



AUTUMN BROOK SUBDIVISION

INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

SEPTEMBER 2015

PREPARED FOR:

City of Concord Civic Center
1950 Parkside Drive, MS/07
Concord, CA 94519
(925) 671-3219



PREPARED BY:

Analytical Environmental Services
1801 7th Street, Suite 100
Sacramento, CA 95811
(916) 447-3479
www.analyticalcorp.com



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SECTION 1.0 – INTRODUCTION

The proposed Autumn Brook Subdivision Project is a project as defined under the California Environmental Quality Act (CEQA). This Initial Study (IS) was prepared by Analytical Environmental Services for the City of Concord (City), Community and Economic Development Department, Planning Division. This IS was prepared pursuant to California Environmental Quality Act of 1970, Public Resources Code § 21000, et seq., as amended and implementing State CEQA Guidelines, Title 14, Chapter 3 of the California Code of Regulations (collectively, CEQA).

- 1. Project Title:** Autumn Brook Subdivision
 - 2. Lead Agency Name and Address:** City of Concord
1950 Parkside Drive
Concord, CA 94519
 - 3. Contact Person and Phone Number:** Ryan Lenhardt, Senior Planner
(925) 671-3162
 - 4. Project Location:** 1890 Risdon Road, Concord, CA 94518
 - 5. Project Sponsor's/Applicant's Name and Address:** Zheng Tan
1233 Pine Creek Way, Unit A
Concord, CA 94520-3642
 - 6. General Plan Land Use Designation:** LDR (Low Density Residential)
 - 7. Zoning:** RS-7 (Residential Single-Family, 7,000 square foot minimum lot size)
 - 8. Surrounding Land Uses and Setting:** Residential and urban development and supporting infrastructure
 - 9. Description of Project:** Development of eight lots ranging in size from 3,653 to 6,779 net square feet at the subject site and the construction of eight Craftsman-style single-family detached homes range from 2,612 to 3,043 square feet in size.
 - 10. Project Entitlements:** Approval of Tentative Map Subdivision, Re-Zoning, Design Review, Stormwater Control Plan, Tree Removal, and Minor Exception.
- Date Initial Study Completed:** September 2015

1.1 PURPOSE OF STUDY

This IS examines the potential effects on the environment of the City of Concord's (City's) potential approval of a Tentative Map Subdivision, Re-Zoning, Design Review, Stormwater Control Plan, Tree Removal, and Minor Exception for development of 8 residential lots ranging in size from 3,653 to 6,779 net square feet at 1890 Risdon Road (Proposed Project). This IS was prepared pursuant to CEQA.

This IS has identified potentially significant impacts and mitigation measures, which, when incorporated into the project, will reduce these impacts to less than significant levels. Therefore, this IS would support a Mitigated Negative Declaration under CEQA Guidelines Section 15070.

This IS is organized into the following sections:

Section 1.0 - Introduction: Provides an overview of the Proposed Project, location, sponsor, when the IS was completed, environmental resources potentially affected by the Proposed Project, and the significance determination of the Proposed Project on the environment by the lead agency.

Section 2.0 - Project Description: Includes project a detailed description of the Proposed Project and background information.

Section 3.0 - Environmental Checklist and Discussion: Contains the Environmental Checklist form together with a discussion of the environmental issues. Mitigation measures, if necessary, are noted, following each impact discussion. The numbering sequence for each of the mitigation measures is related to their associated topical sections.

Section 4.0 - List of Preparers

Section 5.0 - Bibliography

1.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below could be potentially affected by the Proposed Project, involving at least one impact requiring mitigation to bring it to a less-than-significant level. Impacts to these resources are evaluated using the checklist included in **Section 3.0**. The Proposed Project was determined to have a less-than-significant impact or no impact, even without mitigation, on unchecked resource areas.

- | | |
|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Land Use and Planning |
| <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Air Quality | <input type="checkbox"/> Noise |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Population and Housing |
| <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Public Services |
| <input checked="" type="checkbox"/> Geology and Soils | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Transportation and Circulation |
| <input type="checkbox"/> Hazards and Hazardous Materials | <input type="checkbox"/> Utilities and Service Systems |
| <input type="checkbox"/> Hydrology and Water Quality | <input type="checkbox"/> Mandatory Findings of Significance |

1.3 SIGNIFICANCE DETERMINATION

On the basis of the environmental evaluation presented in **Section 3.0**:

- I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project design and project-specific mitigation measures described in **Section 3.0** have been agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION is recommended to be adopted.
- I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Signature

Date

Printed Name

City of Concord

Lead Agency

SECTION 2.0 – PROJECT DESCRIPTION

2.1 LOCATION AND EXISTING SETTING

The project site is located within the limits of the City of Concord (City) in Contra Costa County (**Figure 1**). The 2.02-acre project site (Assessor Parcel Number [APN] 147-350-003) is located at 1890 Risdon Road in the southern part of the City, approximately 2 miles east of Highway 680 (**Figure 2**). The project site is bordered on the north by Risdon Road and on all other sides by low density residential development. Holiday Court and David Avenue are west and south of the project site. Approximately 240 feet south of the project site, Bay Area Rapid Transit's (BART's) Pittsburg/Bay Point line runs northeast to southwest, with the nearest crossing located at Oak Grove Road approximately 0.25 miles to the southeast of the project site. The project site is currently vacant with the exception of an unoccupied single-family residence at the northern end of the property. A flood control channel and associated easement maintained by the Contra Costa County Flood Control District (CCCFCD) traverses the eastern portion of the project site. Approximately 42 trees have been inventoried on the project site, including 21 Valley Oaks (**Appendix A**). The tree inventory is further discussed in **Section 3.0** under **Biological Resources**.

2.1.1 ZONING

The project site is zoned RS-7. The Residential Single-Family (RS) zoning district is applied to areas of the City designated for single-family residential uses in neighborhoods at densities of 2.5 to 10 units per acre. The specific allowable density for each parcel is identified by the number following the zoning identifier and corresponds to the minimum lot size. Accordingly, the project site is zoned for single-family residential units with a minimum lot size of 7,000 square feet. The RS district is consistent with and implements the low density residential (LDR) land use designation of the Concord 2030 General Plan (General Plan). Under the General Plan, the project site is designated for LDR land use.

