3	2481.3	325.448	1.048	1.57		Unsaturated	9.0			353.59	0.96	339.04	358.07	0.92	0.360	0.952	n.a.	n.a.	n.a.	0.00	0.00
20.010	394.900	3.000	2501.3	2501.3	342.218	0.762	1.45		Sand	7.3			373.25	0.96	357.14	362.43	0.92	0.360	0.950	2.000	2.284	6.35	0.00	0.00
20.180	410.000	4.000	2522.5	2522.5	353.836	0.979	1.52		Sand	8.3			387.52	0.95	369.97	383.47	0.92	0.361	0.947	2.000	2.278	6.31	0.00	0.00
20.340	394.800	2.200	2542.5	2542.5	339.327	0.559	1.35		Sand	6.1			373.16	0.95	355.51	356.43	0.92	0.362	0.945	2.000	2.273	6.28	0.00	0.00
20.510	353.600	5.700	2563.8	2563.8	302.531	1.818	1.74		Sand	11.8			334.22	0.95	317.71	367.57	0.92	0.363	0.942	2.000	2.267	6.24	0.00	0.00
20.670	324.600	4.200	2583.8	2583.8	276.544	1.299	1.66		Sand	10.9			306.81	0.95	291.06	327.50	0.92	0.364	0.940	2.000	2.261	6.21	0.00	0.00
20.830	228.400	4.000	2603.8	2603.8	191.798	1.777	1.89		Sand	14.6			213.99	0.95	202.59	259.27	0.92	0.365	0.938	2.000	2.255	6.18	0.00	0.00
21.000	204.800	2.200	2625.0	2625.0	172.661	1.081	1.78		Sand	12.1			193.57	0.94	181.15	218.91	0.92	0.366	0.935	2.000	2.250	6.14	0.00	0.00
21.180	222.700	2.200	2645.0	2645.0	187.151	0.994	1.71		Sand	11.3			210.49	0.94	197.12	227.82	0.92	0.367	0.933	2.000	2.244	6.11	0.00	0.00
21.330	282.200	2.500	2666.3	2666.3	219.855	0.958	1.85		Sand	10.3			247.83	0.94	233.16	258.55	0.92	0.368	0.931	2.000	2.238	6.08	0.00	0.00
21.490	269.800	2.800	2686.3	2686.3	225.203	1.043	1.87		Sand	10.8			255.01	0.94	239.45	268.37	0.91	0.369	0.929	2.000	2.233	6.05	0.00	0.00
21.650	267.300	2.400	2706.3	2706.3	222.271	0.902	1.83		Sand	9.9			252.85	0.94	236.77	259.12	0.91	0.370	0.926	2.000	2.228	6.01	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.60

Total Settlement:	0.76	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
21.820	263.200	2.400	2727.5	2727.5	217.981	0.917	1.64		Sand	10.1			248.77	0.94	232.66	256.27	0.91	0.371	0.924	2.000	2.222	5.98	0.00	0.00
21.990	278.400	2.300	2747.5	2747.5	228.127	0.838	1.59		Sand	9.4			261.25	0.93	243.95	262.22	0.91	0.372	0.922	2.000	2.217	5.95	0.00	0.00
22.150	279.400	2.400	2768.8	2768.8	228.720	0.883	1.60		Sand	9.5			264.08	0.93	246.00	265.56	0.91	0.373	0.919	2.000	2.211	5.92	0.00	0.00
22.310	266.500	2.300	2788.8	2788.8	218.266	0.868	1.62		Sand	9.8			251.89	0.93	234.20	255.40	0.91	0.374	0.917	2.000	2.206	5.89	0.00	0.00
22.470	249.900	2.200	2809.8	2808.8	203.861	0.885	1.65		Sand	10.2			236.20	0.92	218.37	242.26	0.91	0.375	0.915	2.000	2.201	5.87	0.00	0.00
22.840	236.800	2.200	2830.0	2830.0	192.379	0.935	1.68		Sand	10.8			223.82	0.92	205.66	233.59	0.91	0.378	0.913	2.000	2.195	5.84	0.00	0.00
22.800	255.100	2.900	2850.0	2850.0	206.599	1.143	1.72		Sand	11.5			241.12	0.92	222.90	258.88	0.91	0.377	0.911	2.000	2.190	5.81	0.00	0.00
22.970	263.700	2.800	2871.3	2871.3	212.802	1.068	1.69		Sand	11.0			249.24	0.92	229.96	261.74	0.91	0.378	0.908	2.000	2.185	5.78	0.00	0.00
23.130	281.000	4.100	2891.3	2891.3	226.045	1.467	1.78		Sand	12.5			265.60	0.92	244.60	282.34	0.91	0.379	0.906	2.000	2.180	5.75	0.00	0.00
23.300	312.900	3.900	2912.5	2912.5	250.910	1.252	1.70		Sand	11.1			295.75	0.92	271.84	308.84	0.90	0.380	0.904	2.000	2.175	5.73	0.00	0.00
23.480	281.500	2.800	2932.5	2932.5	224.835	1.000	1.65		Sand	10.4			266.07	0.92	244.12	271.40	0.90	0.381	0.902	2.000	2.170	5.70	0.00	0.00
23.820	200.000	1.900	2952.5	2952.5	158.851	0.957	1.75		Sand	11.9			189.04	0.90	169.56	202.33	0.90	0.381	0.910	1.270	1.390	3.64	0.00	0.00
23.790	153.900	2.000	2973.8	2973.8	121.518	1.312	1.93		Sand	15.4			145.46	0.88	128.43	173.94	0.90	0.382	0.932	0.451	0.505	1.32	0.00	0.00
23.950	127.800	2.500	2993.9	2993.8	100.364	1.979	2.11		Sand	19.5			120.79	0.87	105.51	158.25	0.90	0.383	0.940	0.315	0.356	0.93	0.01	0.02
24.120	119.000	3.000	3015.0	3015.0	93.033	2.553	2.21		Sand	22.1			112.48	0.87	97.88	152.67	0.90	0.384	0.942	0.284	0.322	0.84	0.01	0.02
24.280	130.900	3.100	3035.0	3035.0	102.110	2.396	2.17		Sand	20.9			123.72	0.87	107.83	193.89	0.90	0.385	0.935	0.354	0.398	1.03	0.01	0.01
24.440	179.100	3.500	3055.0	3055.0	139.693	1.971	2.01		Sand	17.2			169.28	0.89	150.81	208.59	0.90	0.385	0.893	1.753	1.883	4.88	0.00	0.00
24.610	196.300	3.300	3078.3	3078.3	152.874	1.694	1.94		Sand	15.8			185.54	0.89	165.62	220.19	0.90	0.386	0.889	2.000	2.135	5.53	0.00	0.00
24.770	261.700	3.100	3098.3	3096.3	203.274	1.192	1.74		Sand	11.8			247.35	0.90	223.72	262.41	0.90	0.387	0.886	2.000	2.130	5.51	0.00	0.00
24.940	364.700	4.300	3117.5	3117.5	282.777	1.184	1.85		Sand	10.2			344.71	0.90	311.21	342.43	0.90	0.388	0.884	2.000	2.125	5.48	0.00	0.00
25.100	345.900	4.800	3137.5	3137.5	267.274	1.394	1.72		Sand	11.4			326.94	0.90	294.87	337.74	0.89	0.388	0.882	2.000	2.121	5.46	0.00	0.00
25.260	406.100	5.500	3157.5	3157.5	312.998	1.360	1.67		Sand	10.8			383.84	0.90	345.37	383.85	0.89	0.389	0.880	2.000	2.116	5.44	0.00	0.00
25.430	397.900	4.700	3178.8	3178.8	305.619	1.186	1.83		Sand	9.9			378.09	0.90	337.80	367.22	0.89	0.390	0.878	2.000	2.111	5.41	0.00	0.00
25.590	358.500	3.900	3198.8	3198.8	274.385	1.093	1.83		Sand	9.9			338.85	0.90	303.85	331.12	0.89	0.391	0.876	2.000	2.107	5.39	0.00	0.00
25.760	357.100	3.400	3220.0	3220.0	272.378	0.956	1.59		Sand	9.3			337.52	0.90	302.13	322.32	0.89	0.391	0.874	2.000	2.102	5.37	0.00	0.00
25.920	354.000	2.800	3240.0	3240.0	269.160	0.795	1.53		Sand	8.4			334.59	0.89	299.02	311.28	0.89	0.392	0.872	2.000	2.098	5.35	0.00	0.00
26.080	329.500	3.000	3260.0	3260.0	249.869	0.915	1.80		Sand	9.4			311.44	0.89	277.88	298.37	0.89	0.393	0.870	2.000	2.093	5.33	0.00	0.00
26.250	287.900	2.200	3281.3	3281.3	217.276	0.769	1.58		Sand	9.2			272.12	0.89	242.38	259.20	0.89	0.393	0.868	2.000	2.089	5.31	0.00	0.00
26.410	272.700	3.000	3301.3	3301.3	205.107	1.107	1.71		Sand	11.4			257.75	0.89	229.21	264.42	0.89	0.394	0.867	2.000	2.084	5.29	0.00	0.00
26.580	351.300	2.900	3322.5	3322.5	263.730	0.744	1.51		Sand	8.2			332.04	0.89	294.78	305.21	0.89	0.395	0.865	2.000	2.079	5.27	0.00	0.00
26.740	381.500	5.500	3342.5	3342.5	270.803	1.529	1.75		Sand	11.9			341.88	0.89	302.86	352.47	0.88	0.395	0.863	2.000	2.075	5.25	0.00	0.00
26.900	362.400	5.300	3362.5	3362.5	270.464	1.469	1.73		Sand	11.7			342.53	0.88	303.13	350.12	0.88	0.396	0.861	2.000	2.071	5.23	0.00	0.00
27.070	389.000	4.200	3383.8	3383.8	289.487	1.084	1.61		Sand	9.7			367.67	0.88	324.84	350.47	0.88	0.397	0.859	2.000	2.068	5.21	0.00	0.00
27.230	403.000	3.300	3403.8	3403.8	299.061	0.822	1.51		Sand	8.2			380.91	0.88	336.01	347.01	0.88	0.397	0.857	2.000	2.062	5.19	0.00	0.00
27.400	380.400	2.600	3425.0	3425.0	281.334	0.687	1.47		Sand	7.8			359.55	0.88	316.85	323.25	0.88	0.398	0.856	2.000	2.058	5.17	0.00	0.00
27.560	362.500	3.400	3445.0	3445.0	267.250	0.942	1.59		Sand	9.3			342.63	0.88	301.29	321.51	0.88	0.399	0.854	2.000	2.053	5.15	0.00	0.00
27.720	380.500	3.800	3465.0	3465.0	279.765	0.950	1.58		Sand	9.1			359.84	0.88	315.76	335.14	0.88	0.399	0.852	2.000	2.048	5.14	0.00	0.00
27.890	389.500	2.400	3486.3	3486.3	285.530	0.619	1.43		Sand	7.1			368.15	0.88	322.71	326.74	0.88	0.400	0.850	2.000	2.045	5.12	0.00	0.00
28.050	389.200	5.800	3506.3	3506.3	269.802	1.578	1.78		Sand	12.1			348.98	0.88	305.43	357.73	0.88	0.400	0.848	2.000	2.041	5.10	0.00	0.00
28.220	397.800	5.600	3527.5	3527.5	289.917	1.414	1.70		Sand	11.1			375.99	0.87	328.57	372.12	0.88	0.401	0.847	2.000	2.036	5.08	0.00	0.00
28.380	369.500	4.800	3547.5	3547.5	268.433	1.305	1.69		Sand	11.0			349.24	0.87	304.74	344.34	0.88	0.401	0.845	2.000	2.032	5.06	0.00	0.00
28.540	360.800	3.300	3567.5	3567.5	261.193	0.920	1.58		Sand	9.3			340.83	0.87	296.96	316.75	0.87	0.402	0.843	2.000	2.028	5.05	0.00	0.00
28.710	318.000	2.900	3588.8	3588.8	229.493	0.917	1.62		Sand	9.9			300.57	0.87	261.48	284.83	0.87	0.402	0.842	2.000	2.024	5.03	0.00	0.00
28.870	270.300	2.400	3808.8	3808.8	194.326	0.894	1.86		Sand	10.5			255.48	0.87	221.09	247.75	0.87	0.403	0.840	2.000	2.020	5.01	0.00	0.00
29.040	222.800	3.800	3830.0	3830.0	159.327	1.721	1.93		Sand	15.5			210.40	0.88	180.85	237.70	0.87	0.403	0.838	2.000	2.018	5.00	0.00	0.00
29.200	183.900	4.800	3850.0	3850.0	118.638	2.992	2.20		Sand	21.7			154.91	0.83	128.71	192.28	0.87	0.404	0.669	0.819	0.956	2.12	0.00	0.00
29.360	110.500	4.800	3870.0	3870.0	77.988	4.417	2.44		Sand	28.8			104.44	0.79	82.78	138.81	0.87	0.404	0.920	0.228	0.253	0.83	0.02	0.05
29.530	90.800	3.800	3891.3	3891.3	93.658	4.272	2.49		Sand	30.0			85.82	0.77	68.39	117.61	0.87	0.405	0.932	0.175	0.196	0.48	0.03	0.05
29.690	83.700	3.500	3711.3	3711.3	58.412	4.276	2.52		Sand	30.8			79.11	0.77	80.53	110.08	0.87	0.405	0.935	0.160	0.180	0.44	0.03	0.06
29.860	85.400	3.400	3732.5	3732.5	59.448	4.070	2.49		Sand	30.2			80.72	0.78	81.88	111.38	0.87	0.406	0.934	0.182	0.182	0.45	0.03	0.06
30.020	84.900	3.500	3752.4	3751.2	58.938	4.218	2.51		Sand	30.8			80.25	0.78	81.13	110.80	0.87	0.406	0.934	0.181	0.181	0.45	0.03	0.06
30.190	86.100	3.400	3772.8	3760.9	59.704	4.037	2.49		Sand	30.0			81.38	0.78	81.99	111.74	0.86	0.407	0.933	0.183	0.183	0.45	0.03	0.05
30.350	86.100	3.400	3792.0	3770.2	81.041	3.944	2.48		Sand	29.8			83.27	0.78	83.49	113.56	0.86	0.407	0.932	0.187	0.187	0.46	0.03	0.05
30.510	90.800	3.200	3811.2	3779.4	82.728	3.608	2.44		Sand	28.5			85.83	0.78	85.38	115.61	0.86	0.408	0.930	0.171	0.191	0.47	0.03	0.06
30.680	96.300	2.800	3831.8	3789.2	86.865	2.987	2.38		Sand	26.1			91.02	0.77	89.78	120.09	0.86	0.408	0.927	0.180	0.200	0.49	0.03	0.05
30.840	128.000	2.500	3850.8	3798.4	89.646	1.987	2.14		Sand	20.3			121.93	0.79	96.10	147.78	0.86	0.409	0.908	0.262	0.286	0.70	0.02	0.04
31.010	212.700	2.800	3871.2	3808.2	148.495	1.234	1.85		Sand	13.8			201.04	0.83	167.15	211.79	0.86	0.409	0.824	2.000	1.981	4.84	0.00	0.00
31.170	286.400	2.100	3890.4	3817.4	200.171	0.738	1.60		Sand	9.5			270.70	0.85	230.89	246.89	0.86	0.409	0.823	2.000	1.978	4.83	0.00	0.00
31.330	318.900	2.700	3909.6	3826.8	222.786	0.852	1.61		Sand	9.8			301.42	0.86	257.80	278.80	0.86	0.410	0.822	2.000	1.978	4.83	0.00	0.00
31.500	319.600	3.100	3930.0	3838.4	223.106	0.975	1.65		Sand	10.3			302.27	0.85	258.36	285.89	0.86	0.410	0.821	2.000	1.978	4.82	0.00	0.00
31.660	296.000	3.200	3949.2	3845.8	206.148	1.088	1.71		Sand	11.3			279.77	0.85	238.98	274.19	0.86	0.411	0.821	2.000	1.974	4.81	0.00	0.00
31.830	380.800	3.100	3969.8	3855.4	251.111	0.864	1.58		Sand	9.1			340.83	0.85	290.94	309.18	0.86	0.411	0.820	2.000	1.972	4.80	0.00	0.00
31.990	366.000	4.500	3988.8	3864.8	254.591	1.236	1.89		Sand	10.9			345.94	0.85	295.11	332.95	0.85	0.411	0.819	2.000	1.970	4.79	0.00	0.00
32.150	331.100	2.900	4008.0	3873.8	229.892	0.881	1.81		Sand	9.6			312.95	0.85	266.90	286.52	0.85	0.412	0.819	2.000	1.969	4.78	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.60

