

**COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT**

DATE: November 9, 2018

TO: Planning Commission

FROM: Planning Staff

SUBJECT: Consideration and approval of a detailed landscaping plan for the Ascension Heights Subdivision approved on appeal by the Board of Supervisors. The project is located in the unincorporated San Mateo Highlands area of San Mateo County. A condition of approval requires the applicant is to submit a landscaping plan for review and approval by the Planning Commission, including a 30-day public review and comment period before recordation of the Final Map.

County File Numbers: PLN 2002-00517
(San Mateo Real Estate and Construction)

PROPOSAL

Per the Board of Supervisor's decision letter dated February 16, 2016, the applicant is submitting a detailed landscaping plan to be considered for approval by the Planning Commission pursuant to the conditions required prior to recordation of the Final Map (condition 8.a.). A 30-day public review and comment period commenced on November 12, 2018 and concludes on December 12, 2018.

RECOMMENDATION

Staff recommends approval of the proposed detailed landscaping plan, subject to the conditions of approval included as Attachment A.

BACKGROUND

Report Prepared By: James A. Castañeda, AICP, 650/363-1853

Applicant/Owner: San Mateo Real Estate and Construction

Location: Six contiguous parcels of property (APN 041-111-130, -160, -270, -280, -320, and -360), consisting of a total of approximately 13.25 acres (gross), located in the unincorporated area of San Mateo County known as the San Mateo Highlands. The subject site is bordered to the west by Bel Aire Road, Ascension Drive to the south, existing single-family development to the north and west.

APN(s): 041-111-130, 041-111-160, 041-111-270, 041-111-280, 041-111-320, 041-111-360.

Existing Zoning: R-1/S-8 (Single-Family Residential/7,500 sq. ft. minimum lot size)

General Plan Designation: Medium Low Density Residential (2.4 – 6.0 dwelling units/acre).

Setting: The subject site is located at the northeast corner of the intersection of Bel Aire Road and Ascension Drive. It is situated on a hillside with average slopes of 40 percent. The subject site is surrounded by single-family dwellings, including the Baywood Park neighborhood to the northeast, the Enchanted Hills neighborhood to the southeast and southwest, and the Starlite Heights neighborhood to the northwest. The College of San Mateo campus is located less than 1/4-mile northeast of the subject site via Parrott Drive. At the center of the subject site is an existing potable water tank, owned and operated by the California Water Service Company (Cal Water) with several cellular communications facilities established on the site, located on a separate 22,500 sq. ft. parcel, which is not part of the proposed project. The site was graded over 40 years ago, which involved excavating the sides of the hill for the construction of Ascension Drive and Bel Aire Road during the grading for the Enchanted Hills subdivision. Eight-foot wide benches at 30-foot intervals were created along Ascension Drive as a result. Surface runoff from these benches has eroded the slope over the years, most significantly in the southwest corner adjacent to the intersection of Ascension Drive and Bel Aire Road. The site is characterized by grassland, small brush, and trees such as oak, pine and eucalyptus.

Chronology:

<u>Date</u>	<u>Action</u>
August 28, 2002	- Application submitted for proposed 25-lots.
December 9, 2009	- Planning Commission denied the proposed subdivision.
June 29, 2010	- Board of Supervisors considered an appeal by the applicant and remanded the project back to the Planning Commission for consideration of a revised project.
January 28, 2015	- Planning Commission considered the revised subdivision project and certification of Final Environmental Impact Report (FEIR) and continued the hearing to hear additional public testimony.
October 14, 2015	- Planning Commission approved the project.
October 28, 2015	- Appeal received.
February 9, 2016	- Board of Supervisors approved the project.

- March 2016 - Petition for judicial review of approval filed.
- May 2018 - Court of Appeal decision upholding County approval.

DISCUSSION

A. BACKGROUND

The approved project is a modification of the original 25-lot subdivision application that was denied by the Planning Commission in 2009. Based on feedback from the Planning Commission at that time, the applicant revised the design to reduce the size of the subdivision to 19-lots. The Planning Commission reviewed and considered the revised project at three Planning Commission hearings in 2015 and approved the project on October 14, 2015. As part of the conditions of approval, the Planning Commission required that landscaping plan minimize fire hazards, utilize native, drought-tolerant vegetation, and use water-efficient irrigation systems. A 30-day public review and comment period on the submitted landscaping plan was also required.

An appeal to the Board of Supervisors was received on October 28, 2015 from community members. Concerns were raised regarding the project's visual impacts, specifically that the preliminary landscape plan presented during the Planning Commission hearings did not sufficiently mitigate the project's visual impacts on the surrounding neighborhood. In order to address some of the concerns raised, staff proposed (1) a 20-foot "no-build area" where detached accessory structures would otherwise be allowed in the rear of proposed lots adjoining Parrot Drive properties (Lots 1-7), (2) planting and maintaining trees and landscaping to screen the development from Parrott Drive residences; and (3) limiting the height of new homes to 28 feet (as compared to 36 feet as allowed by zoning) and enforcing design guidelines that maintain low profiles for homes on sloped lots.

On February 9, 2016, the Board of Supervisors upheld the decision of the Planning Commission's approval, and accepted the aforementioned conditions of approval to address visual impacts with two modifications: (1) expanding the 20-foot "no-build area" to 30-foot along Lots 1-7; and (2) the landscape plan shall be reviewed and approved by the Planning Commission in addition to the 30-day public review and commenting period.

As the applicant is attempting to satisfy those conditions required before recordation of the final map, the landscape plan is now presented for review, comments, and consideration.

B. LANDSCAPING PLAN

After review and accepting comments from staff, the applicant has submitted a detailed landscaping plan that attempts to address the goals and objectives set forth by the Board of Supervisor in the 2016 condition of approval while balancing

the protection of existing trees on adjacent properties with plantings appropriate for the site. As a result, the plan does feature modifications from the 2016 conceptual plan reviewed during both the Planning Commission and Board of Supervisors hearing.

1. Consistency with 2016 Conceptual Plan

The proposed detailed plan maintains native vegetation along the Ascension Drive and Bel Aire Road boundary, as well as native grass/vegetation on the southern slope of the project site. Existing vegetation will also be retained around the rear of the southern slope lots (Lots 16-19) and on the southern and eastern water tank boundary, as well as along the southern and western slopes. Along Lots 1-7 (Parrot Drive adjacent lots), new trees and shrubs are proposed to provide screening.

2. Changes from the 2016 Conceptual Plan

In order to address the site's terrain and conditions, protect neighboring trees, and provide appropriate plantings, the detailed landscaping plan includes some modifications to the conceptual plan that accompanied the subdivision application.

a. Trail System

One area of significant modification is the proposed trail system along the southern slope area of the project site. The trail conceptualized as part of the preliminary landscaping plan was removed due to the real challenges and constraints of constructing and maintaining a trail system on the 1.6-1.9 to 1 slope. The trail now is limited to the area immediately adjacent to the water tank parcel which can support a six (6)-foot wide trail with ten (10)-foot lookouts. Wayfinding signage is proposed to be installed along the sidewalks guiding visitors from Bel Aire Road. The proposed location would also allow the trail to be easily maintained.