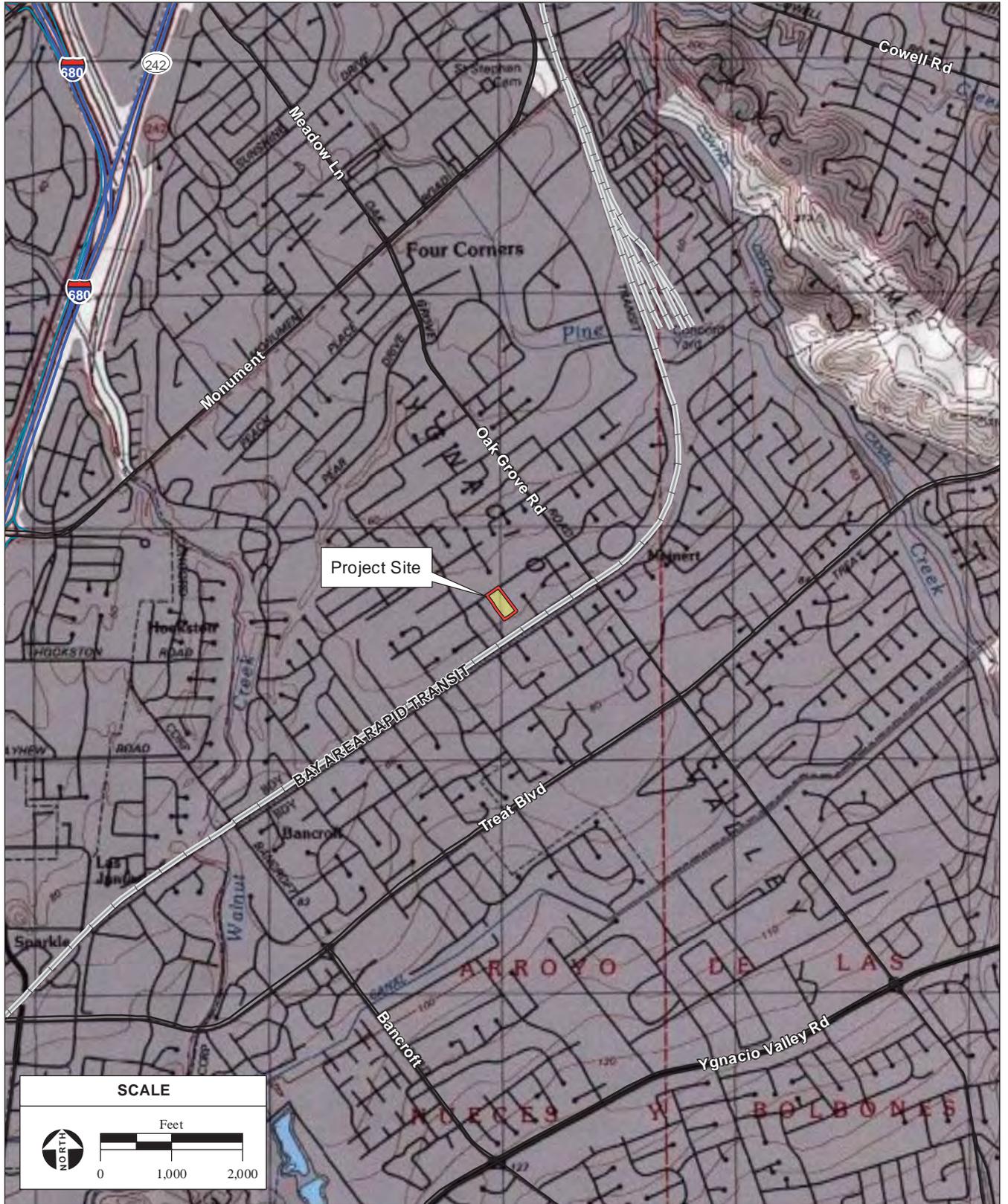
2.1.2 EXISTING LAND USES

Currently, the project site consists of mainly open space with an unoccupied 1952 residence that is in disrepair, a small storage shed which is not in use, and a small fence around the residence (**Figure 3**). A 72-foot CCCFCD easement traverses the eastern edge of the project site and includes an excavated flood control channel and a 22-foot wide unpaved service road along the western bank of the canal.

A non-exclusive 20-foot roadway and utility easement centered on the southwest property line was created in 1950 to provide access to large parcels in the area. A 10 foot portion of the easement is on the project site and a 10 foot portion is on the adjacent neighbors' properties. Since that time, the land in the area has been subdivided and David Avenue, BART, Minert Road, Holiday Court, and Risdon Road were improved with public utilities. These streets surrounding the project site provide public access and public utilities to the project site and all neighboring lots. The applicant has informed the City that the easement is no longer necessary to provide access to the neighborhood, that the easement is no longer in use, and that two of



Figure 1
Regional Location



SOURCE: "Walnut Creek, CA" USGS 7.5 Minute Topographic Quadrangle, TIN, R1W, Unsectioned Area of Walnut Creek, Mt. Diablo Baseline & Meridian; ESRI Data, 2015; AES, 4/24/2015

City of Concord Autumn Brook Initial Study / 215507 ■

Figure 2
Site and Vicinity



SOURCE: DigitalGlobe aerial photograph, 6/9/2014; AES, 5/7/2015

City of Concord Autumn Brook Initial Study / 215507 ■

Figure 3
Aerial Photograph

the adjacent neighbors have built a home addition and a swimming pool over their side of this easement. Accordingly, the applicant intends to pursue a quit claim of quiet title action to abandon the easement.

2.1.3 SURROUNDING LAND USES

The project site is surrounded by residential development and associated infrastructure. All surrounding residences are single-family homes located within a subdivision. There are seven homes to the southwest of the project site, two homes to the south, two homes to the southeast, three homes to the northeast, and three homes to the north (across Risdon Road). The nearest school is Oak Grove Middle School, approximately 680 feet southwest of the project site, across the BART tracks. The nearest public gathering place is Fair Oaks Church on Risdon Road approximately 225 feet east of the project site. The nearest public park is Ygnacio Valley Park, approximately 0.22 miles east of the project site, adjacent to Oak Grove Road.