Total Settlement:	0.76	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, rd	CSR	K_σ for Sand	CRRM=7.5, σ'_{vc} = 1 atm	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
32.320	271.300	3.200	4028.4	3883.8	187.974	1.188	1.78		Sand	12.2			256.43	0.85	218.47	259.89	0.85	0.412	0.818	2.000	1.967	4.77	0.00	0.00
32.480	278.900	2.900	4047.6	3892.9	191.477	1.055	1.72		Sand	11.5			261.63	0.95	222.78	259.07	0.95	0.412	0.817	2.000	1.985	4.77	0.00	0.00
32.650	358.900	3.700	4068.0	3902.8	246.789	1.044	1.84		Sand	10.2			337.05	0.85	286.79	315.31	0.85	0.413	0.818	2.000	1.983	4.78	0.00	0.00
32.810	426.100	4.300	4087.2	3911.9	294.784	1.014	1.58		Sand	9.2			402.74	0.85	342.47	364.31	0.85	0.413	0.816	2.000	1.962	4.75	0.00	0.00
32.970	432.300	2.900	4106.4	3921.1	298.736	0.674	1.45		Sand	7.3			408.60	0.85	347.24	352.39	0.85	0.413	0.815	2.000	1.960	4.74	0.00	0.00
33.140	366.000	2.900	4126.8	3930.9	266.249	0.755	1.52		Sand	8.3			364.84	0.85	309.84	320.92	0.85	0.414	0.814	2.000	1.958	4.73	0.00	0.00
33.300	341.000	3.500	4146.0	3940.1	234.761	1.033	1.85		Sand	10.3			322.31	0.85	273.55	302.89	0.85	0.414	0.813	2.000	1.956	4.73	0.00	0.00
33.470	320.400	4.800	4166.4	3949.9	220.212	1.445	1.78		Sand	12.8			302.84	0.85	256.86	306.73	0.85	0.414	0.813	2.000	1.955	4.72	0.00	0.00
33.630	371.000	4.400	4185.8	3959.1	254.913	1.193	1.68		Sand	10.7			350.86	0.85	297.24	332.97	0.84	0.415	0.812	2.000	1.953	4.71	0.00	0.00
33.790	332.200	4.100	4204.8	3968.3	227.831	1.242	1.72		Sand	11.5			313.99	0.85	265.99	306.81	0.84	0.415	0.811	2.000	1.951	4.70	0.00	0.00
33.960	311.100	2.700	4225.2	3978.1	212.998	0.874	1.63		Sand	10.0			294.05	0.85	248.93	272.55	0.84	0.415	0.811	2.000	1.950	4.69	0.00	0.00
34.120	295.700	3.000	4244.4	3987.3	202.141	1.022	1.89		Sand	11.0			279.49	0.85	236.47	269.11	0.84	0.416	0.810	2.000	1.948	4.69	0.00	0.00
34.280	324.200	3.700	4264.8	3997.1	221.486	1.149	1.70		Sand	11.2			306.43	0.85	259.09	295.87	0.84	0.418	0.809	2.000	1.946	4.68	0.00	0.00
34.450	352.400	5.000	4284.0	4006.3	240.595	1.428	1.75		Sand	12.1			333.08	0.85	281.46	329.72	0.84	0.416	0.808	2.000	1.944	4.67	0.00	0.00
34.610	364.300	4.800	4303.2	4015.5	249.477	1.325	1.72		Sand	11.5			344.33	0.84	290.78	333.85	0.84	0.418	0.808	2.000	1.943	4.67	0.00	0.00
34.780	335.800	3.700	4323.6	4025.3	229.500	1.110	1.88		Sand	10.9			317.20	0.84	267.70	301.86	0.84	0.417	0.807	2.000	1.941	4.66	0.00	0.00
34.940	301.900	2.100	4342.8	4034.5	205.185	0.701	1.57		Sand	9.1			285.35	0.84	240.88	258.20	0.84	0.417	0.808	2.000	1.939	4.65	0.00	0.00
35.110	247.900	1.800	4363.2	4044.3	187.991	0.733	1.85		Sand	10.3			234.31	0.82	191.51	213.96	0.84	0.417	0.806	2.000	1.938	4.65	0.00	0.00
35.270	200.100	1.300	4382.4	4053.8	135.151	0.857	1.99		Sand	11.0			189.13	0.79	149.92	172.80	0.83	0.417	0.872	0.437	0.459	1.10	0.01	0.01
35.430	183.400	1.800	4401.8	4062.8	108.957	0.993	1.88		Sand	14.4			154.44	0.78	119.87	159.18	0.83	0.418	0.887	0.321	0.342	0.82	0.01	0.03
35.600	148.200	1.200	4422.0	4072.6	99.462	0.822	1.86		Sand	14.0			140.08	0.78	106.61	141.82	0.83	0.418	0.902	0.238	0.259	0.62	0.02	0.04
35.760	153.100	1.900	4441.2	4081.8	102.678	1.259	1.97		Sand	16.3			144.71	0.77	111.87	157.12	0.83	0.418	0.888	0.308	0.328	0.79	0.01	0.03
35.930	189.100	2.800	4461.6	4091.6	127.018	1.381	1.93		Sand	15.5			178.73	0.80	142.77	191.70	0.83	0.418	0.842	0.801	0.811	1.94	0.00	0.00
36.090	225.700	2.800	4480.8	4100.8	151.718	1.253	1.84		Sand	13.7			213.33	0.82	174.51	220.24	0.83	0.418	0.802	2.000	1.928	4.61	0.00	0.00
36.260	233.100	2.400	4501.2	4110.8	156.549	1.040	1.78		Sand	12.5			220.32	0.82	179.73	217.72	0.83	0.419	0.801	2.000	1.926	4.60	0.00	0.00
36.420	244.300	1.900	4520.4	4119.8	163.954	0.785	1.66		Sand	10.8			230.91	0.81	187.54	213.31	0.83	0.419	0.800	2.000	1.924	4.59	0.00	0.00
36.580	213.900	2.300	4539.6	4129.0	143.195	1.087	1.82		Sand	13.2			202.17	0.80	162.87	203.28	0.83	0.419	0.817	1.330	1.308	3.12	0.00	0.00
36.750	219.100	2.100	4560.0	4138.8	148.533	0.969	1.78		Sand	12.5			207.09	0.80	166.37	202.42	0.83	0.419	0.819	1.278	1.256	3.00	0.00	0.00
36.910	197.500	2.200	4579.2	4148.0	131.782	1.127	1.85		Sand	14.0			186.97	0.79	148.27	190.64	0.82	0.419	0.841	0.788	0.779	1.85	0.00	0.00
37.080	199.800	4.600	4599.9	4157.9	133.170	2.329	2.08		Sand	19.8			186.85	0.81	153.47	217.37	0.82	0.420	0.797	2.000	1.918	4.57	0.00	0.00
37.240	199.100	5.000	4618.8	4167.0	132.545	2.541	2.11		Sand	19.5			189.19	0.81	153.02	218.83	0.82	0.420	0.797	2.000	1.916	4.58	0.00	0.00
37.400	137.000	8.000	4638.0	4176.2	90.812	4.455	2.40		Sand	27.4			129.49	0.77	99.57	160.44	0.82	0.420	0.861	0.329	0.348	0.93	0.01	0.02
37.570	181.000	8.900	4658.4	4186.0	106.627	4.349	2.35		Sand	25.9			152.17	0.79	119.99	186.29	0.82	0.420	0.846	0.857	0.668	1.59	0.00	0.00
37.730	107.200	5.600	4677.6	4195.2	49.990	5.340	2.83			34.7			101.32	0.83	n.a.	n.a.	0.82	0.420	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.900	89.800	4.500	4699.0	4205.0	40.071	5.341	2.70			37.0			91.85	0.83	n.a.	n.a.	0.82	0.420	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	101.400	4.700	4717.2	4214.3	47.003	4.745	2.91			34.0			95.84	0.83	n.a.	n.a.	0.82	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	82.700	4.700	4736.4	4223.5	38.041	5.851	2.74			38.8			78.17	0.83	n.a.	n.a.	0.82	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	84.900	4.500	4756.8	4233.3	38.987	5.453	2.71			37.5			80.25	0.83	n.a.	n.a.	0.82	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	131.600	4.900	4778.0	4242.5	66.251	3.792	2.38		Sand	26.2			124.39	0.78	94.23	152.53	0.82	0.421	0.866	0.283	0.302	0.72	0.02	0.04
38.720	99.500	5.400	4796.4	4252.3	45.671	5.561	2.67			36.1			94.05	0.83	n.a.	n.a.	0.81	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	118.700	5.400	4815.6	4261.5	77.454	4.843	2.48	Plastic		29.1			112.19	0.83	n.a.	n.a.	0.81	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	97.800	4.800	4834.8	4270.7	44.575	4.833	2.83			34.8			92.25	0.83	n.a.	n.a.	0.81	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	97.000	2.900	4855.2	4280.5	30.171	4.491	2.73			38.2			83.33	0.83	n.a.	n.a.	0.81	0.421	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	51.900	2.400	4874.4	4289.7	23.061	4.852	2.84			42.3			49.05	0.83	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.540	56.800	2.300	4894.8	4299.5	25.190	4.247	2.77			39.7			53.50	0.83	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	90.900	1.900	4914.0	4308.7	27.128	3.251	2.87			38.1			57.56	0.83	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	56.800	1.700	4933.2	4317.9	25.074	3.140	2.89			38.7			53.50	0.83	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	85.600	2.000	4953.6	4327.7	28.172	3.168	2.64			35.0			82.00	0.83	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	73.000	2.400	4972.8	4336.9	32.518	3.404	2.63			34.5			99.00	0.83	n.a.	n.a.	0.81	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.360	83.200	2.800	4993.2	4346.7	27.931	4.613	2.77			39.4			59.74	0.83	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	53.300	2.800	5012.4	4356.0	23.322	5.512	2.88			43.6			50.38	0.83	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	48.500	2.900	5031.9	4365.2	21.527	5.534	2.90			44.7			48.79	0.83	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	47.000	2.200	5052.0	4375.0	20.331	4.947	2.89			44.1			44.42	0.83	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	39.000	1.800	5071.2	4384.2	19.635	4.388	2.92			45.4			36.86	0.83	n.a.	n.a.	0.80	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.180	35.600	1.200	5091.8	4394.0	15.045	3.630	2.90			44.7			33.65	0.82	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	38.500	1.200	5110.8	4403.2	18.327	3.338	2.85			42.7			36.39	0.82	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	40.500	1.400	5130.0	4412.4	17.195	3.891	2.88			43.1			38.28	0.82	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.970	42.000	1.500	5150.4	4422.2	17.830	3.805	2.86			42.9			39.70	0.82	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	41.500	1.600	5169.6	4431.4	17.563	4.112	2.86			44.0			39.22	0.82	n.a.	n.a.	0.80	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.000	40.300	1.500	5190.0	4441.2	19.980	3.978	2.89			44.0			38.09	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	36.100	1.400	5209.2	4450.4	15.951	3.944	2.90			44.8			38.01	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	37.400	1.500	5228.4	4459.9	15.800	4.312	2.94			46.1			35.35	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	38.300	1.800	5248.8	4469.4	15.964	4.485	2.94			46.2			36.20	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	37.900	1.700	5269.0	4478.9	15.749	4.821	2.96			47.2			35.82	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.60