Another issue with constructing the trail in the originally proposed location, would be the visual impacts and additional extensive grading and engineering work that would be involved with the original trail alignment. Given the steep slopes, the trail would have to be constructed as a pile-supported "boardwalk" or as a paved surface down-slope of a retaining wall on a bench graded into the slope. Either of these would introduce a significant visual change, and may not be stable over the long run. Therefore, the modification proposed to locate the trail along the sidewalk and water tank parcel is supported by staff.

b. Southern Slope Vegetation

Plantings along the south slope have also been modified to better account for the site conditions to both install and maintain existing and future vegetation. The applicant is proposing a mix of native oak acorn plantings on selected areas of the south slope as well as native grass hydroseeding. The proposed vegetation is considerate of minimizing erosion issues that could result from an extensive irrigation system required of other types of vegetation. Staff believes this planting approach is appropriate for the slope by enhancing the visual ascetics while mitigating future issues with maintaining the vegetation, and avoiding the introduction of excessive fuel in an area designated as a Very High Fire Hazard area.

c. Lots 1-7 / Parrott Drive Adjacent Rear Landscaping

As part of the detailed landscape plan, the applicant has also provided a list of landscape improvement inclusions and exclusions to be incorporated into the Covenants, Conditions & Restrictions (CC&R). These landscape improvement inclusions/exclusions will clarify to future property owners, and the homeowners association the type of improvements they will be allowed to install in their rear yard, not including any structures as defined in the County's regulations; i.e., a "structure," is any ground level structure greater than 18 inches in height above grade. Items listed for inclusion include plantings and irrigation, on-grade flagstone, concrete patios and/or wood decks below 18 inches in height, landscaping elements no larger than five (5) feet wide and five (5) feet tall (i.e. fountains, pilasters, pilasters, decorative landscaping elements), movable and non-attached/ anchored landscaping furniture, and 12-volt lighting. A prototype sample of two scenarios are included as part of the detailed plan on page LP-1.

Staff believes the proposed items listed, as constrained are appropriate given that they don't constitute a structure by definition.

3. Consistency with the Board of Supervisor's Objectives

As part of the conditions of approval, the Board of Supervisor noted that "the landscape plan shall include the location, size, and species of any proposed landscaping and shall include, but not be limited to, hedges or other appropriate vegetation that will provide opaque screening between the northeastern edge of the project site and the residences along the southern side of Parrott Drive." The applicant is proposing tree and shrubs screening for Lots 1 through 7 (Parrot Drive adjacent lots).

The Board of Supervisors also required that all proposed landscaping shall be of native, non-invasive species that must also minimize fire hazards and

use water-efficient irrigation systems. The proposed detailed plan includes only native plants that are appropriate for the site would minimize fire hazard, and are water-efficient/drought tolerant.

4. Additional Minor Modifications to the Plan

As part of staff's review process of the submitted detailed landscaping plan, some items were noted for additional review and consideration that were not included. Those items are (1) potential impacts of installing an irrigation system on existing trees (both onsite and off-site); (2) minor uncertainty of landscaping plan's feasibility in certain limited areas as a result of any revisions to the current Civil Plans; (3) the final design of the Cal Water water main re-routing; and (4) additional assessment of proposed bioretention plantings adjacent to Parrot Drive lots. Staff feels believes that these items are minor, and can be addressed through proposed conditions of approval in attachment A.

ATTACHMENTS

- A. Proposed Recommended Finding and Conditions of Approval
- B. 2016 Conceptual Preliminary Plan
- C. Proposed Landscaping Plan
- D. Overview Statement from Applicant's Landscape Architect
- E. Submitted Arborist Report

JAC:ann - JACCC0456_WNU.DOCX

County of San Mateo
Planning and Building Department

RECOMMENDED FINDING AND CONDITIONS OF APPROVAL

Permit or Project File Number: PLN 2002-00517 Hearing Date: November 9, 2018

Prepared By: James A. Castañeda, AICP For Adoption By: Planning Commission

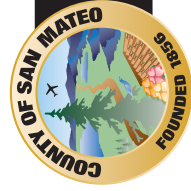
RECOMMENDED FINDING

As conditioned, the detailed landscaping plan conforms to the adopted conditions of the subdivision approval.

RECOMMENDED CONDITIONS OF APPROVAL

1. Prior to final recordation of the subdivision, the applicant shall submit an arborist's assessment of the proposed bioretention areas adjacent to the Parrot Drive lots, and the potential for them to impact trees along the property line. This assessment, and any associated recommendation to avoid potential impacts, shall be reviewed and approved by the Community Development Director.
2. Prior to final recordation of the subdivision, the applicant shall submit the proposed landscape irrigation plans, showing locations of all irrigation pipes and associated infrastructure (such as backflow prevention devices, irrigation controller) that will be located in the planting areas along Bel Aire Road and along the rear of the Parrot Drive lots (Lots 1-7), for Community Development Director review and approval.
3. Prior to final recordation of the subdivision, the applicant shall provide the final design of the Cal Water water main relocation, along with measures to ensure that the relocation will not cause irreparable harm to existing trees along the rear lots/Parrot Drive property lines. These measures, and any adjustments to the landscape plan required to accommodate this relocation, shall be reviewed and approved by the Community Development Director.
4. Prior to final recordation of the subdivision, the applicant shall submit a report documenting that the installation of the utilities and infrastructure identified by the final Civil Plans for the subdivision will not impact or require substantial modification of the detailed landscaping plan. Any minor modifications shall require Community Development Director review and approval. Any substantial modifications require Planning Commission approval.

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County of San Mateo - Planning and Building Department

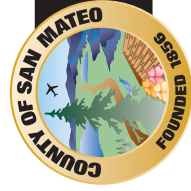
ATTACHMENT B

PRELIMINARY PLANT PALETTE

-  EXISTING PINE TREES TO REMAIN
-  EXISTING VEGETATION TO REMAIN
-  LYONOTHAMNUS FLORIBUNDUS - Catalina Ironwood
-  FREMONTODENDRON CALIFORNICUM - Flannel Bush and AESCULUS CALIFORNICA - California Buckeye
-  AGAVE AMERICANA - Agave
-  QUERCUS AGRIFOLIA - Coast Live Oak
-  HETEROMELES ARBUTIFOLIA - Toyon
-  ROMNEYA COULTERI - Matilija Poppy with MUEHLENBERGIA RICENS - Deer Grass at 4'-0" on center from 1' plugs
-  LYONOTHAMNUS FLORIBUNDUS - Catalina Ironwood
-  FREMONTODENDRON CALIFORNICUM - Flannel Bush
-  RHUS OVATA - Sugar Bush
-  AESCULUS CALIFORNICA - California Buckeye
-  COTONEASTER SPECIES - Cotoneaster
-  HETEROMELES ARBUTIFOLIA - Toyon
-  ARCTOSTAPHYLOS - Manzanita
-  CEANOTHUS RAY HARTMANI - Wild Lilac
-  CERCIS OCCIDENTALIS - California Redbud
-  VITIS VINIFERA - Chardonnay, Cabernet Sauvignon, Flame seedless, + Thompson Seedless
-  VALVE CONTROLLER LOCATION