2.1.4 TRANSPORTATION AND CIRCULATION

The project site is bounded on the north by a narrowed portion of Risdon Road. Heading west away from Ygnacio Valley Park, Risdon Road abruptly narrows as the sidewalk ends just before the project site on the northern side of the roadway. No sidewalks or street parking is provided on the southern side of the roadway for approximately 720 feet. Approximately 240 feet west of the intersection with Woodmoor Drive, Risdon Road widens, providing a sidewalk and street parking on the southern side of the roadway. Risdon Road then connects to Oak Grove Road approximately 0.20 miles to the east of the project site. Risdon Road connects with multiple residential streets southward, such as Holiday Court and Woodmoor Drive, before ending approximately 0.3 miles west of the project site at the intersection with Estrella Court. Regional access to the project site is provided via Monument Boulevard to the north and Treat Boulevard to the south of the project site. Both provide access from State Route (SR) 242/Interstate 680 to Oak Grove Avenue, hence Risdon Road and the project site. The Pittsburg/Bay Point BART line provides access from Pittsburg in the East Bay to Millbrae in the southern portion of the San Francisco Peninsula in San Mateo County. Additional discussion of the surrounding transportation network is provided in **Section 3.0** under ***Transportation and Circulation***.

2.1.5 DRAINAGE

Excluding the existing CCCFCD flood control channel, there are no off-site areas draining onto the project site. The site drains by overland flow either to the existing flood control canal or to the existing drainage ditch along the southeast side of Risdon Road. The existing impervious area on the site, which consists of an existing residential structure, gazebo, fence, and shed, covers an area of approximately 2,700 square feet and is shown on **Figure 3**.

2.1.6 INFRASTRUCTURE/UTILITIES

Existing utility lines to the unoccupied residence are located on the north end of the project site approximately 20 feet from the entrance to the property. A 50-foot long driveway provides access to the existing home from Risdon Road. A well is located approximately 90 feet south of the existing residence, approximately 40 feet east of the western project boundary. Along the eastern edge of the project site, a 72-foot CCCFCD easement traverses the length of the project

site and includes the excavated channel and a 22-foot wide unpaved service road adjoining the western bank of the canal. The flood channel is discussed in more detail in **Section 3.9.1** under **Flooding**. Along the western edge of the project site, a 10-foot road and utility easement traverses the length of the project site. Potable water is supplied by the Contra Costa Water District (CCWD), Water Zone 2. Sewerage conveyance is provided by the City Public Works Department, with treatment provided at the Central Contra Costa Sanitary District Treatment Plant in Martinez, California. Gas and electrical services are provided by Pacific Gas and Electric (PG&E). Electrical and telephone are provided via overhead lines.

2.2 PROJECT DESCRIPTION

The applicant proposes to subdivide the 2.02-acre project site creating 8 lots ranging in size from 3,653 to 6,779 net square feet. The subdivided lots would support development of eight Craftsman-style single-family detached homes ranging from 2,612 to 3,043 square feet in size. A rendition of the project is provided as **Figure 4**. Six different floor plans are proposed, each of which includes a two-car garage with each floor plan having different elevations. All proposed homes would be two-story, with the tallest floor plan option at approximately 29 feet in height. Approximately 0.87 acres of the project site would be developed with impervious surfaces (homes, driveways, private roadway, and sidewalk), while the remaining 1.15 acres would be kept pervious and include landscaping, a bioswale area, and the existing easement for the county to access the flood control channel; depicted in the proposed site plan (**Figure 5**). Because the project site is zoned RS-7, which requires a minimum 7,000-square-foot lot area, the project applicant is seeking the approval of a Tentative Map Subdivision, Re-Zoning, Design Review, Stormwater Control Plan, Tree Removal, and Minor Exception. The Proposed Project is consistent with the vision for growth and development detailed in the 2030 Contra Costa County General Plan.

2.2.1 LAND USE

The Applicant is pursuing approval of the proposed small lot subdivision, which is within the densities prescribed by the 2030 General Plan, but at a density higher than currently allowed under the existing RS-7 zoning designations. The Applicant is therefore requesting a zoning change from RS-7 to Residential Low Density (RL). The RL District is applied to areas of the City appropriate for low density residential uses in a neighborhood with predominately detached single-family dwellings, but allows a diversity of compatible housing types and lot sizes from larger lot single-family dwellings to cottages, cluster, courtyard, and patio homes, and duplexes, at densities of 2.5 to 10 units per net acre. The RL District is consistent with and implements the Low Density Residential (LDR) land use designation of the General Plan. The Applicant would be required to adhere to the following RL development standards found in Table 18.30.040 of the City of Concord Development Code (codified as Chapter 18 of the City of Concord Municipal Code and referred to herein as the Development Code):