Total Settlement:	0.76	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
42.820	38.700	1.600	5288.4	4488.4	15.175	4.998	2.97		Clay	47.4			34.69	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	34.400	1.700	5307.6	4497.8	14.117	5.355	3.03		Clay	50.0			32.51	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.150	33.900	1.700	5329.0	4507.4	13.890	5.442	3.04		Clay	50.5			32.04	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	33.300	1.600	5347.2	4516.7	13.562	5.224	3.04		Clay	50.3			31.47	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	32.900	1.300	5368.4	4525.9	13.353	4.302	2.99		Clay	48.2			31.10	0.82	n.a.	n.a.	0.79	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	31.900	1.200	5386.8	4535.7	12.878	4.109	2.99		Clay	48.2			30.15	0.82	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	32.600	1.300	5406.0	4544.9	13.156	4.348	3.00		Clay	48.6			30.61	0.82	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.970	34.000	1.800	5426.4	4554.7	13.738	5.114	3.03		Clay	49.8			32.14	0.82	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	37.500	1.900	5445.6	4563.9	15.240	5.463	3.01		Clay	49.2			35.44	0.82	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.290	38.700	1.300	5464.9	4573.1	14.855	3.827	2.92		Clay	45.4			34.89	0.82	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	27.100	1.100	5485.2	4582.9	10.830	4.518	3.08		Clay	52.2			25.81	0.82	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.820	25.500	1.000	5504.4	4592.1	9.907	4.396	3.10		Clay	52.9			24.10	0.82	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.790	25.200	1.000	5524.8	4601.9	9.751	4.457	3.11		Clay	53.3			23.82	0.81	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	28.200	1.000	5544.0	4611.1	11.029	3.933	3.03		Clay	50.0			26.65	0.81	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	28.500	1.100	5563.2	4620.3	11.133	4.277	3.05		Clay	50.8			26.94	0.81	n.a.	n.a.	0.78	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	24.800	0.700	5583.8	4630.1	9.420	3.210	3.03		Clay	50.2			23.25	0.81	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	22.700	0.800	5602.8	4639.3	8.578	3.015	3.05		Clay	51.0			21.46	0.81	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.910	26.700	0.900	5623.2	4649.1	10.278	3.798	3.04		Clay	50.6			25.24	0.81	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	34.300	1.000	5642.4	4658.4	13.515	3.177	2.90		Clay	44.8			32.42	0.81	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	28.400	0.800	5661.8	4667.8	10.956	3.129	2.97		Clay	47.7			26.64	0.81	n.a.	n.a.	0.77	0.423	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	23.700	0.700	5682.0	4677.4	8.919	3.356	3.07		Clay	51.5			22.40	0.81	n.a.	n.a.	0.77	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	25.400	0.800	5701.2	4686.6	9.623	2.881	2.98		Clay	47.9			24.01	0.81	n.a.	n.a.	0.77	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.430	28.000	0.800	5721.6	4696.4	10.706	3.182	2.99		Clay	48.2			26.47	0.81	n.a.	n.a.	0.77	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	40.100	2.100	5740.8	4705.6	15.824	5.641	3.01		Clay	49.0			37.90	0.81	n.a.	n.a.	0.77	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	78.700	5.000	5760.0	4714.8	31.314	6.773	2.85		Clay	42.5			72.50	0.81	n.a.	n.a.	0.77	0.422	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	199.800	7.900	5780.4	4724.6	124.427	4.016	2.28		Sand	24.0			188.86	0.78	147.84	220.92	0.77	0.422	0.759	2.000	1.825	4.32	0.00	0.00
47.080	240.000	5.900	5799.8	4733.8	149.830	2.488	2.07		Sand	18.6			229.84	0.81	183.43	254.48	0.76	0.422	0.758	2.000	1.824	4.32	0.00	0.00
47.250	263.800	9.000	5820.0	4743.6	164.893	3.450	2.18		Sand	20.7			249.34	0.81	201.51	284.11	0.76	0.422	0.758	2.000	1.823	4.32	0.00	0.00
47.410	171.300	9.700	5839.2	4752.6	106.191	5.781	2.45		Sand	28.8			181.91	0.78	123.00	192.51	0.76	0.422	0.805	0.827	0.800	1.90	0.00	0.00
47.570	251.500	9.300	5959.4	4782.0	156.612	3.741	2.20		Sand	21.8			237.71	0.81	191.92	274.31	0.76	0.422	0.757	2.000	1.820	4.31	0.00	0.00
47.740	207.200	8.200	5978.8	4771.8	129.563	4.014	2.28		Sand	23.7			195.84	0.79	154.34	228.98	0.76	0.422	0.758	2.000	1.818	4.31	0.00	0.00
47.900	222.500	8.000	5999.0	4781.0	138.053	3.644	2.22		Sand	22.4			210.30	0.80	168.16	244.70	0.76	0.422	0.755	2.000	1.817	4.31	0.00	0.00
48.070	252.000	9.100	5919.4	4790.8	156.436	3.854	2.19		Sand	21.5			238.19	0.81	191.99	273.94	0.76	0.422	0.755	2.000	1.815	4.31	0.00	0.00
48.230	244.900	9.500	5937.9	4800.0	151.824	3.927	2.23		Sand	22.4			231.47	0.81	186.49	268.64	0.76	0.422	0.754	2.000	1.814	4.30	0.00	0.00
48.390	278.000	8.400	5956.8	4809.3	171.171	3.077	2.11		Sand	19.5			260.97	0.81	210.06	291.37	0.76	0.421	0.754	2.000	1.813	4.30	0.00	0.00
48.580	311.700	8.300	5977.2	4819.1	193.350	2.669	2.03		Sand	17.7			294.81	0.80	237.11	319.21	0.76	0.421	0.753	2.000	1.811	4.30	0.00	0.00
48.720	280.600	6.800	5996.4	4828.3	173.700	2.450	2.03		Sand	17.5			265.22	0.80	213.34	288.01	0.75	0.421	0.753	2.000	1.810	4.30	0.00	0.00
48.890	287.400	7.800	6016.8	4838.1	177.768	2.872	2.05		Sand	18.1			271.64	0.80	218.40	296.71	0.75	0.421	0.752	2.000	1.808	4.29	0.00	0.00
49.050	342.300	7.700	6036.0	4847.3	211.877	2.269	1.95		Sand	15.8			323.53	0.80	259.99	336.36	0.75	0.421	0.751	2.000	1.807	4.29	0.00	0.00
49.220	324.600	9.000	6056.4	4857.1	200.740	2.797	2.03		Sand	17.8			306.99	0.80	248.56	330.53	0.75	0.421	0.751	2.000	1.806	4.29	0.00	0.00
49.380	363.400	8.500	6075.6	4868.3	224.601	2.359	1.95		Sand	15.8			343.48	0.80	275.73	355.41	0.75	0.421	0.750	2.000	1.804	4.29	0.00	0.00
49.540	399.100	8.700	6094.8	4875.5	246.613	2.197	1.90		Sand	14.8			377.22	0.80	302.86	380.40	0.75	0.421	0.750	2.000	1.803	4.28	0.00	0.00
49.710	390.800	7.400	6115.2	4885.3	241.196	1.908	1.85		Sand	13.9			369.38	0.80	296.21	365.03	0.75	0.421	0.749	2.000	1.801	4.28	0.00	0.00
49.870	406.400	6.900	6134.4	4894.5	250.858	1.711	1.81		Sand	13.0			384.12	0.80	307.88	389.72	0.75	0.421	0.748	2.000	1.800	4.28	0.00	0.00