ASCENSION HEIGHTS - PRELIMINARY SKETCH 'D'
 SCALE: 1" = 40'-0"
 MAY 30, 2018



County of San Mateo - Planning and Building Department

ATTACHMENT C

ASCENSION HEIGHTS • COMMON AREA LANDSCAPE

GENERAL NOTES

1. ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE PLANS, NOTES, AND DETAILS HEREIN. ALL WORK SHALL BE ADHERED TO AND ALL WORK SHALL BE DONE TO THE SATISFACTION OF THE OWNER. LANDSCAPE ARCHITECTS IN JURISDICTION SHALL VERIFY THE QUALITY OF THE WORK AND THE ACCURACY OF THE INFORMATION PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF ALL INFORMATION PROVIDED TO THE MOST CURRENT SAN MATEO COUNTY STANDARDS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL BECOME FAMILIAR AND COMPLY WITH THE PLANS, NOTES, AND DETAILS OF SAN MATEO COUNTY PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL BECOME FAMILIAR AND COMPLY WITH THE STANDARDS AND SPECIFICATIONS OF THE SAN MATEO COUNTY DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS. STANDARDS SHALL GOVERN WHEN IN CONFLICT WITH THE PLANS.
4. SPECIFICATIONS, SPECIFIC NOTES AND DETAIL DRAWINGS HEREIN TAKE PRECEDENCE OVER GENERAL DRAWINGS AND NOTES. IN THE EVENT THE CONTRACTOR DISCOVERS A DIFFERENCE OR CONFLICT IN THE PLANS, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE LANDSCAPE ARCHITECT IMMEDIATELY.
5. IN THE EVENT THE CONTRACTOR DISCOVERS A DIFFERENCE OR CONFLICT IN THE PLANS, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE LANDSCAPE ARCHITECT IMMEDIATELY.
6. NO OFF-SITE WORK IS TO BE PERFORMED BY THE CONTRACTOR UNTIL A "RIGHT-OF-ENTRY" AND/OR EASEMENT DOCUMENTS ARE OBTAINED FROM THE AFFECTED PROPERTY OWNERS) AND SAN MATEO COUNTY.
7. A PRE-CONSTRUCTION MEETING WITH THE OWNER AND CONTRACTOR SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION.
8. THE CONTRACTOR SHALL NOTIFY THE OWNER AND CONTRACTOR IMMEDIATELY IN WRITING OF ANY CHANGES TO THE ARCHITECT'S WORK BEFORE PROCEEDING THEREWITH. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST FOR CHANGE ORDER STATING ADDITIONAL COST OR CREDIT FOR CHANGE, PLAN, AND REVISIONS OF FIELD CHANGES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF CORRECTING AND REMEDIATING SUCH CHANGES. ANY REVISIONS ASSIGNED TO THE CONTRACTOR SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IMMEDIATELY IN WRITING OF ANY CHANGES TO THE PLANS, NOTES, AND DETAILS. ANY CHANGES TO THE PLANS, NOTES, AND DETAILS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF ALL INFORMATION PROVIDED TO THE MOST CURRENT SAN MATEO COUNTY STANDARDS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF ALL INFORMATION PROVIDED TO THE MOST CURRENT SAN MATEO COUNTY STANDARDS AND SPECIFICATIONS.
9. ANY DEVIATION OR CHANGES IN THESE PLANS WITHOUT THE WRITTEN APPROVAL OF THE OWNER AND LANDSCAPE ARCHITECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DEVIATION OR CHANGES IN THESE PLANS WITHOUT THE WRITTEN APPROVAL OF THE OWNER AND LANDSCAPE ARCHITECT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS AND APPROVALS FROM ALL AGENCIES AND AGENCIES AFFECTED BY THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS AND APPROVALS FROM ALL AGENCIES AND AGENCIES AFFECTED BY THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS AND APPROVALS FROM ALL AGENCIES AND AGENCIES AFFECTED BY THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS AND APPROVALS FROM ALL AGENCIES AND AGENCIES AFFECTED BY THE WORK.
11. EXISTING UTILITIES SHALL NOT BE INTERRUPTED UNTIL THE UTILITY PROVIDER HAS APPROVED ALTERNATIVE SERVICE FACILITIES AND HAS APPROVED THE INTERRUPTION. THE CONTRACTOR SHALL COOPERATE AND COORDINATE HIS WORK WITH JURISDICTIONAL AGENCIES AND UTILITY PROVIDERS.
12. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR PROTECTING EXISTING UTILITIES FROM DAMAGE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING UTILITIES FROM DAMAGE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING UTILITIES FROM DAMAGE.
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15. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNER AND LANDSCAPE ARCHITECT OF ANY DIFFERENCES IN LOCATION OR EXISTENCE OF EXISTING UTILITIES FROM THAT SHOWN ON THESE PLANS, OR ANY CONFLICTS WITH THE DESIGN BEFORE CONTINUING WITH WORK IN THAT AREA.
16. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND SHOWING AN OBSERVATION NOTE ON THE APPROVAL OF AN AND REVISIONS. THE CONTRACTOR SHALL SUBMIT ALL AS-BUILT RECORDS TO THE LANDSCAPE ARCHITECT PRIOR TO FINAL RECORD DRAWINGS.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL AGENCIES AFFECTED BY THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL AGENCIES AFFECTED BY THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL AGENCIES AFFECTED BY THE WORK.
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19. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, BARRICADES, SIGNS, FLAGGERS, OR OTHER DEVICES NECESSARY FOR PUBLIC SAFETY.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL AGENCIES AFFECTED BY THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL AGENCIES AFFECTED BY THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL AGENCIES AFFECTED BY THE WORK.
21. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THE EXISTENCE OF ANY AND ALL UNDERGROUND UTILITIES, WHICH MAY BE SUBJECT TO DAMAGE BY REASON OF THIS OPERATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL AGENCIES AFFECTED BY THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL AGENCIES AFFECTED BY THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL AGENCIES AFFECTED BY THE WORK.
22. ALL CONCRETE STRENGTH SHALL BE MINIMUM 3000 PSI OR GREATER.

SAN MATEO, CALIFORNIA
(UNINCORPORATED SAN MATEO COUNTY)



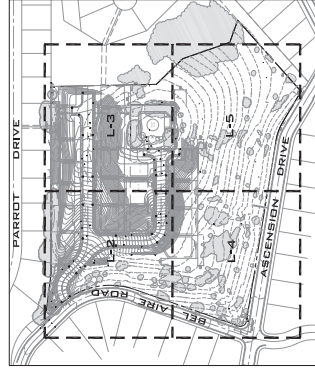
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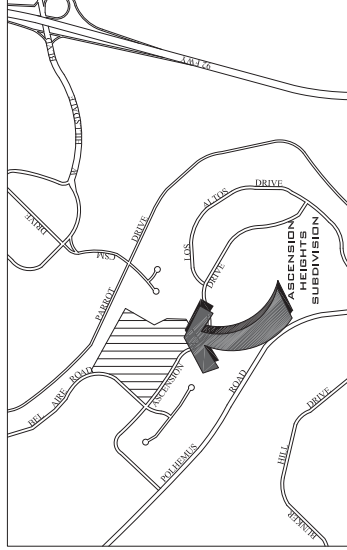
SHEET INDEX