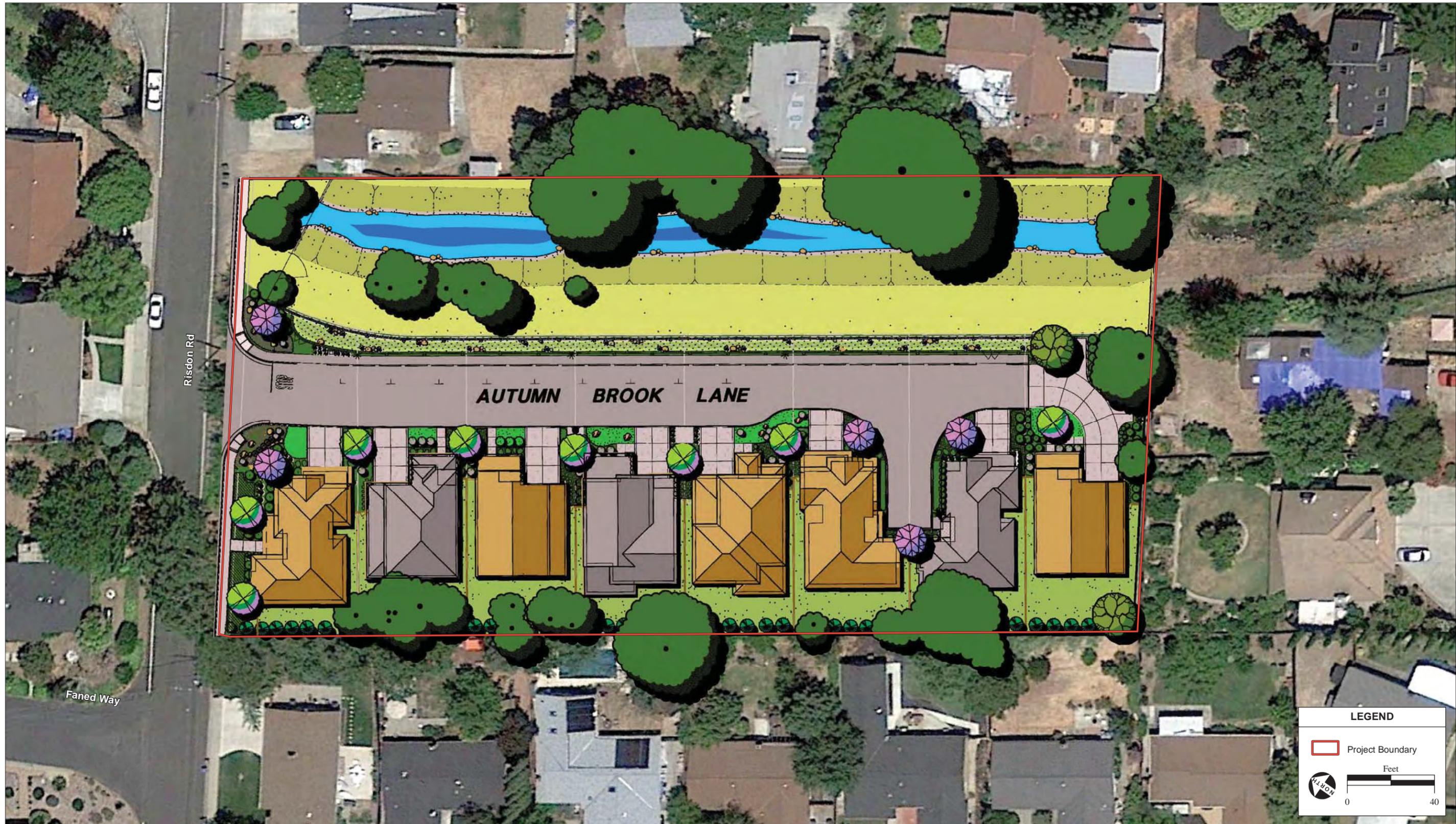
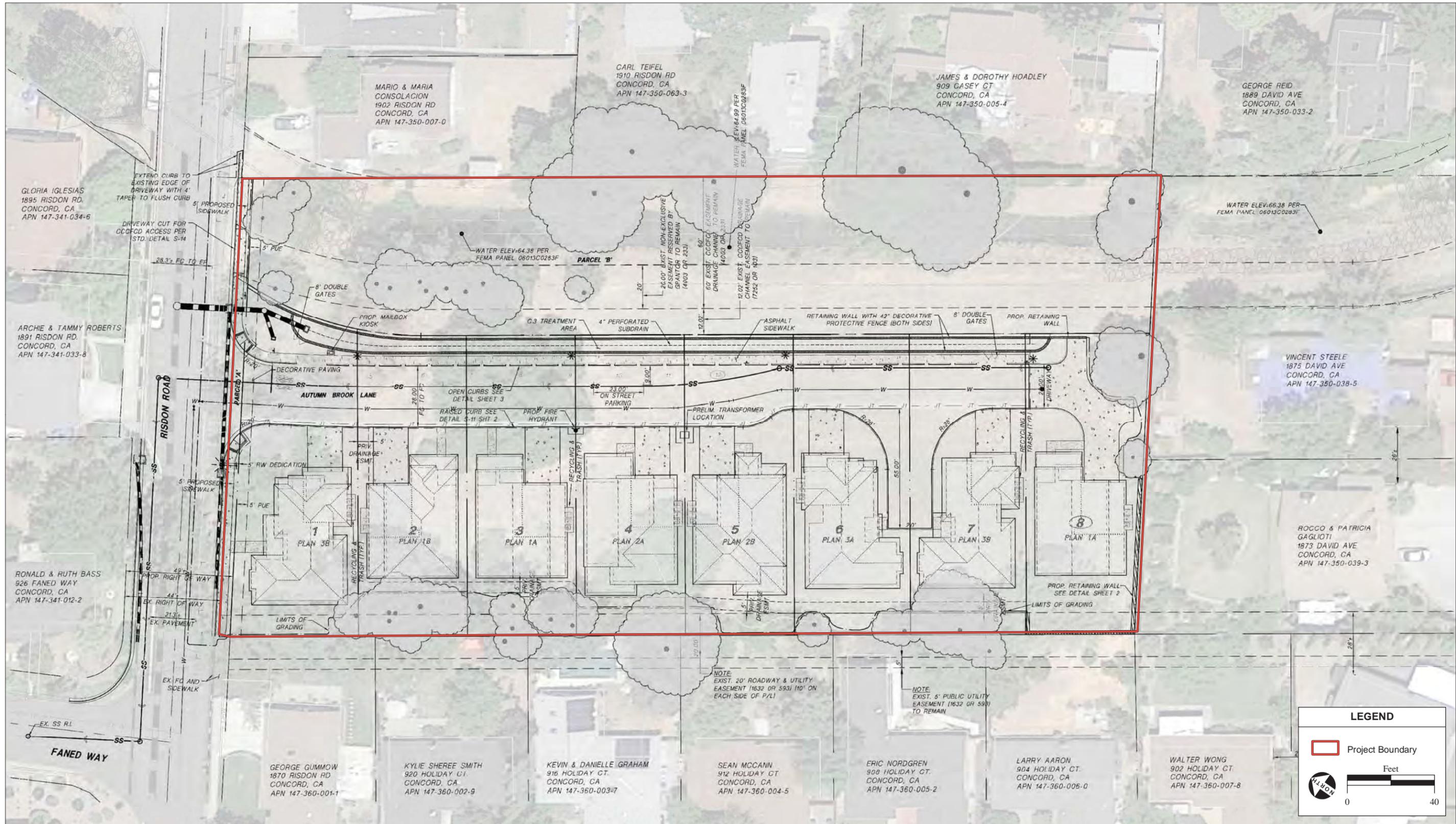