EXHIBIT J

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

PUD-97

December 18, 2012

Mr. Jeff Schroeder
Vice President of Land Acquisition and Planning
PONDEROSA HOMES II, INC.
6130 Stoneridge Mall Rd., Ste. 185
Pleasanton, CA 94588

Subject: Results of riparian survey work conducted on the Wagner Project Site in the City of Pleasanton, Alameda County, California (PN 1696-01)

Dear Mr. Schroeder:

Per your request, Live Oak Associates, Inc. (LOA), conducted a site visit on the Wagner Property project site on December 11, 2012 to evaluate existing conditions and assist Ponderosa Homes with identification of the top of bank and the edge of riparian vegetation, for purposes of determining an appropriate riparian setback. The project site is located at 4202 Stanley Blvd. just east of Main Street, in the City of Pleasanton, Alameda County, CA.

Existing Conditions

The project site is currently developed with a residence, a mobile home park (including vacant and occupied mobile homes and vacant concrete pads) and small outbuildings. A chain link fence occurs near the top of the bank of the creek along the southern portion of the site. Existing concrete mobile home pads and mobile homes occur immediately adjacent to the fence line within the dripline of native riparian vegetation. Native riparian trees which were observed within the riparian corridor included western sycamore (*Platanus racemosa*), valley oak (*Quercus lobata*) and black walnut (*Juglans hindsii*). In addition to native trees, several non-native trees occur within or adjacent to the riparian corridor including ash (*Fraxinus veluntina*), blue gum (*Eucalyptus globulus*), plum (*Prunus cerasifera*) and privet (*Ligustrum* sp.).

City of Pleasanton General Plan Amendment Final Supplemental EIR

Prior to the site visit, LOA reviewed Table 6-1 (Mitigation and Reporting Program) of the City's General Plan Amendment Final Supplemental EIR (January 2012). Mitigation Measure 4.C-2 states, in essence, that the setback for any new grading or development at the Wagner site will be 20 feet from the top of bank or edge of riparian vegetation, whichever is further from the creek centerline.

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Oakhurst: P.O. Box 2697 • 39930 Sierra Way, Suite B • Oakhurst, CA 93644 • Phone: (559) 642-4880 • Fax: (559) 642-4883
Bakersfield: 8200 Stockdale Highway, M10-293 • Bakersfield, CA 93311

Results

LOA delineated both the top of the bank and the dripline of riparian vegetation on-site. Generally, the top of bank followed the 350 foot elevation line on the current project site plan (RJA, dated 12/6/12). In the eastern portion of the riparian corridor on-site, riparian vegetation did not extend beyond the top of the bank. In the western portion of the riparian corridor, the dripline of riparian trees extended approximately 10 to 12 feet beyond the top of the bank.

Delineation information for both the top of bank and the edge of riparian vegetation was provided to RJA in CAD format.

Conclusions/Setback Recommendations

Currently, as indicated above, development on the site, including mobile homes, concrete mobile home pads and outbuildings occur within the riparian dripline and immediately adjacent to the top of the bank. To be able to develop the site, Ponderosa Homes will need to do demolition work within the dripline of riparian trees in the eastern portion of the riparian corridor to remove concrete pads and existing structures. It appears that this work could be done without causing damage to riparian tree root systems as long as the work does not penetrate more than one foot below existing grade and given that a tree protection plan is developed by a qualified arborist.

Additionally, although the EIR states that no new development or grading will occur within 20 feet of the top of the bank or the edge of the riparian vegetation, existing development on the site already encroaches into the dripline and setback. Based on the current 15-lot project plan (RJA 12/6/12), the south east corner of the home on Lot 10 and the southernmost 7-8 feet of the home on Lot 8 would encroach within the 20 foot setback but not within the dripline of riparian vegetation. While grading for new homes within the dripline of riparian trees is not recommended, based on existing conditions of the site, it appears that some encroachment into the 20 foot setback would not result in any new impacts to the riparian corridor when compared with the impervious surfaces and disturbance that currently exists on-site within or in close proximity to the riparian corridor. In fact, the project as proposed, even considering some setback encroachment, would possibly result in the beneficial exchange of impervious surfaces with pervious landscaped areas on Lots 7 through 10 within the corridor and setback area.