- L-0 COVER SHEET
- L-1 40' SCALE LANDSCAPE PLAN SUMMARY
- L-2 LANDSCAPE PLAN
- L-3 LANDSCAPE PLAN
- L-4 LANDSCAPE PLAN
- L-5 LANDSCAPE PLAN
- L-6 LANDSCAPE NOTES, LEGENDS AND DETAILS



SITE KEY MAP

NOT TO SCALE



VICINITY MAP

NOT TO SCALE

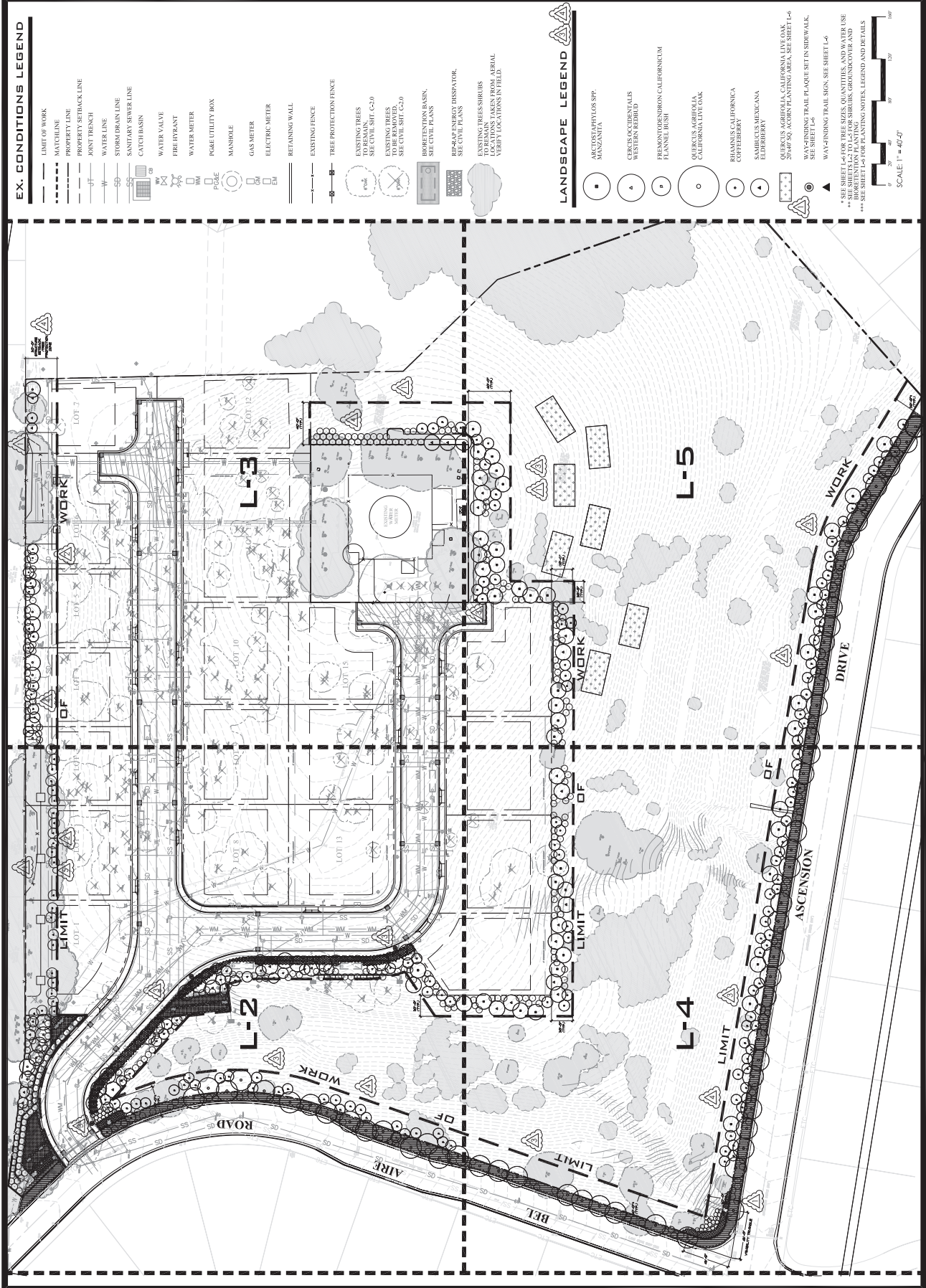
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**ASCENSION HEIGHTS
 SUBDIVISION
 SAN MATEO, CA
 (INCORPORATED SAN MATEO COUNTY)**

**40' SCALE
 LANDSCAPE
 PLAN
 SUMMARY**

DATE: 08/18
 REVISIONS:
 09/12/18
 10/18/18
 10/10/18
 10/10/18
 10/31/18
 10/31/18
 10/31/18

SCALE: 1" = 40'-0"
 NORTH
 SHEET L-1 OF 6



EX. CONDITIONS LEGEND

- LIMIT OF WORK
- - - - MATCH LINE
- - - - PROPERTY setback LINE
- - - - JOINT TRENCH
- - - - WATER LINE
- - - - STORM DRAIN LINE
- - - - SANITARY SEWER LINE
- - - - CATCH BASIN
- - - - WATER VALVE
- - - - FIRE HYDRANT
- - - - WATER METER
- - - - PAGES UTILITY BOX
- - - - MANHOLE
- - - - GAS METER
- - - - ELECTRIC METER
- - - - RETAINING WALL
- - - - EXISTING FENCE
- - - - TREE PROTECTION FENCE
- - - - EXISTING TREES
 SEE CIVIL SHT. C2-0
- - - - EXISTING TREES
 TO BE REMOVED.
 SEE CIVIL SHT. C2-0
- - - - IMPROVEMENT BASIN,
 SEE CIVIL PLANS
- - - - RIP-RAP/ENERGY DISSIPATOR,
 SEE CIVIL PLANS
- - - - EXISTING TREES SHRUBS
 TO REMAIN. 1" SIGN FROM AERIAL
 VERIFY LOCATIONS IN FIELD.

LANDSCAPE LEGEND

- ARCTOSTAPHYLOS SPP.
MANGANITA
 - CERESUS CACTUS
WESTERN REDBUD
 - FREMONTODENDRON CALIFORNICUM
FLANELL BUSH
 - QUERCUS AGRIFOLIA,
CALIFORNIA LIVE OAK
 - RHAMNUS CALIFORNICA
COFFEENUT
 - SAMOLUS MEXICANA
ELDERBERRY
 - QUERCUS AGRIFOLIA, CALIFORNIA LIVE OAK,
24" DBH. AERIAL PLANTING AREA, SEE SHEET L-4
 - WAYFINDING TRAIL PLAQUE SET IN SIDEWALK,
SEE SHEET L-4
 - WAYFINDING TRAIL SIGN, SEE SHEET L-4
- * SEE SHEET L-6 FOR TREE SIZES, QUANTITIES, AND WATER USE
 ** BORTELIANUS PLANTING SCHEDULES, GROUND COVER AND
 *** SEE SHEET L-6 FOR PLANTING NOTES, LEGEND AND DETAILS
- SCALE: 1" = 40'-0"