Figure 4
Proposed Rendition



SOURCE: P/A Design Resources, Inc., 2014; DigitalGlobe aerial photograph, 6/9/2014; AES, 4/24/2015

Figure 5
Proposed Site Plan

TABLE 1
DEVELOPMENT STANDARDS

Standards	RL Requirements	Additional Standards
Density (du/net acre) minimum/maximum	2.5 – 10	
Lot Area (square feet) minimum	1,920	
Lot Width (feet) minimum	24	
Lot Depth (feet) minimum	80	
Lot Coverage (percent) maximum	50	
Building Height maximum	2.5 stories or max. 30 ft.	Additional height may be approved with a use permit.
Setbacks (feet) ⁽²⁾	The area between the street improvements and street setback line shall be landscaped in compliance with Chapter 18.165 CDC (Landscaping).	
Front, minimum	5	Additional setback standards may apply in small lot subdivisions pursuant to Chapter 18.155 CDC.
Interior Side, minimum	5	
Corner Side, minimum	10	
Rear, minimum	5	
Garage, Street Access	20	Note: Minimum five feet behind primary building facade.
Garage, Alley Access, minimum	4	
Open space/unit (square feet) minimum	200 ⁽¹⁾	See CDC 18.150.100, Open space and recreational facilities for residential developments, and Chapter 18.155 CDC for small lot subdivisions
<p>(1) Additional requirements may apply pursuant to Chapter 18.155 CDC (Standards for Small Lot and Medium Density Development) and Division V of this title (Standards for Specific Uses).</p> <p>(2) Unless otherwise approved through a planned unit development (PUD). [Ord. 12-4. DC 2012 § 122-80].</p>		

Under a conventional rezoning application, the development proposal would be reviewed by the Planning Commission at a public hearing for recommendation to the City Council at a public hearing. The Planning Commission would be a recommending body only, and the City Council would be the decision-making body. In addition, the rezoning may only be approved if all of the following applicable findings are made:

1. The proposed amendment is consistent with the general plan;
2. The proposed amendment would not be detrimental to the public interest, health, safety, convenience, or welfare of the city; and
3. Zoning map amendments shall also find that the affected site is physically suitable, including absence of physical constraints, access, compatibility with adjoining land uses, and provision of utilities, for the requested zoning designation and proposed or anticipated uses and/or development.

ADDITIONAL ACTIONS

The applicant must obtain the Planning Commission's recommendation and approval of each of the applications by the City Council. The Applicant received Design Review recommendation of approval on November 20, 2014 with a vote of 5-0 with the following conditions:

1. Final landscape plan to include wall detail within site visibility triangle, street sign detail, street trees along Risdon Road; and 36-inch box size for at least 50 percent of the proposed replacement trees; and
2. Home elevations to reflect additional gable and centered window on the left elevation of Plan 3A.

For tentative subdivision maps, the Planning Commission is required to approve, conditionally approve, or deny the tentative subdivision map within 50 days after certification of an environmental impact report, adoption of a negative declaration, or a determination by the city that the project is exempt from the requirements of CEQA. In accordance with the Municipal Code (17.15.060), a tentative subdivision map may be approved or conditionally approved only if the Planning Commission finds that the proposed tentative subdivision map, together with the provisions for its design and improvement, is consistent with the General Plan, any applicable specific plan, the Zoning Ordinance, and other applicable provisions of the Municipal Code.

EASEMENTS

The existing 72-foot CCCFCD easement along the eastern portion of the project site would remain under the Proposed Project. A buffer feature discussed below under **Drainage** has been included in the project site plans to ensure development does not conflict with the use of the easement.

It is in the intent of the applicant to pursue a quit claim or quiet title action to abandon the existing non-exclusive 20-foot roadway and utility easement located along the eastern property

boundary. The easement is no longer in use and two of the adjacent neighbors have built a home addition and a swimming pool over this easement on their side.

2.2.2 SITE ACCESS/CIRCULATION

Risdon Road would be widened and improved by continuation of the sidewalk west of the project site along the project's frontage. Approximately 1,050 square feet of the frontage of the project site would be dedicated to the City for right-of-way purposes. The widening of Risdon Road would provide 4 public parking spaces. The Proposed Project would include the construction of an access lane proposed to be named "Autumn Brook Lane," which will connect all eight residences to Risdon Road. The private roadway would be designed and constructed in accordance with City Engineer requirements. No connection would be provided to David Avenue based on the design of the subdivision. The private lane would be approximately 28 feet wide and include 8 full size (8 feet by 22 feet) guest parking spaces. The lane design includes a turnout meeting the CCCFPD's needs for vehicle access and maneuverability. The proposed road within the subdivision would be private and maintained by a Homeowner's Association (HOA).

2.2.3 DRAINAGE

In February 2003, the California Regional Water Quality Control Boards for the San Francisco Bay Region and the Central Valley Region revised Provision "C.3" in the NPDES permit governing storm water discharges in the City. Accordingly, prior to issuance of permits for building, site improvements, or landscaping, applicants must submit a permit application consistent with the applicant's approved Stormwater Control Plan, and include drawings and specifications necessary for construction of site design features, measures to limit directly connected impervious area, pervious pavements, self-retaining areas, treatment BMPs, permanent source control BMPs, and other features that control stormwater flow and potential stormwater pollutants. The project drainage scheme has been designed to conform to the stormwater quality requirements of the City Design Review Application Checklist (Application Checklist) and the Contra Costa County Clean Water Program's Stormwater C.3. Guidebook (C.3 Guidebook). The stormwater design plan and engineered features are presented on **Sheet 18 of Appendix B**. The total amount of impervious area (buildings and all other hardscape surfaces) created and replaced as a result of the Proposed Project would be 36,373 square feet, or 0.83 acres. Accordingly, a Stormwater Control Plan was developed by the Applicant in accordance with the Application Checklist and is included as **Appendix C**.