Thank you for considering LOA to provide ecological services for the Wagner project. If you have any questions regarding our findings or recommendations, please feel free to contact me at (408) 281-5884 or by cell phone at (408) 833-5391.

Sincerely,

Pamela L Peterson

Pamela Peterson
Senior Project Manager
Plant and Wetland Ecologist

EXHIBIT K

EDWARD L. PACK ASSOCIATES, INC.

1975 HAMILTON AVENUE
SUITE 26
SAN JOSE, CA 95125

Acoustical Consultants

TEL: 408-371-1195
FAX: 408-371-1196
www.packassociates.com

June 11, 2013
Project No. 44-065-1

PUD-97

Ms. Pam Hardy
Ponderosa Homes
6130 Stoneridge Mall Road
Suite 185
Pleasanton, CA 94588

Subject: Revised Noise Mitigation Measures, Wagner Property Single-Family Development, Stanley Boulevard, Pleasanton

Dear Pam:

This letter will provide you with updated noise mitigation measures for the planned single-family development at the Wagner Property along Stanley Boulevard in Pleasanton to reflect revisions to the site plan, dated May 22, 2013. Since the original Noise Assessment Study, the plans indicate that the number of homes is being reduced to twelve, the rear yard of the most impacted home is being setback from 35 ft. to 47 ft. from the centerline of the road and the existing home on the site will remain.

As the minimum building setbacks will not change, the only modification will be to the noise control barrier at Lot 12. The noise control barrier at Lot 1 of the previous plan will no longer be necessary. Table I, below, provides the exterior noise exposures at the most impacted rear yard and at the most impacted planned building setback from Stanley Boulevard and the railroad.

TABLE I

Exterior Noise Exposures

		Stanley Blvd		UPRR/ACE		TOTAL	
Lots 1 & 14	Setback	Existing	Future	Typical Day	Busy Day	Existing	Future
Rear Yard and Planned Building Setback (Lot 12)	47 ft. to Stanley Blvd C_L. 452 ft. to RR Tracks	62	64	59	62	64	66

Table II, below, provides the interior noise exposures in the most impacted living spaces closest to Stanley Boulevard and the railroad. Note that this analysis did not change from the previous noise study.

TABLE II

Interior Noise Exposures

		Stanley Blvd		UPRR/ACE		TOTAL	
Lots 1 & 14	Setback	Existing	Future	Typical Day	Busy Day	Existing	Future
Living Spaces	47 ft. to Stanley Blvd. CL, 452 ft. to RR Tracks	37	39	34	37	39	41

As shown above, the interior noise exposures will be within the 45 dB DNL limit of the City of Pleasanton Noise Element standards.

To achieve compliance with the 60 dB DNL standard of the City of Pleasanton Noise Element for the exterior living areas impacted by Stanley Boulevard traffic, the following noise control barrier will be required:

- Construct a 6 ft. high acoustically-effective barrier along the rear yard of Lot 12 facing Stanley Boulevard. Continue the barrier along the easterly property line of Lot 12. The barrier may terminate at the property boundary with Lot 11. Turn the barrier to connect air-tight to the sides of the house. The barrier height is in reference to the nearest building pad elevation.

- Please see Figure 1 for the location and height of the required noise control barrier.

All other provisions, recommendations and noise control measures outlined in the original noise study remain in effect.

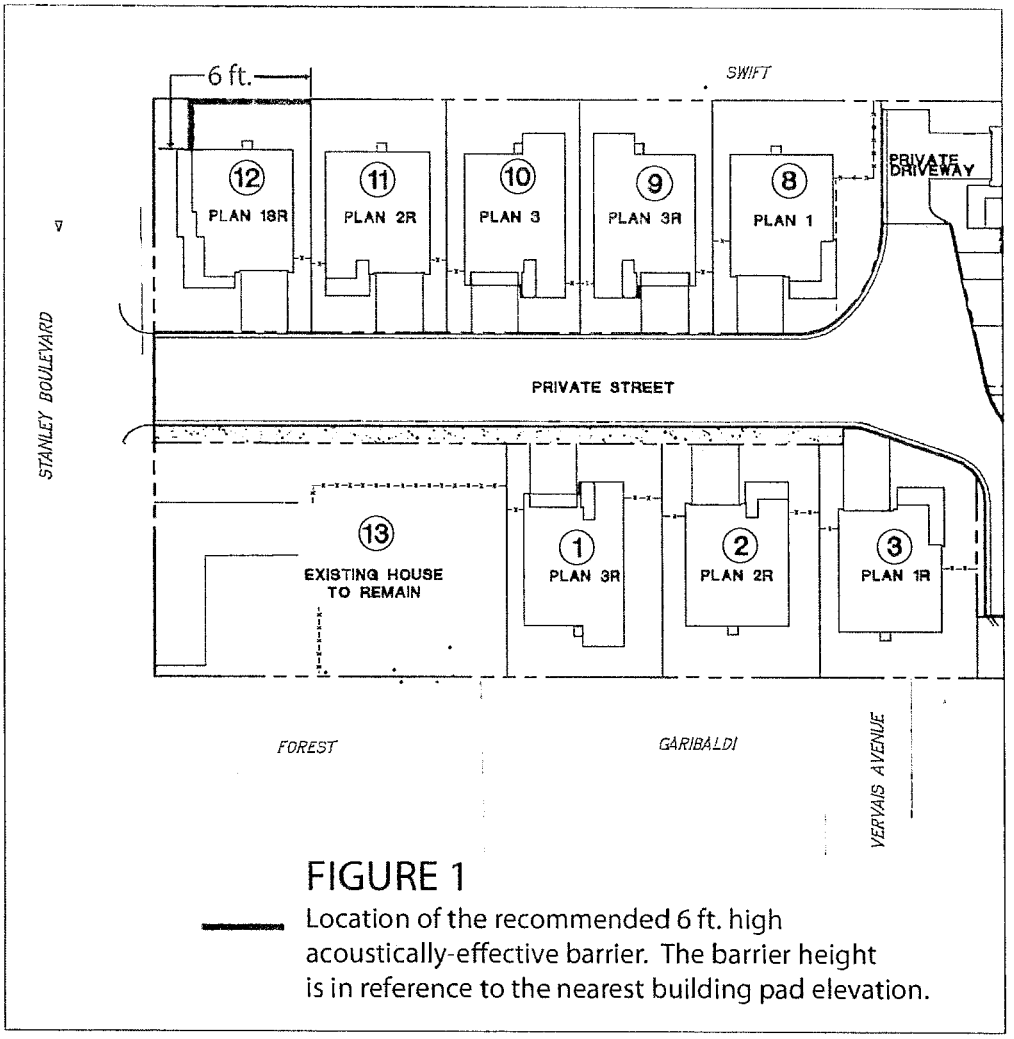

FIGURE 1

Location of the recommended 6 ft. high acoustically-effective barrier. The barrier height is in reference to the nearest building pad elevation.

If you have any questions or need additional information, please call me.

Sincerely,

EDWARD L. PACK ASSOC., INC.

Jeffrey K. Pack
President

EDWARD L. PACK ASSOCIATES, INC.

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PUD-97

PONDEROSA HOMES

DEC 26 2012

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December 20, 2012
Project No. 44-065

Mr. Jeff Schroeder
Ponderosa Homes
6130 Stoneridge Mall Road
Suite 185
Pleasanton, CA 94588

Subject: Noise Assessment Study for the Planned Single-Family Development, Wagner Property, Stanley Boulevard, Pleasanton

Dear Mr. Schroeder:

This report presents the results of a noise assessment study for the planned single-family development along Stanley in Pleasanton, as shown on the Site Plan, Ref. (a). The noise exposures and noise levels at the site were evaluated against the standards of the City of Pleasanton General Plan Noise Element, Ref. (b). An analysis of the on-site noise measurements indicates that the noise environment is created primarily by traffic sources on Stanley Boulevard and railroad operations on the adjacent Union Pacific Railroad/Altamont Commuter Express line. The results of the study reveal that noise exposure and noise level excesses occur and mitigation measures will be required.

Sections I and II of this report contain a summary of our findings and recommendations, respectively. Subsequent sections contain site, traffic, railroad and project descriptions, analyses and evaluations. Appendices A, B and C contain the list of references, descriptions of the standards, definitions of the terminology, descriptions of the instrumentation used for the field survey, general building shell controls and the on-site noise measurement data and calculation tables.

I. Summary of the Findings

The noise exposures presented herein were evaluated against the noise standards of the City of Pleasanton Noise Element, which utilizes the Day-Night Level (DNL) 24-hour descriptor to define acceptable noise levels for various land uses. The standards specify a limit of 60 dB DNL for single-family residential exterior areas and 45 dB DNL for residential interior living spaces. However, when the noise source is a railroad, the exterior noise exposure standard is 70 dB DNL as the noise environment is characterized by few loud events rather than a relatively constant source such as vehicular traffic. Because of the less restrictive exterior noise levels, short-term interior noise limits are applied to bedrooms and other interior spaces. The limit for bedrooms is 50 dBA instantaneous maximum (L_{max}) while the limit for other interior spaces is 55 dBA L_{max}.

It is important to note that using the "instantaneous maximum" (termed the L_{max} value) noise limit as a design criterion is not a recommended method to preclude noise impacts to residences. Because of its very short duration, being a one second rms value of a peak noise event, the L_{max} does not properly address the effects of noise on people. L_{max} values are usually very high, but often don't have any real effect because of the very short duration. Using L_{max} values for noise limits usually prohibits any noise sensitive land uses within close proximity to any significant noise source.