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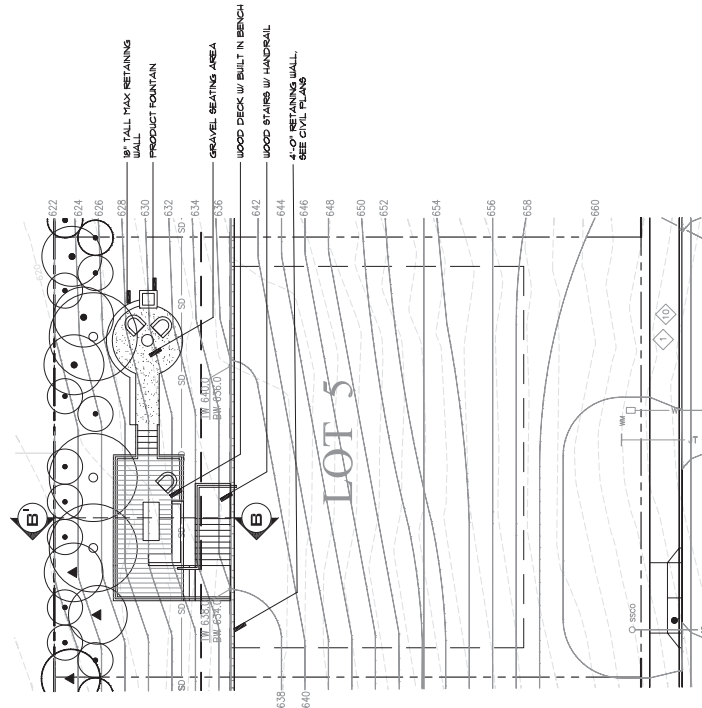
**ASCENSION HEIGHTS
 SUBDIVISION
 SAN MATEO, CA**

**PROTOTYPICAL
 REAR YARD
 LANDSCAPE
 LOTS 2 AND 5**

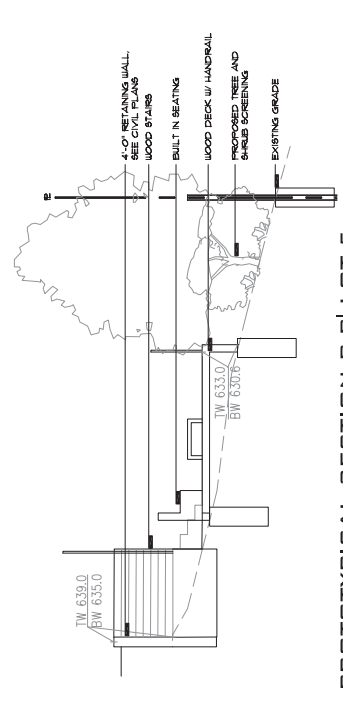
DATE: 11-05-18
 REVISIONS:
 LOT 2 PLANNING

SCALE: NORTH

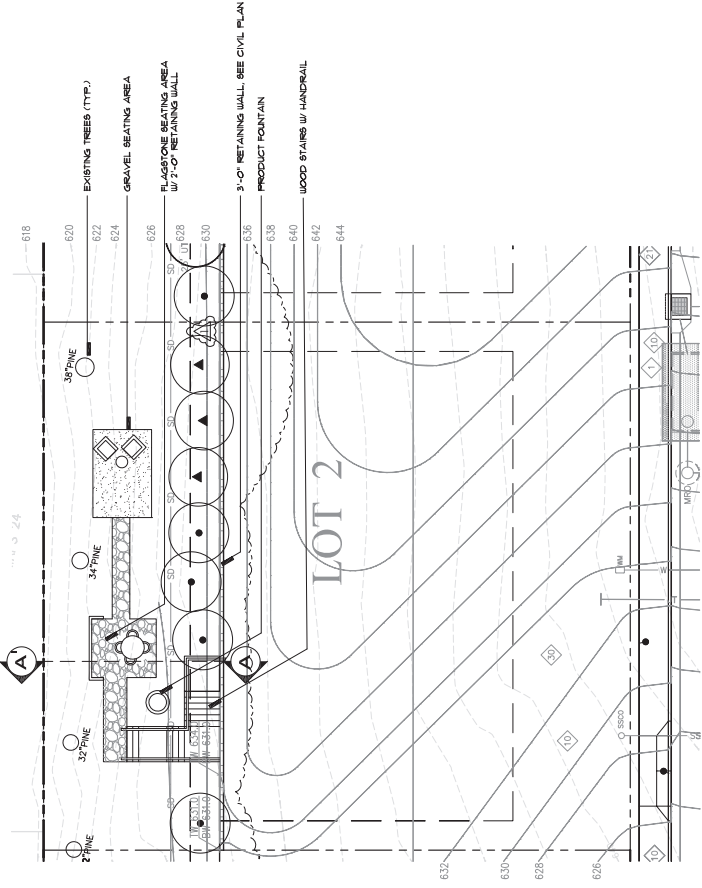
L-P
 SHEET
 OF 1



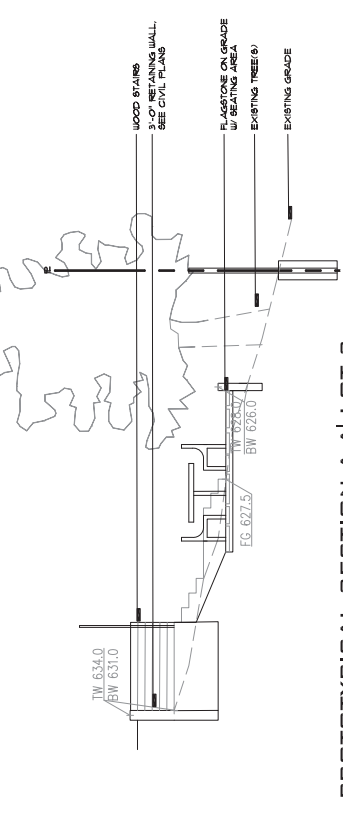
PROTOTYPICAL PLAN - LOT 5
 SCALE: 1/4" = 1'-0"



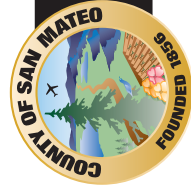
PROTOTYPICAL SECTION B-B' LOT 5
 SCALE: 1/4" = 1'-0"



PROTOTYPICAL PLAN - LOT 2
 SCALE: 1/4" = 1'-0"



PROTOTYPICAL SECTION A-A' LOT 2
 SCALE: 1/4" = 1'-0"



County of San Mateo - Planning and Building Department

ATTACHMENT D



ROBERT MOWAT
ASSOCIATES

November 5, 2018

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San Mateo County Planning Commission
c/o The County of San Mateo – Planning Department
455 County Center, Second Floor
Redwood City, CA 94063

Letter to San Mateo County Planning Commission
Re: Ascension Heights Subdivision – Landscape Plans

Dear San Mateo County Planning Commission,

This letter will serve as an introduction to the Landscape Construction Planting Plans prepared by our office Robert Mowat Associates. Our Landscape Architecture and Land Planning firm have been in existence since 1982 and have designed landscapes for over 25,000 production homes and 100 parks. The Ascension Heights project is one with unique site opportunities and constraints. We are preparing this letter to illustrate a few of the unique existing site conditions that dictated the final landscape planting design.