According to the C.3. Guidebook, the Proposed Project falls within the threshold of Group 2 (greater than 10,000 Square Feet to less than 1 Acre) for replacement or creation of new impervious surfaces as shown on Table 1-1 in the C.3 Guidebook. Therefore, Treatment and Source Control Measures for stormwater runoff are required, while a Hydromodification Plan (HMP) or flow control is not applicable to the Proposed Project.

The project site is relatively flat and the runoff generated by the new development (excluding the flood control channel area) would require treatment. The drainage improvements include a conventional storm drain system with retention and water quality improvement features. The

storm drainage improvements for the project are designed to convey 10-year storm drainage flows through the project site as well as to provide overland release for up to a 100-year storm. These drainage facilities are designed to prevent interference with the operation of the water quality improvement measures described below. Preliminary sizing calculations were conducted using the modified rational method and flood routing techniques to ensure that adequate open space was incorporated into the site plan to ensure stormwater conveyance and treatment features function according to C.3 Guidebook requirements. The primary stormwater facility proposed for the project design is a bioswale for treatment of the runoff generated by the development (excluding the CCCFCD facilities). The proposed on-site stormwater facilities incorporate sub-drains and overflow outlet piping to insure positive drainage from the site. The ultimate outlet for both storm drainage and water quality treatment is the existing 33-inch diameter City storm drainage line that is located just to the northwest of the site within Risdon Road.

To facilitate stormwater facility designs, the site was divided into five Drainage Management Areas (DMAs). Disposal of runoff via deep infiltration was determined by a Geotechnical Survey attached as **Appendix D** to not be feasible due to the low permeability of the clay soils. As an alternative to infiltration, the bioswale would be developed along the eastern edge of the development site and would also act as a buffer between the proposed Autumn Brook Lane and residential development and the CCCFCD right-of-way and flood channel. The bioswale would cover an area of approximately 1,950 square feet and reduce stormwater flow velocities during low flow events. The bioswale would outlet into an on-site storm drain located at the northwest side of the bioswale which would discharge into the City's existing 33-inch storm drain along Risdon Road. The bioswale is designed to treat the low flows from the project site in accordance with the C.3 Guidebook and to pass through higher storm flows that do not require treatment into the storm drain line. The bioswale would be easily accessible for inspection and maintenance activities.

Runoff from roofs, parking stalls, driveways, pavement areas as well as lawn areas from each DMA will be collected via a closed conduit drainage system and drained to the bioswale. Runoff from roofs will have gutters which will drain to downspouts. The downspouts will discharge to splash blocks at each downspout location. The splash blocks located to the northeast of the high points at the rear corner of the buildings will surface drain toward and across the access road, across the sidewalk, through the concrete curb and gutter with 24-inch openings every ten feet and into the bioswale before discharging off-site via the on-site drain connecting to the City's 33-inch stormwater line within Risdon Road.

Additional stormwater improvements include removal of the 15-inch and 18-inch stormwater lines located within the existing frontage of the property to allow widening of Risdon Road. In place of the two drains, the Applicant would install a new 12-inch line that would connect to the existing 12-inch stormwater drain located along the southern portion of Risdon Road as it passes the western boundary of the project site. The 12-inch connection would run along the dedicated right-of way along the gutter of the new sidewalks, discharging into a drain line connecting the bioswale to the 33-inch City stormwater line. A storm drain would also be

installed within the gutter at the connection of the 12-inch line with the line draining the bioswale.

STORMWATER QUALITY

The bioswale would serve to not only reduce and convey flows to the City's stormwater system, but also treat stormwater runoff in accordance with the C.3 Guidebook. The vegetation within the bioswales would filter suspended sediments from the water passing through them. While the plants remove these large particles, microbes in the soil digest organic nutrients which in high concentrations can be considered pollutants.

Source control measures would be included within the project design and when homeowners occupy the residences. Source controls include the prevention of, or limitation of, pollutants being released into surface water as a result of stormwater runoff. This is the preferred method of pollution control since it is aimed at keeping pollutants out of the stormwater. The following table demonstrates that both types of source control measures have been considered to the maximum extent practicable.

TABLE 2
PERMANENT AND OPERATIONAL SOURCE CONTROL MEASURES

Potential Source	Permanent BMPs	Operational BMPs
Indoor and structural pest control		Provide Integrated Pest Management (IPM) information to homeowners, lessees and operators
Landscape and outdoor pesticides, herbicides, rodenticides, fungicides and fertilizers	Final Landscape Plans will: 1) Minimize irrigation and runoff and promote infiltration where appropriate 2) Minimize use of fertilizers and pesticides 3) Use pest-resistant plants, especially adjacent to hardscape when possible 4) Use plantings appropriate for the site soils, slopes, climate, sun, wind, land use, ecological consistency and plant interactions	Landscape will be maintained using minimum or no pesticides Landscape will be maintained using minimum fertilizer application especially adjacent to hardscape IPM information will be provided to homeowners and lessees
Vehicle washing		Stormwater pollution prevention information will be distributed to homeowners and lessees

Potential Source	Permanent BMPs	Operational BMPs
On-Site drain Inlets	Stencil the storm drain inlets at the bioretention pond with "No Dumping, Drains to Creek" using thermoplastic tape	
Interior floor drains	Interior floor drains will be plumbed to sanitary	
Need for future indoor and structural pest control	Obtain a letter from the Project Architect regarding the type of pest control that will be required for the type of building construction on the site.	

STORMWATER FACILITY MAINTENANCE

The proposed stormwater facilities remove pollutants primarily by filtering runoff slowly through an active layer of soil. Routine maintenance is needed to ensure that flow is unobstructed, that erosion is prevented, and that plant roots hold soils together and are biologically active. The detailed maintenance requirements for the proposed stormwater facility will be presented in an Operations and Maintenance Plan and Schedule which will be submitted to the City with the application for building permits, which will include, at a minimum, the general maintenance requirements listed below.