We advise against the use of the L_{max} noise descriptor as a noise limiting design criterion.

The noise exposures and noise levels shown below are without the application of mitigation measures, and represent the noise environment for the existing site conditions.

A. Exterior Noise Exposures

Table I, below, provides the exterior noise exposures at the most impacted side and rear yards, and at the most impacted planned building setback from Stanley Boulevard and the railroad.

TABLE I

Exterior Noise Exposures

		Stanley Blvd		UPRR/ACE		TOTAL	
Lots 1 & 14	Setback	Existing	Future	Typical Day	Busy Day	Existing	Future
Side and Rear Yards	35 ft. to Stanley Blvd. CL, 440 ft. to RR Tracks	64	66	59	62	65	67
Building Setback	47 ft. to Stanley Blvd C_L, 452 ft. to RR Tracks	62	64	59	62	64	66

As shown above, the exterior noise exposures will be up to 6 dB in excess of the 60 dB DNL standard of the City of Pleasanton Noise Element for traffic noise, but within the 70 dB DNL limit of the Noise Element for railroad noise.

B. Exterior Railroad Maximum Noise Levels

- The exterior maximum noise level at the most impacted planned building setback from railroad operations was measured to be 89 dBA.

C. Interior Noise Exposures

Table II, below, provides the interior noise exposures in the most impacted living spaces closest to Stanley Boulevard and the railroad.

TABLE II

Interior Noise Exposures

		Stanley Blvd		UPRR/ACE		TOTAL	
Lots 1 & 14	Setback	Existing	Future	Typical Day	Busy Day	Existing	Future
Living Spaces	47 ft. to Stanley Blvd. CL, 452 ft. to RR Tracks	37	39	34	37	39	41

As shown above, the interior noise exposures will be within the 45 dB DNL limit of the City of Pleasanton Noise Element standards.

D. Interior Railroad Maximum Noise Levels

- The interior maximum noise level in the most impacted bedrooms and living spaces from railroad operations will be up to 64 dBA. L_{max}. Thus, the noise levels will be up to 14 dB in excess of the 50 dBA L_{max} limit for bedrooms and up to 9 dB in excess of the 55 dBA L_{max} limit of other living spaces.

The findings reveal that exterior noise exposures and interior noise level excesses will occur at the site and mitigation measures will be required. The mitigation measures necessary to achieve the City of Pleasanton Noise Element standards are described in Section II of this report.

II. Noise Mitigation Measures

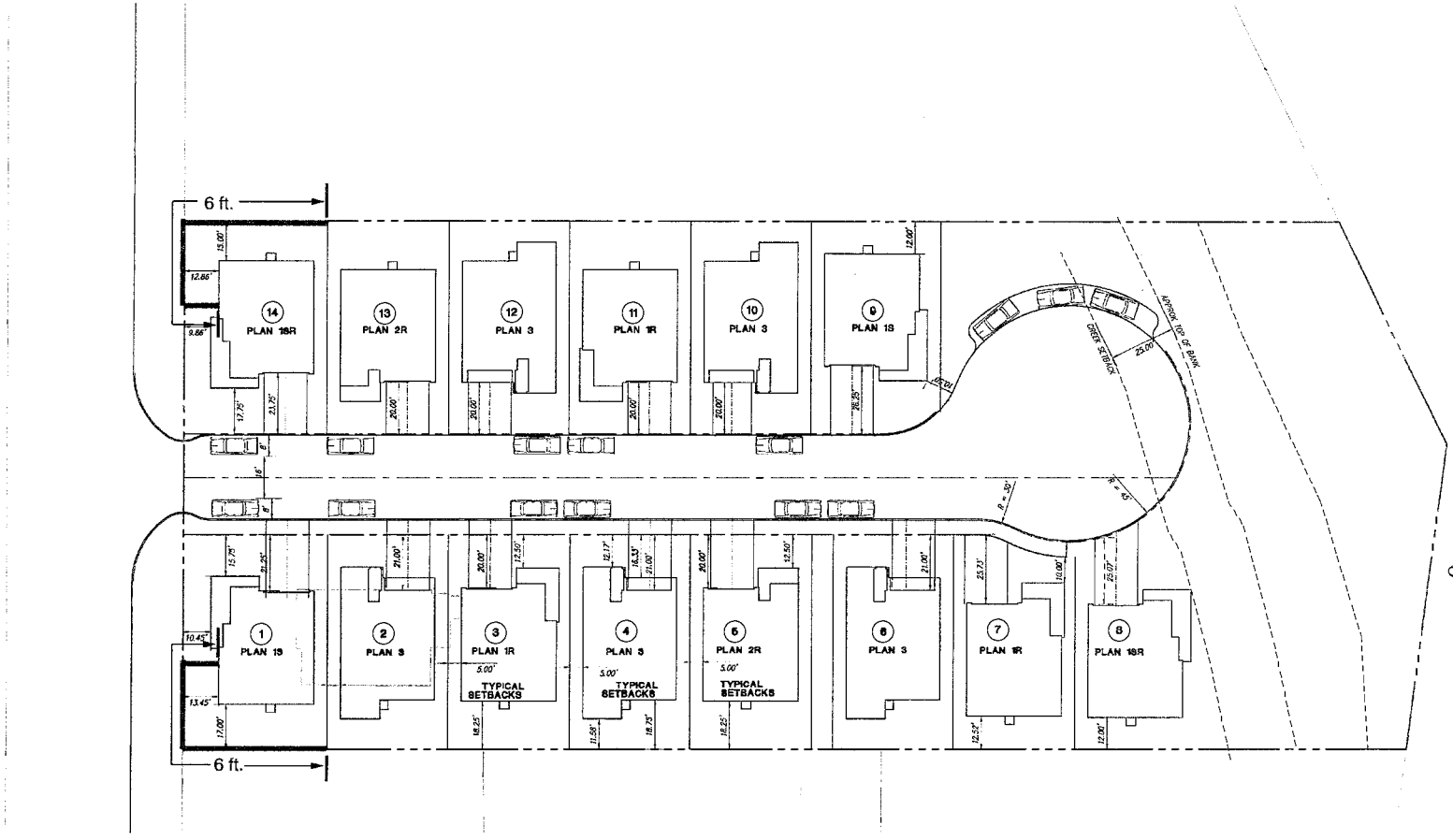
A. Exterior Noise

To achieve compliance with the 60 dB DNL standard of the City of Pleasanton Noise Element for the exterior living areas impacted by Stanley Boulevard traffic, the following noise control barrier will be required:

- Construct a 6 ft. high acoustically-effective barrier along the property lines of Lots 1 and 14 contiguous with Stanley Boulevard. Continue the barriers along the westerly property line of Lot 1 and along the easterly property line of Lot 14. The barriers may terminate at the property boundaries with Lots 2 and 13, respectively. Turn the barriers to connect air-tight to the sides of the houses. The barrier height is in reference to the nearest building pad elevation.

- Please see Figure 1 for the locations and heights of the required noise control barriers.

To achieve an acoustically-effective barrier, it must be made air-tight, i.e., without cracks, gaps, or other openings and must provide for long-term durability. The barriers can be constructed of wood, concrete, stucco, masonry, metal, earth berm or a combination thereof. If wood fencing is used, homogeneous sheet materials are preferable to conventional wood fencing as the latter has a tendency to warp and form openings with age. However, high quality, air-tight, tongue-and-groove, shiplap, or board and batten construction can be used, provided the minimum surface weight requirement is met and the construction is air-tight. Gates may be incorporated into the barrier return segments at the sides of Lots 1 and 14. The gates must be of the same height as the main barrier and must fit tight to the main barrier when closed. The gaps at the hinge and closure jambs shall be covered with astragals/stops. The gap below the gate shall be no more than 1" high. The noise control barriers must be constructed so that all joints, including connections with posts, pilasters or the building shell are sealed air-tight and no openings are permitted between the upper barrier components and the ground.



FOOTPRINTS USED FOR THIS SITE PLAN RECEIVED FROM WHA 8/22/12 (PLANS 1, 2 AND 3) AND 8/29/12 (PLAN 1S)

FIGURE 1

Locations of the recommended 6 ft. high noise control barriers. The barrier height is in reference to the nearest building pad elevation.

WAGNER PROPERTY

SITE PLAN

PLEASANTON, ALAMEDA COUNTY, CA

0 20 40 60

(IN FEET)
1 inch = 20 ft.

RJA
RUGGERI-JENSEN-AZAR
ENGINEERS • PLANNERS • SURVEYORS

DATE: AUGUST 29, 2012 JOB NO. 121001A SHEET 1 OF 1

B. Interior Noise Controls

To achieve compliance with the 50 dBA maximum standard for the bedrooms and the 55 dBA maximum standard for other living spaces, the following window controls will be required.

- Install windows and exterior doors per the Sound Transmission Class (STC) schedule shown in Table III, below.

TABLE III

Exterior Door and Window Sound Transmission Class Ratings

		North		West		South		East	
Lot	Floor	Bed	Living Space	Bed	Living Space	Bed	Living Space	Bed	Living Space
1, 14 (unshielded)	2	42	37	42	37	37	32	42	37
	1	42	37	42	37	37	32	42	37
1 (behind noise barrier)	1	37	32	37	32	28	28	28	28
14 (behind noise barrier)	1	37	32	28	28	28	28	37	32
2,3,4,5,10, 11,12,13	2	42	37	42	37	37	32	42	37
	1	42	37	42	37	37	32	42	37
6,7,8,9	2	37	32	37	32	32	28	37	32
	1	37	32	37	32	32	28	37	32

Note: Residential front doors with STC ratings higher than 28 are non-standard doors and may be difficult to appropriate. Glass doors rated higher than STC 37 are difficult to appropriate and could be cost prohibitive for this type of project.