In late August 2018, our firm was hired to prepare Construction Planting Plans based roughly on the Preliminary Sketch "D" prepared by GLS Landscape on May 30, 2018. We received the previous sketch along with civil engineering drawings and additional written correspondence to help with our background research. Several site visits were made by our office to observe the existing site conditions. Our principal, Robert Mowat has long and deep understanding of the San Mateo built landscape, natural environment and the surrounding ecosystems. Robert Mowat ASLA was born, raised and educated in the city of San Mateo and returned to the peninsula following graduate studies to begin his practice of landscape architecture.

Following our in depth review of the existing research material, plans and correspondence, we began our Planting Plan design. Our initial Planting Plan design at 85% completion was discussed in an informal consultation on September 5, 2018 with the land owner and County staff to solicit feedback on our planting proposal. Following this informal meeting and review, several topics of conversation several landscape design issues arose that require further explanation on the preparation of our landscape design for the project site.

They are as follows: 1). Challenges and constraints for trail construction on the steep south slope; 2). Challenges and constraints for planting on the steep south slope; 3). Suggestion scenarios for landscape improvements in the 30'-0', no structures setback zone. We will explain our professional recommendations and rationale for the landscape design as currently prepared.

1. Trail Construction

On the GLS plan Preliminary Sketch "D", a diagrammatic trail is drawn on the steep south slope. Our professional experience has shown that trail construction under these specific site conditions to be extremely problematic for the following reasons.

The existing south slope in its' existing condition presents an extremely sensitive soil and geological constraint for the construction of any trail on its slope. As clearly demonstrated in the Geotechnical Report, the steep south slope has experienced numerous soil slippages and soil erosion events in its past history. The Geotech Report clearly shows a soft top layer overlaying a harder sub-pan layer which is susceptible to future movement.

The existing steep angles of 1.6 to 1 and 1.9 to 1 on the south slope are too steep for any construction crew to safely install a trail without being roped and harnessed in for their safety. The slope as currently existing is not walkable, nor climbable without climbing aides.

We believe in our professional experience, the potential for future erosion and slippage is increased based upon the installation of any cut or fill bench grading for a trail; especially one that would be required to be 6'-0' wide. In addition, the difficulty in constructing any future trail would be extremely difficult for any maintenance crew to continually repair future erosion and slippage on the trail sides with these steep conditions.

The trail as conceptualized in the Preliminary Landscape Plan by GLS Associates also has potential for conflict between future private homeowners and public trail users. We believe there will be private/public conflicts where County involvement will become necessary.

We recommend that the trail as currently designed and located by the civil engineers on plans dated 5-2-18, adjacent to the existing water tanks provides the best opportunity for success in providing public trail access on this site. This location is as shown on the civil engineering drawings and copied onto our Landscape Planting Plans. This trail location as shown by the civil engineers provides a myriad of views and topography locations that can potentially support a 6' wide trail with 10' wide lookouts. The ability to maintain a trail in this location is greatly increased. We also believe and recommend that locating the public trail adjacent to the SFWD property alleviates potential homeowner/public conflicts in the future.

2. Planting of the South Slope

As illustrated in #1 Trail Construction above, the same site conditions present themselves as potentially dangerous conditions for the future planting of landscape plant materials on the steep south slope. The Ascension Heights streetscapes/common spaces have been designed with California native plant materials per the Preliminary Sketch "D" plan by GLS. However, the installation of plant materials on the steep south slope is extremely problematic. The augering of holes to accept trees, shrubs and ground covers presents the opportunity for future soil erosion and slippage. Especially, where new soft permeable planting pits are surrounded by a dense impermeable hardpan. The ability for each hole to accumulate heavy loads of standing water (62.3 lbs/cu.ft.) will increase the likelihood of soil erosion/slippage at each plant pit. The potential for several plant pits to fill with water and slip simultaneously cannot be ruled out.

Depending on the final irrigation design, any trenching in the south slope is strongly discouraged. It is our professional experience that any irrigation excavation on steep slopes and especially those that have experienced soil slippage such as these, have great potential for further erosion and slippage. We recommend that the absence of irrigation on the extremely steep portions of the south slope is a prudent and safe recommendation.

We have prepared a recommendation of fall planting of native Oak acorns from the site be planted on the far upper reaches of the south slope. The future viability on the acorn planting of native Oaks should take place in very late fall, so that natural rainfall will germinate the acorns where they will grow and thrive as an intended natural ecosystem. Future thinning of the native Oaks may be necessary if many or all of the acorns germinate and thrive.

As discussed in #1 Trail Construction above, the same constraints for plant installation and maintenance presents itself. The maintenance of plant materials is more frequent and intensive than a trail and the likelihood for future erosion and slippage is increased significantly.

In addition to the logistical aspects of slope stability with planting, we also recommend that any future planting be respectful of the potential for wildfires. Adding fuel load upon the steep south slope is not a prudent landscape solution. While some Oaks planted via our Oak acorn planting technique recommendation will modestly add fuel, keeping the south slope to existing grasses and Oaks without adding further fuel load will help future fire fighters more quickly contain fires racing up the hillside. The south hillside presents a difficult fire fighting scenario since afternoon northwesterly winds are common and prevalent more than half the year. Our current landscape plan demonstrates that fire prevention strategies are utilized and further fuel load and landscape obstacles are avoided.

In conclusion, it is our professional experience and recommendation that planting the steep south slope sections is an imprudent and potentially dangerous solution to undertake and complete.

3. Screening on Lots 1-7

Tree and shrub (where appropriate) screening has been included on the Planting Plans for Lots 1 thru 7. The screening on these Lots have been added per the specific recommendations of the Tree Report as prepared by Arborwell (Sam Oakley–Dated 10-26-18). The screen planting trees have been located as far from the tree trunks as possible on Lots 1-3. Lots 4 and 5 have traditional tree and shrub screening layouts. Lot 6 has tree and shrub screening outside the drip zone and TPZ of nearby Cypress trees. Lot 7 has minimal additional tree screening adjacent to an existing tree.

4. Lots 2 - 6 Landscape Improvement Scenarios for Rear Yards.

The label of a “no structure zone” during a Planning Commission meeting without specific definition of “structure” per County codes does not preclude the use of any private outdoor living space by future homeowners. We believe that the most prudent recommendation is to outline possible outdoor use and improvements and the prohibited use and improvements in these rear yards on Lots 2 thru 6.

The current structure setback lines for structures and existing retaining wall create site conditions where no private rear space is available for the outdoor use and enjoyment entitled to all single family homeowners in the neighborhood. With the lacking of a formal County definition of “landscape structure” and the adoption of the more restrictive 30'-0" No

Structure setback zone, the possibility of future homeowners installing landscape improvements escapes guidance.

We recommend that the following verbiage be adopted into the CCR's as direction for future landscape improvements should they possibly be installed in the rear yards on Lots 2 thru 6.