1. Inspect inlets for channels, exposure of soils, or other evidence of erosion. Clear any obstructions and remove any accumulation of sediment. Examine rock or other material used as a splash pad and replenish if necessary.
2. Inspect outlets for erosion or plugging.
3. Inspect side slopes for evidence of instability or erosion and correct as necessary.
4. Observe soil at the bottom of the swale or filter for uniform percolation throughout. If portions of the swale or filter do not drain within 48 hours after the end of a storm, the soil should be tilled and replanted. Remove any debris or accumulations of sediment promptly.
5. Examine the vegetation to ensure that it is healthy and dense enough to provide filtering and to protect soils from erosion. Replenish mulch as necessary, remove fallen leaves and debris, prune large shrubs or trees, and mow turf areas. When mowing, remove no more than 1/3 height of grasses. Confirm that irrigation is adequate and not excessive (no runoff should occur). Replace dead plants and remove noxious and invasive vegetation.
6. Abate any potential vectors by filling holes in the ground in and around the swales and bioretention and by ensuring that there are no areas where water stands longer than 48 hours following a storm. If mosquito larvae are present and persistent, contact the Contra Costa Mosquito and Vector Control District for information and advice.

Mosquito larvicides should be applied only when absolutely necessary and then only by a licensed individual or contractor.

2.2.4 GRADING

The project site is relatively flat and minimal grading would be required for the development and the proposed road and bioswale located on the east side of the project site. Construction activities would result in a net export of approximately 3,500 cubic yards of excavated soils.

The project site is located on expansive soils as defined in Table 18-1-B of the Uniform Building Code; however a completed geotechnical survey states that these soils are only in the topsoil and would not impact any infrastructure as special attention would be given during grading, including keeping the exposed soils moist by occasional sprinkling (**Appendix D**).

2.2.5 LANDSCAPING/LIGHTING

The Proposed Project will provide new landscaping. The preliminary planting palette includes flowering trees such as standard white oleander, red crape myrtle and western redbud and native trees such as coast live oak. As indicated on the preliminary landscape plan (**Sheet 19** of **Appendix B**), shrubs, groundcovers, vines, moss rock boulders, and bioswale area plantings are also proposed.

The Proposed Project requires the removal of protected trees which requires a City permit. The application to remove a Protected Tree requires the information be submitted to the Public Works Parks Division for review and response. Only protected trees require a permit prior to removal and there is currently no fee associated with a single permit. Non-protected trees do not require a City issued permit prior to removal.

1. A letter of intent from the property owner:
 - a. A plan showing the location of the tree(s) to be removed and the quantity and species of trees to be planted in exchange for the protected tree; and
 - b. Statement of specific reasons for the proposed removal
2. Arborist report including the following for each tree:
 - a. A written narrative from an I.S.A. Certified Arborist
 - b. Arborist Name, Certification # and company letterhead
 - c. Species (common and scientific name)
 - d. Size (diameter, height, crown spread)
 - e. Condition of the tree (foliage, vigor, structural integrity, etc.)
 - f. Prognosis
 - g. Life expectancy
 - h. Location diagram (and photos, if desired)

As shown on the Tree Exhibit and Demolition Plan, included as **Sheet 8 of Appendix B**, most trees within the drainage channel easement would be preserved while several protected trees along Risdon Road and in the northwest portion of the site are slated for removal. Most of the protected trees along the western property line would also be retained providing additional privacy and screening for the adjacent existing single-family homes. In accordance with permit requirements, a Tree Preservation Report is included as **Appendix A**. Typical Proposed Project fencing is shown on the landscape cross-sections (**Sheet 20 of Appendix B**) and consists of a combination of six-foot tall good-neighbor fences, 7.5-foot tall rear yard privacy fences, and 3.5-foot tall black tubular steel fencing along the proposed bioswale area.

The Proposed Project would have a rear (west) and side (south) 7.5-foot high wood privacy fence with decorative lattice, and on the side of the proposed housing developments, there would be a five-foot wide landscaped planter strip bordering the fence which would be planted with fast growing evergreen screen shrubs such as pacific wax myrtle, oleander, and toyon.

The proposed lighting plan would include four street lamps placed in front of/between each of the developed residences on the opposite side of Autumn Brook Lane. The street lamps would be consistent with the City standard height and are compatible with existing street lights in the vicinity. All street lamps located on Autumn Brook Lane would be connected to new utility lines and would be fitted with a cast aluminum base with a height of 32 inches and width of 15.5 inches. Light sources on the project site from the Proposed Project would also include light from the residences themselves at 34 total locations (east, north, south) that could potentially be seen from Risdon Road, neighbors to the west (although most would be blocked by the proposed landscaping and existing and replacement trees [50 percent of replacement trees are required to be 36-inch box trees] including the 7.5-foot privacy fence that would be constructed), and neighbors to the southwest and east. Lighting would be consistent with the surrounding residential neighborhoods.

2.2.6 INFRASTRUCTURE/UTILITIES

ELECTRICAL

According to Section 13.10.130 of the City Municipal Code, all utility facilities installed within public rights-of-way and on private property shall be installed and maintained underground unless the following apply:

1. Such lot is not contiguous to a property having underground facilities,
2. More than 50 percent of the street frontage within the block has aboveground facility service connections, and
3. The lots are less than 5,000 square feet in area and the floor area of the structures being constructed are less than 2,500 square feet.

Special exemptions to the undergrounding requirement may be granted by the City Council in cases where such undergrounding cannot be accomplished feasibly within the applicable safety regulations and other laws applying to the installation or in cases of unnecessary or unusual hardship. The Applicant proposes to install two power-line poles, both on the north side of the

project site adjacent to Risdon Road, providing a continuation of the existing overhead utility lines that run along the entire 0.54 mile length of Risdon Road. One power-line pole with overhead lines would be constructed near the corner of Autumn Brook Lane and Risdon Road on the east corner approximately 30 feet set back from the corner. The second power-line pole with overhead lines would be constructed near the first proposed house on the western corner of Autumn Brook Lane and Risdon Road approximately 30 feet set back from the corner. The remaining utilities would be undergrounded in accordance with Section 13.10.130 of the City Municipal Code. Joint trenching for utility lines would be developed along the edge of the proposed housing lawns for the entire length of Autumn Brook Lane and would connect to each housing unit on either the northeast or southeast corner of each, as well as connecting all four proposed street lamps on the eastern side of Autumn Brook Lane (**Sheet 15 of Appendix B**). A proposed electrical transformer would be located in front of housing units #4 and #5.