All windows and doors must be of good quality and provide tight seals to prevent sound infiltration. To achieve an acoustically-effective window construction, sliding panels must form an air-tight seal when in the closed position. In addition, the window and door frames must be caulked to the wall opening around their entire perimeter with a non-hardening caulking compound or acoustical sealant.

When windows are maintained closed for noise control, they are to be operable, as the requirement does not imply a "fixed" condition. Also, under the closed window requirement some type of mechanical ventilation should be provided to assure a habitable environment, as specified by the Uniform Building Code (UBC) and described in Appendix B. In addition, general construction measures to assure an acceptable acoustical environment are recommended, as described in Appendix B.

The implementation of the above recommended measures will reduce interior noise levels to 50 dBA maximum in the bedrooms and to 55 dBA maximum in other interior spaces to comply with the standards of the City of Pleasanton Noise Element.

III. Site, Traffic, Railroad and Project Descriptions

The planned project site is located along Stanley Boulevard between Main Street and First Street in Pleasanton, and currently contains a single-family structure, several vacant mobile homes, one occupied mobile home and one occupied recreational vehicle. The site is relatively flat and at-grade with Stanley Boulevard. The railroad tracks are on a 2 ft. high gravel berm. Surrounding land uses include single-family residential adjacent to the south, commercial uses adjacent to the west, single-family residential and commercial uses across Stanley Boulevard to the north and single-family residential adjacent to the east.

The primary sources of noise at the site are traffic on Stanley Boulevard and rail operations on the UPRR/ACE rail line. Stanley Boulevard carries an existing Average Daily Traffic (ADT) of 8,951 vehicles. This traffic volume was calculated as an interpolation of 2008 and 2025 traffic volumes provided in the City of Pleasanton Noise Element.

The UPPR rail line operated 3 daytime freight trains and 5 nighttime freight trains on the day of the noise measurements. Freight operations are typically unscheduled and can vary from day to day, depending upon the demand for goods and services. The UPRR does not provide projections of future operations. Past studies of this rail lien indicate that some days carry more trains, which can increase the railroad noise exposure by approximately 3 decibels. Therefore, for the purposes of this study, we are assuming that future or "busy day" freight operations will be 3 dB higher than the currently measured operations.

The ACE rail line services 4 westbound trains in the morning and 4 eastbound trains in the afternoon, as reported by Altamont Commuter Express, Ref. (c). Note that two of the westbound trains occur during the nighttime hours before 7:00 a.m.

The planned project includes the construction of 14 two story single-family homes. Ingress and egress to the development will be by way of a project access street off of Stanley Boulevard.

IV. Analysis of the Noise Levels

A. Existing Noise Levels

To determine the existing noise environment at the site, continuous recordings of the sound levels were made at two locations. Location 1 was 35 ft. from the centerline of Stanley Boulevard corresponding to the planned minimum setback the homes from the road. Location 2 was 90 ft. from the centerline of Stanley Boulevard. This location was chosen for security of the sound measuring equipment. The measurements were made on December 3-4, 2012 using Larson-Davis 812 Precision Integrating Sound Level Meters. The meters yield, by direct readout, a series of descriptors of the sound levels versus time. The measured descriptors included the L_1, L_{10}, L_{50}, and L_{90}, i.e., those levels that are exceeded 1%, 10%, 50%, and 90% of the time. Also measured were the maximum and minimum levels, and the continuous equivalent-energy levels (L_{eq}), which are used to calculate the DNL. The measurements were made for a total period of 24 hours at each location and included recordings of the noise levels during representative hours of the

daytime and nighttime periods of the DNL index. The results of the measurements are shown in the data table in Appendix C.

As shown in the tables, the L_{eq}'s at Location 1, 35 ft. from the centerline of Stanley Boulevard, ranged from 59.0 to 66.9 dBA during the daytime and from 44.7 to 59.2 dBA at night.

The L_{eq} noise levels at measurement Location 2, 90ft. from the centerline of Stanley Boulevard ranged from 53.6 to 64.6 dBA during the daytime and from 40.7 to 60.1 dBA at night.

Noise levels generated by rail traffic only were derived from 1 minute time-history data measured at the site. Table IV, below, provide the L_{eq} noise levels for each train passby, the hourly L_{eq} for the train passby hour (which does not include other sources) and the resulting DNL.

TABLE IV

Railroad Noise Levels @ 440 ft., dBA L_{eq}

Time	Passby L_{eq}	Hourly L_{eq}	Train Type
2:54 PM	69.3 dBA	51.5 dBA	Freight
4:22 PM	66.0 dBA	51.2 dBA	ACE
5:18 PM	67.1 dBA	54.2 dBA	ACE
5:30 PM	67.3 dBA		ACE
12:46 AM	68.4 dBA	59.8 dBA	Freight
12:59 AM	76.4 dBA		Freight
2:11 AM	72.1 dBA	58.7 dBA	Freight
2:34 AM	66.0 dBA		Freight
5:29 AM	67.8 dBA	51.9 dBA	ACE
5:30 AM	60.5 dBA		Freight
6:46 AM	70.4 dBA	52.6 dBA	ACE
7:07 AM	70.7 dBA	58.6 dBA	Freight
7:52 AM	73.1 dBA		ACE
10:52 AM	69.1 dBA	51.3 dBA	ACE
12:42 PM	69.6 dBA	56.2 dBA	ACE

12:58 PM	72.0 dBA		Freight
DNL = 59 dB			

Traffic and rail noise diminish at a rate of 3-6 dB for each doubling of the distance from the source to the receiver. Thus, other locations on the site at greater distances from the roadways or railroad will have lower noise levels.

Table V, below, provides the measured L_{max} values at 440 ft. from the centerline of the tracks for each hour of the measurement period.

TABLE V

Railroad Maximum Noise Levels @ 440 ft., dBA L_{max}

Time	Maximum Noise Level, dBA	Train Type
2:54 PM	88.4	Freight
4:22 PM	82.2	ACE
5:18 PM	80.8	ACE
5:30 PM	82.6	ACE
12:46 AM	88.3	Freight
12:59 AM	86.2	Freight
2:11 AM	**88.8**	**Freight**
2:34 AM	85.5	Freight
5:29 AM	80.5	ACE
5:30 AM	81.1	Freight
6:46 AM	85.8	ACE
7:07 AM	85.9	Freight
7:52 AM	85.7	ACE
10:52 AM	80.2	ACE
12:42 PM	83.2	ACE
12:58 PM	87.7	Freight

B. Future Noise Levels

Future traffic volume data for Stanley Boulevard were acquired from information contained the City of Pleasanton Noise Element. The Noise Element provides traffic volume data for many roadways throughout the City for year 2008 (time of the General Plan) and for future year 2025. The traffic volume for Stanley Boulevard is predicted to increase from the existing 7,800 ADT to 14,000 ADT for 2025. Thus, traffic on Stanley Boulevard is expected to grow at a rate of 3.5% per year. Applying this growth rate from 2008 to 2012, the current traffic volume on Stanley Boulevard was calculated to be 8,951 vehicles ADT. From 2012 to 2025, the increase in traffic volume from 8,951 vehicles to 14,000 yields a 2 dB increase in the traffic noise levels.

V. Evaluation of the Noise Exposures

A. Exterior Noise Exposures

To evaluate the on-site noise exposures against the City of Pleasanton Noise Element standards, the DNL's for the survey locations were calculated by decibel averaging of the L_{eq}'s as they apply to the daily subperiods of the DNL index. A 10 decibel nighttime weighting factor was applied to account for the increased human sensitivity to noise at night. Adjustments were made to the measured noise levels to account for the difference in distance between the measurement locations and the various building setbacks, using methods established by the Highway Research Board, Ref. (d), and Wyle Laboratories, Ref. (e). The DNL formula is shown in Appendix B. The results of the calculations are shown in Appendix C.

The calculations show that the existing noise exposure at measurement Location 1, 35 ft. from the centerline of Stanley Boulevard, was 65 dB DNL. However, these noise exposures are a combination of both Stanley Boulevard traffic noise and rail noise. To segregate the two sources, the noise exposure generated by railroad sources only (Table IV) was subtracted from the total measured noise exposure. The difference resulted in the Stanley Boulevard traffic noise exposure of 64 dB DNL. Note that 65 dB – 59 dB = 64 dB.

Under future traffic and busy day rail operations, representing a worst-case scenario, the noise exposures were calculated to be 66 dB DNL from traffic and 62 dB DNL from rail operations. The total noise exposure is expected to be up to 67 dB DNL at the measurement location and most impacted property line. Thus, the noise exposures in the most impacted side and rear yards of the project will be up to 6 dB in excess of the 60 dB DNL limit of the City of Pleasanton Noise Element for traffic noise. The exterior noise exposures throughout the project will be within the 70 dB DNL limit of the standards for rail noise.

At the planned minimum building setback of 47 ft. from the centerline of Stanley Boulevard and 452 ft. from the railroad tracks, the traffic noise exposure reduces to 62 dB DNL, but railroad noise does not change. The total noise exposure is 64 dB DNL under existing conditions. Under future/busy day conditions, the noise exposure is expected to increase to 64 dB DNL from traffic and 62 dB DNL from rail operations, yielding a total noise exposure of 66 dB DNL.

The 60 dB DNL future noise contour from Stanley Boulevard traffic will be 87 ft. from the centerline of the road.

The noise exposures at measurement Location 2, 90 ft. from the centerline of Stanley Boulevard and 450 ft. from the UPRR/ACE rail tracks was calculated to be 62 dB DNL, with 60 dB DNL due to traffic and 59 dB due to rail operations.

B. Interior Noise Exposures and Noise Levels

Noise Exposures

To determine the interior noise exposures, a 25 dB reduction was applied to the exterior noise exposures at the minimum building setbacks to represent the attenuation provided by a typical building shell under a closed window condition. This condition assumes that residential dwellings have standard dual-pane, thermal insulating windows (nom. STC 28) that are kept closed all of the time, as adequate supplementary ventilation will be required by the Mechanical Code.