Landscape Improvement Inclusions:

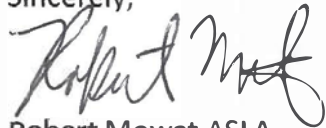
1. Planting and Irrigation. Irrigation installations to follow tree report guidelines.
2. On-grade flagstone, concrete patios and/or wood decks.
3. Landscape elements no larger than 5' wide x 5' tall. I.e. fountains, pilasters, seating, decorative landscape elements.
4. Movable and non attached/anchored landscape furniture.
5. 12 Volt lighting.

Landscape Improvement Exclusions:

1. Storage sheds, any covered building, arbors, trellises (greater than 3'-0" wide), and
2. Any structure as defined by San Mateo County Codes as a "Structure".
3. Retaining walls greater than 24" tall.
4. Any and all landscape improvements that will affect any existing Cypress tree root greater than 2" in diameter.
5. Any attachment to an existing Cypress tree.

Thank you for your interest and efforts on this project and its benefits to the neighborhood and County.

Sincerely,



Robert Mowat ASLA
Registered LA #2258

RJM/mtf

Cc: Mr. Dennis Thomas-San Mateo Real Estate



County of San Mateo - Planning and Building Department

ATTACHMENT E

Memorandum

To: Dennis Thomas
President
San Mateo Real Estate, Inc.
1777 Borel Place, Suite 330
San Mateo, California 94402

From: Sam Oakley
Master Arborist WE-9474B
Consulting Arborist #556
925.518.2028
samoakley@arborwell.com

Subject: Landscape Plan Review for Neighboring Tree Impacts,
Ascension Heights Subdivision, San Mateo

Date: October 26, 2018

Introduction

Arborwell was asked to review the *Ascension Heights Landscape Plan* dated September 18, 2018. Specifically, this review is to provide direction for the protection of three (3) *Hesperocyparis macrocarpa* (Monterey Cypress) growing along the rear property line at the project contiguous with 1538 Parrott Drive in unincorporated County of San Mateo, and to prepare a *Tree Protection Plan* to mitigate any potential impacts to the subject trees. An arborist report was prepared by Donald Cox, dated January 28, 2015 regarding the subject trees. We were asked to assess the impacts of proposed planting to tree adjacent to Lot 1, and the proposed subdivision infrastructure contained in the civil plans on the neighbor's trees on neighboring lots as well as for other trees to be preserved located on the property.

Plan Review

The plan shows the Cypress trees are growing along the west-side of the northern property line on the 1538 Parrott Drive property. The trees are located behind Lot 6, with the dripline of the eastern-most tree partially extending behind Lot 7. Lots 6 and 7 steeply slope down towards the subject trees. The eastern-most tree is growing approximately 3-4 feet from the property line and the other two are growing on the property line. The plan shows the limit of work set back 30-feet from the property line, and a tree protection fence at 10-feet from the property line. This 10-foot tree protection zone (TPZ) is planned for mulch only with no planting of any vegetation. Outside of the 10-foot TPZ and up to the structural setback, mulch is proposed along with native ground vegetation.

The back of Lots 1, 2, and 3 have trees growing on the project-side of the property line. The plan shows a tree protection fence approximately 15-feet from the property line. It also shows numerous planting just outside of the tree's protection zone.

Cox Report Review

The Cox Report recommends an overly large 50-foot radius TPZ extending south from the trunks. Other recommendations from the report are standard best practices.

On-Site Review

I visited the Ascension Heights Subdivision property on September 28, 2018 to visually assess the subject trees. The existing fence was approximately 20-feet from the trunks of the trees. At no time did I enter the 1538 Parrott Drive property. Because I was not able to physically measure the trees, I approximated the diameters of the subject trees in feet.

The two western-most trees were approximately 4-feet in diameter at 4.5 feet above grade, which is considered the standard height (DSH) of trunk diameter measurement. The eastern-most tree was 6-feet DSH. The canopy of the trees was approximately 40- to 50-feet.

The subject trees were multi-stemmed with very large scaffolding limbs. The branches were overarched on the Ascension Heights property. The trees did not appear to be well-maintained, indicative of extensive deadwood throughout their crowns. The subject trees had piles of yard debris and a deck structure within their dripline. The eastern-most tree showed evidence of a massive branch failure that has left the tree unbalanced towards the Ascension Heights property. The two western-most trees appeared to be structurally sound; however, Cypress at this stage of maturity are predisposed to large branch failure as well as crown failure.

Discussion

The subject trees' roots are not likely found in abundance on the uphill slope due to the trees being located in a basin where water would naturally accumulate. The landscape plan details for a 10-foot TPZ. An acceptable TPZ for these trees is a minimum of 25% of the total canopy area. 25% is the maximum allowable root loss a tree can sustain without compromising its long-term health and stability. Because the radius of the canopies is approximately 40- to 50-feet, 50% of the total area would yield a radius of 28- to 35-feet, which would be 25% on the project-side of the root area. These numbers are conservative as only one side of the tree has the potential to be affected by construction activities which would be, arguably, 25% of the total area. However, a TPZ less than the above distances may have the potential for the critical root structure to be compromised and would result in a loss of stability. This area of TPZ is for construction only.

I do not think the Cox Report's recommendation of a 50-foot TPZ radius is reasonable given that there are not likely uphill roots and that the 50-foot radius would unnecessarily diminish the lot size of Lot 6. The 30-foot TPZ that we recommend accommodates both the needs of the project as well as the critical root area of the trees.

The 30-foot setback is also our recommended TPZ for trees along the perimeter of Lots 1, 2, & 3 for the construction-period only.

The existing fence along the north property line is not likely the “true” property line and, as such, is encroaching on the Ascension Heights property. I would recommend the “true” property line be physically staked out, and the 30-foot zone—the structural setback—to be considered the TPZ and install fencing at 30 feet from the surveyed property line.

No planting should be installed within the area beneath the driplines of the trees for Lots 1, 2, 3 6 & 7 as the plantings will introduce unneeded competition. However, the screen trees are acceptable. Planting of native ground vegetation may be placed anywhere outside of the dripline of any tree designated to be preserved, whether on or off the property, and within this 30-foot structural setback/tree protection zone.

Tree Protection Plan

This document does not replace any existing Tree Protection Plan, but rather, is a specific mitigation to potential disturbances to the subject trees. All work is to be performed by a qualified tree worker approved by the Project Arborist.

Tree Protection Zone

Fencing for the TPZ for the subject trees are to be set at the 30-foot structural setback and encompass the driplines of the trees at the very minimum.

Fencing is to be mounted on two inch diameter galvanized iron posts, driven into the ground to a depth of at least two (2) feet at no more than ten (10) foot spacing. A closeable 36-inch entry section for servicing the TPZ shall be provided. The fencing is to be wrapped with brightly colored orange fencing, which will provide a visual reminder to workers that the trees are protected.

Final Improvements: If the fencing must be relocated for final improvements, the posts may be supported by appropriate stanchions as directed by the Project Arborist (PA). This area should be considered a modified TPZ. Any activity within a modified TPZ must involve the PA’s prior approval.

Duration of Tree Protection Fencing

Tree fencing shall be erected prior to demolition, grading or construction and remain in place until final inspection. Tree Protection Fencing shall be field verified by the PA before any work can begin, including grubbing, demolition, and grading. TPZ cannot be moved without the prior approval of the PA. TPZs are to remain throughout the entirety of the project.

“Warning” Signage

A warning sign a minimum of 8.5x11-inches shall be prominently displayed on each fence. The sign shall clearly state:

Warning:

Tree Protection Zone

This fencing shall not be removed without prior approval of the Project Arborist.
(List Contact Arborist's Firm, Name, and Phone Number)

Once installed, each tree will then be protected for the duration of the project. All work that occurs in the dripline falls under the category of the TPZ. This means that work that is performed within this zone will require direct involvement of the PA. Improvements or activities such as paving, utility, and irrigation trenching and other ancillary activities shall occur outside the TPZ, unless authorized by the PA. Unless otherwise specified, the protective fencing shall serve as the TPZ boundaries. At no time shall TPZ be encroached without the directive of the PA.

Activities prohibited within the TPZ include:

- Storage or parking vehicles, building materials, refuse, excavated spoils or dumping of poisonous materials on or around trees and roots. Poisonous materials include, but are not limited to, paint, petroleum products, concrete or stucco mix, dirty water or any other material which may be deleterious to tree health.
- The use of tree trunks as a winch support, anchorage, as a temporary power pole, sign posts or other similar function.
- Cutting of tree roots by utility trenching, foundation digging, placement of curbs and trenches and other miscellaneous excavation without prior approval of the PA.
- Soil disturbance or grade/drainage changes
- Materials must not be stored, stockpiled, dumped, or buried inside the dripline of trees.
- Excavated soil must not be piled or dumped, even temporarily, inside the TPZ of protected trees.

Activities required within the TPZ include:

- Mulching: During construction, wood chips shall be spread within the TPZ to a six (6) inch depth, leaving the trunk clear of mulch to help inadvertent compaction and moisture loss from occurring. The mulch may be removed if improvements or other landscaping is required. Mulching may be applied at a depth of three (3) inches prior to construction under trees where there is no landscaping or paving (landscaping shall not be installed underneath the subject tree).

- Irrigation, aeration, or other beneficial practices that have been specifically approved for use within the TPZ.

Irrigation Program

Deep-root irrigate during the project.

1. Irrigation is to begin immediately and up to when construction is complete.
2. An application of growth regulator (paclobutryzol) prior to construction activities will aid in the development of fine-root growth and will help counter the effects of any root damage. This should be applied immediately for all trees that are to be protected in place. This is to be performed by a certified tree care specialist.
3. In addition, all trees are to have roots inoculated with endo/ectomycorrhizal fungal inoculum.
4. Irrigate a minimum of ten (10) gallons for each inch of trunk diameter once every month. A soaker hose or a drip line is preferred for this purpose.
5. Any new irrigation for existing trees must not be designed to strike the trunks of trees, because of potential high risk of disease infection. Bubbler irrigation is preferred.
6. If any irrigation lines, drain lines, sewer lines, or any other underground features inside the existing dripline of protected trees that are to be abandoned, they should be cut off approximately at soil grade and left in the ground.
7. Where necessary, irrigation should be installed using at least two bubblers.
8. The foliage of tree shall be kept dust-free with monthly washings, or more frequent as determined by the SPA.

Damage to Trees - Reporting

Any damage or injury to the subject trees shall be reported within six (6) hours to the PA and job superintendent so that mitigation can take place. All mechanical or chemical injury to branches, trunk or to roots over two (2) inches in diameter shall be reported. In the event of injury, the following mitigation and damage control measures shall apply and implemented by a Certified Arborist:

- a. Root injury: If trenches are cut and tree roots two (2) inches or larger are encountered they must be cleanly cut. The end of the root shall be covered with either a plastic bag and secured with tape or rubber band. All exposed root areas within the TPZ shall be backfilled or covered within one (1) hour. Exposed roots may be kept from

drying out by temporarily covering the roots and draping layered burlap or carpeting over the upper three (3) feet of trench walls. The materials must be kept wet until backfilled to reduce evaporation from the trench walls. All the above activities shall be performed by a Certified Arborist.

- b. Bark or trunk wounding: Current bark tracing and treatment methods shall be performed by a Certified Arborist within two (2) days.
- c. Scaffold branch or leaf canopy injury: A Certified Arborist will remove broken or torn branches back to an appropriate branch capable of resuming terminal growth within five (5) days. If leaves are heat scorched from equipment exhaust pipes, consult the PA within six (6) hours.

A. Trenching, Excavation and Equipment Use

Excavation or boring activity within the TPZ is restricted to the following activities, conditions and requirements if approved by the PA:

1. Notification. Contractor shall notify the SPA a minimum of twenty-four (24) hours in advance of the activity in the TPZ.
2. Root Severance. Roots that are encountered shall be cut to sound wood and repaired. No roots of two (20-inch diameter and larger shall be cut without the prior approval of the SPA. Approval is based on the distance of the root from the tree trunk and whether or not there are sufficient roots in the area to compensate for their removal.
3. Excavation. Any approved excavation, demolition or extraction of material shall be performed with equipment sitting outside the TPZ. Methods permitted are by hand digging, hydraulic or pneumatic air excavation technology. Avoid excavation within the TPZ during hot, dry weather.
 - a. If excavation or trenching for drainage, utilities, irrigation lines, etc., it is the duty of the contractor to tunnel under any roots two (2) inches in diameter and greater.
 - b. Prior to excavation for foundation/footings/walls, grading or trenching within the TPZ, roots shall first be severed cleanly one (1) foot outside the TPZ and to the depth of the future excavation. The trench must then be hand dug and roots pruned with a saw or other approved root pruning equipment by the SPA.
4. Heavy Equipment. Use of backhoes, steel tread tractors or any heavy vehicles within the TPZ is prohibited

B. Root Severance

Cutting and removal of roots smaller than two (2) inches in diameter shall be done by chain saw or hand saw to provide a flat and smooth cut and cause the least damage possible to the root and tree's health. Cutting roots by means of tractor-type equipment or other than chain saws and hand saws is prohibited.

Proper pruning technique shall encourage callusing of the roots. Root cutting and removal shall not exceed thirty-five (35) percent of total root surface.

If any roots over two (2) inches in diameter are severed during any excavation, the following procedure shall be followed:

1. The roots shall be shaded by immediately covering the entire trench with plywood, or by covering the sides of the trench with burlap sheeting that is kept moist by watering twice per day.
2. When ready to backfill, each root shall be severed cleanly with a handsaw. Where practical, they should be cut back to a side root. Immediately, a plastic bag shall be placed over the fresh cut, and secured with a rubber band or electrical tape. Shading should immediately be placed until backfilling occurs.
3. Plastic bags shall be removed prior to backfilling.
4. Backfill shall be clean, native material free of debris, gravel or wood chips.

If roots three (3) inches in diameter, or larger, are encountered during excavation, Contractor shall contact the SPA immediately and request a field inspection, and obtain instruction as to how the roots should be treated. No roots three (3) inches in diameter, or larger, shall be cut and removed without prior approval from the SPA. Excavation will be performed with an airspade when greater than 4" of soil is required to be removed from a dripline. Roots will be pruned per recommendations by the SPA.

Conclusion

It is the nature of trees exposed to construction that some do not survive, and mortality cannot be predicted. In the event that due care is exercised, all of the trees designated for preservation on the project are expected to remain healthy and alive.