The interior noise exposures in living spaces of homes closest to Stanley Boulevard will be 39 and 41 dB DNL under existing and future conditions, respectively. Thus, the interior noise exposures will be within the 45 dB DNL standard of the City of Pleasanton Noise Element standard.

Noise Levels

To determine the interior L_{max} noise levels, a 25 dB reduction was applied to the exterior L_{max} values at the minimum building setbacks to represent the attenuation provided by a typical building shell under the closed window condition, as described above.

The highest exterior L_{max} value at the most impacted planned building setback is 89 dBA. The highest interior L_{max} value in the most impacted living spaces will be 64 dBA. Thus, the maximum noise levels will be up to 14 dB in excess of the 50 dBA L_{max} limit for bedrooms and up to 9 dB in excess of the 55 dBA L_{max} limit for other living spaces.

As shown by the above evaluations, exterior noise exposure and interior noise level excesses will occur and mitigation measures will be required. The required noise mitigation measures are described in Section II of this report.

The above report presents the results of a noise assessment study for the planned single-family development at the Wagner Property along Stanley Boulevard in Pleasanton. The study findings for present conditions are based on field measurements and other data and are correct to the best of our knowledge. The future noise level predictions are based on estimates made by Edward L. Pack Associates, Inc. from published information. Significant deviations in the predicted traffic or rail volumes, future changes in motor vehicle or railroad technology, speed limits, noise regulations, or other changes beyond our control may produce long-range noise results different from our estimates.

If you need any additional information or would like an elaboration on this report, please call me.

Sincerely,

EDWARD L. PACK ASSOC., INC.

Jeffrey K. Pack
President

Attachment: Appendices A, B and C

APPENDIX A

References:

(a) Site Plan, Wagner Property, by Ruggeri, Jensen, Azar, August 29, 2012

(b) Noise Element of the General Plan, City of Pleasanton, July 21, 2009

(c) http://www.acerail.com/schedules/train-schedule.htm

(d) Highway Research Board, "Highway Noise-A Design Guide for Highway Engineers", Report 117, 1971

(e) Wyle Laboratories Report WCR 73-5, "Assessment of Noise Environments Around Railroad Operations", July, 1973

APPENDIX B

Noise Standards, Terminology, Instrumentation and Building Shell Controls

1. Noise Standards

A. City of Pleasanton Noise Element Standards

The City of Pleasanton Noise Element, Chapter VIII, Adopted July 21, 2009 specifies exterior and interior noise exposure standards.

Residential Exterior

Source		Standard
Traffic		
	Single-Family	60 dB DNL
	Multi-Family (common areas)	65 dB DNL
Railroad		70 dB DNL
Aircraft		55 dB DNL 50 dBA L_{max} Bedrooms 55 dBA L_{max} Living Spaces

Residential Interior

		45 dB DNL
	For railroad sources:	50 dBA L_{max} Bedrooms 55 dBA L_{max} Other Interior Spaces
If more than 4 trains daytime or any trains nighttime		
Aircraft		50 dBA L_{max} Bedrooms 55 dBA L_{max} Living Spaces

2. Terminology

A. Statistical Noise Levels

Due to the fluctuating character of urban traffic noise, statistical procedures are needed to provide an adequate description of the environment. A series of statistical descriptors have been developed which represent the noise levels exceeded a given percentage of the time. These descriptors are obtained by direct readout of the Community Noise Analyzer. Some of the statistical levels used to describe community noise are defined as follows:

L_{10} - A noise level exceeded for 10% of the time, considered to be an "intrusive" level.

L_{50} - The noise level exceeded 50% of the time representing an "average" sound level.

L_{90} - The noise level exceeded 90 % of the time, designated as a "background" noise level.

L_{eq} - The continuous-equivalent level is that level of a steady noise having the same energy as a given time-varying noise. The L_{eq} thus represents the decibel level of the time-averaged value of sound energy or sound pressure squared. The L_{eq} is the noise descriptor used to calculate the DNL and CNEL descriptors.

B. Day-Night Level (DNL)

Noise levels utilized in the standards are described in terms of the Day-Night Level (DNL). The DNL rating is determined by the cumulative noise exposures occurring over a 24-hour day in terms of A-Weighted sound energy. The 24-hour day is divided into two subperiods for the DNL index, i.e., the daytime period from 7:00 a.m. to 10:00 p.m., and the nighttime period from 10:00 p.m. to 7:00 a.m. A 10 dBA weighting factor is applied (added) to the noise levels occurring during the nighttime period to account for the greater sensitivity of people to noise during these hours. The DNL is calculated from the measured L_{eq} in accordance with the following mathematical formula:

$$DNL = [(L_d+10\log_{10}15) \,\&\, (L_n+10+10\log_{10}9)] - 10\log_{10}24$$

Where:

L_d = L_{eq} for the daytime (7:00 a.m. to 10:00 p.m.)
L_n = L_{eq} for the nighttime (10:00 p.m. to 7:00 a.m.)
24 indicates the 24-hour period
& denotes decibel addition.

C. A-Weighted Sound Level

The decibel measure of the sound level utilizing the "A" weighted network of a sound level meter is referred to as "dBA". The "A" weighting is the accepted standard weighting system used when noise is measured and recorded for the purpose of determining total noise levels and conducting statistical analyses of the environment so that the output correlates well with the response of the human ear.

3. Instrumentation

The on-site field measurement data were acquired by the use of one or more of the sound analyzer listed below. The instrumentation provides a direct readout of the L exceedance statistical levels including the equivalent-energy level (L_{eq}). Input to the meters were provided by microphones extended to a height of 5 ft. above the ground. The "A" weighting network and the "Fast" response setting of the meters were used in conformance with the applicable standards. The Larson-Davis meters were factory modified to conform with the Type 1 performance standards of ANSI S1.4. All instrumentation was acoustically calibrated before and after field tests to assure accuracy.

Bruel & Kjaer 2231 Precision Integrating Sound Level Meter
Larson Davis LDL 812 Precision Integrating Sound Level Meter
Larson Davis 2900 Real Time Analyzer

4. Building Shell Controls

The following additional precautionary measures are required to assure the greatest potential for exterior-to-interior noise attenuation by the recommended mitigation measures. These measures apply at those units where closed windows are required:

- Unshielded entry doors having a direct or side orientation toward the primary noise source must be 1-5/8" or 1-3/4" thick, insulated metal or solid-core wood construction with effective weather seals around the full perimeter. Mail slots should not be used in these doors or in the wall of a living space, as a significant noise leakage can occur through them.

- If any penetrations in the building shell are required for vents, piping, conduit, etc., sound leakage around these penetrations can be controlled by sealing all cracks and clearance spaces with a non-hardening caulking compound.

- Fireplaces should be provided with tight-fitting dampers.

APPENDIX C

On-Site Noise Measurement Data and Calculation Tables

DNL CALCULATIONS

CLIENT: PONDEROSA HOMES
FILE: 44-065
PROJECT: STANLEY BLVD SINGLE-FAMILY
DATE: 12/3-4/2012
SOURCE: STANLEY BLVD, UPRR/ACE RAIL

LOCATION 1	Stanley Blvd/UPRR			
Dist. To Source	35 ft., 440 ft.			
TIME	Leq	10^Leq/10		
7:00 AM	65.7	3715352.3		
8:00 AM	64.5	2818382.9		
9:00 AM	63.3	2137962.1		
10:00 AM	62.8	1905460.7		
11:00 AM	63.5	2238721.1		
12:00 PM	63.9	2454708.9		
1:00 PM	63.3	2137962.1		
2:00 PM	63.4	2187761.6		
3:00 PM	66.9	4897788.2		
4:00 PM	64.8	3019951.7		
5:00 PM	64.8	3019951.7		
6:00 PM	63.2	2089296.1		
7:00 PM	62.6	1819700.9		
8:00 PM	60.3	1071519.3		
9:00 PM	59.0	794328.2	SUM=	36308848
10:00 PM	56.3	426579.5	Ld=	63.8
11:00 PM	52.8	190546.1		
12:00 AM	57.4	549540.9		
1:00 AM	48.2	66069.3		
2:00 AM	58.8	758577.6		
3:00 AM	44.7	29512.1		
4:00 AM	46.3	42658.0		
5:00 AM	55.4	346736.9		
6:00 AM	59.2	831763.8	SUM=	3241984
			Ld=	55.6
	Daytime Level=	75.6		
	Nighttime Level=	75.1		
	DNL=	**65**		
	24-Hour Leq=	62.2		

LOCATION 2	Stanley Blvd/UPRR			
Dist. To Source	90 ft., 450 ft.			
TIME	Leq	10^Leq/10		
7:00 AM	62.3	1698243.7		
8:00 AM	63.6	2290867.7		
9:00 AM	62.3	1698243.7		
10:00 AM	61.0	1258925.4		
11:00 AM	59.0	794328.2		
12:00 PM	62.1	1621810.1		
1:00 PM	58.2	660693.4		
2:00 PM	62.1	1621810.1		
3:00 PM	64.6	2884031.5		
4:00 PM	60.6	1148153.6		
5:00 PM	60.7	1174897.6		
6:00 PM	58.5	707945.8		
7:00 PM	57.8	602559.6		
8:00 PM	55.0	316227.8		
9:00 PM	53.6	229086.8	SUM=	18707825
10:00 PM	53.6	229086.8	Ld=	61.0
11:00 PM	49.7	93325.4		
12:00 AM	54.9	309029.5		
1:00 AM	43.4	21877.6		
2:00 AM	60.1	1023293.0		
3:00 AM	40.7	11749.0		
4:00 AM	42.2	16595.9		
5:00 AM	52.0	158489.3		
6:00 AM	56.6	457088.2	SUM=	2320535
			Ld=	54.1
	Daytime Level=	72.8		
	Nighttime Level=	73.6		
	DNL=	**62**		
	24-Hour Leq=	59.4		