For the continuation of the overhead utility lines along Risdon Road, the Proposed Project meets exemption conditions 1 and 2 of Section 13.10.130 of the City Municipal Code. However, the proposed lot sizes and floor areas would exceed the maximum criteria established under Condition 3. Therefore, the Applicant would request a special exemption from the City Council due to the unnecessary hardship that would result from undergrounding of the utilities along Risdon Road, preventing the ability to widen Risdon Road and construct sidewalks along the project's frontage.

The proposed sanitary sewer lines would be installed under Autumn Brook Lane approximately 20 feet west of the eastern curb and approximately 40 feet east of the proposed housing units. All housing units would be connected to the sanitary sewer system by underground piping. Clean outs would be located approximately 20 feet from each proposed housing unit.

POTABLE WATER

Potable water lines would be installed under Autumn Brook Lane on the eastern half nearest to the proposed housing units. All water lines would be parallel to the sanitary sewer lines in a separate trench. A proposed fire hydrant would be located on the west side of Autumn Brook Lane between the proposed housing units of #3 and #4 and would be connected to the proposed water lines.

The CCWD has a preliminary Water Management Plan for single-family residences in the county to implement a 25 percent reduction in residential water use in accordance with Executive Order B-29-15, which requires the State Water Resources Control Board to impose restrictions to achieve a statewide 25 percent reduction in potable urban water use. These water management practices will be implemented in the final design of the Proposed Project and are listed and detailed in **Table 3**.

TABLE 3
WATER MANAGEMENT PLAN

Activity	BMPs	Design Features
Landscape and outdoor irrigation	1) No watering of outdoor landscapes in a manner that causes excessive runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures. 2) No watering of landscapes during and up to 48 hours after measureable rainfall. 3) No watering of outdoor landscapes more than two days per week or during the daylight hours of 9am-5pm. 4) No watering of landscape of newly constructed homes and buildings that is not delivered by drip or microspray systems.	Use of drought resistant vegetation will be priority along with green space around most of the impervious areas to reduce runoff of any water uses. All front yard planting areas, including private lane and easements will be irrigated by an automatic sprinkler system utilizing matched, low precipitation heads along with drip irrigation and include an automatic multi-programmable controller equipped with rain sensors and automatic shut off devices.
Vehicle and outdoor Structural washing	1) No washing of vehicles, trailers, boats, or outdoor structures using a hose without a shut off nozzle or within 48 hours of a measureable rainfall event.	C.3 treatment areas located on the opposite side of Autumn Brook Lane will collect all runoff water through the concrete curb and gutter system and filtered through a series of materials to reduce contaminants.
Decorative fountains, lakes, ponds	1) No water shall be used for outdoor non-recirculating decorative fountains or filling of decorative lakes or ponds. 2) Decorative fountains, lakes, and ponds shall not be allowed to run-over and overflow onto the ground at any time.	No decorative non-circulating fountains, lakes, or ponds are part of the final design of the Proposed Project.

2.2.7 CONSTRUCTION

Project improvements would be construction in one phase and would commence in the summer of 2015. Construction activities would be limited to 7:30 A.M to 6:00 P.M on the weekdays and 8:00 A.M. to 5:00 P.M. on weekends as per the City of Concord Police Department's *Excessive Noise Resource Guide* Handout. In addition, construction contractors are required to use power construction equipment with state-of-the-art noise and muffling devices. All internal combustion engines used on the Proposed Project shall be equipped with adequate mufflers and shall be in good mechanical condition to minimize noise created by faulty or poorly maintained engines or other components. Construction contractors are required to locate stationary noise generating equipment as far as possible from sensitive receptors. All construction activities would be conducted in accordance with applicable provisions of the California State Building Code (CBC), the Uniform Building Code (UBC), and applicable City requirements. The following equipment may be utilized during construction of the Proposed Project:

- Tunnel boring machine
- Pavement saw
- Jack hammers
- Excavators
- Front-end loaders
- 10-wheel dump trucks
- Bulldozers
- Water truck
- Paving equipment: back hoe, asphalt hauling trucks, compactors, paving machine, rollers Crane Trench shields
- Air compressors
- Flat-back delivery truck
- Concrete trucks
- Sweepers
- Road grader
- Concrete pumper trucks
- Welding trucks
- Side boom pipe handler tractor
- Earth mover

HAZARDOUS MATERIALS

The Applicant would ensure through the enforcement of contractual obligations that all contractors transport, store, and handle construction-required hazardous materials in a manner consistent with relevant regulations and guidelines. Recommendations would include, but are not limited to, transporting and storing materials in appropriate and approved containers, maintaining required clearances, and handling materials using approved protocols.

ASBESTOS CONTAINING BUILDING MATERIALS

DEMOLITION SURVEY

In accordance with Bay Air Quality Management District (BAAQMD) Regulation 11, Rule 2 Section 303.8, the Applicant would have the existing residence and associated structures thoroughly surveyed for the presence of asbestos-containing material (ACM), including Category I and Category II nonfriable ACM. The survey would be performed by a person who is certified by the Division of Occupational Safety and Health, and who has taken and passed an EPA-approved Building Inspector course and who conforms to the procedures outlined in the course. The survey would include sampling laboratory analysis all suspected asbestos-containing materials. This survey would be made available, upon request by the BAAQMD Air Pollution Control Officer (APCO), prior to the commencement of any ACM removal or any demolition.

DEMOLITION AND REMOVAL OF ACMS

Should the results of the survey indicate the presence of ACMS, the Applicant, through contractual obligations, would ensure compliance with BAAQMD Regulation 11, Rule 2, Section 303. Section 303 outlines the procedures required to remove ACMS, ensure oversight is provided by a qualified professional, and ensure adequate containment is provided to prevent release of asbestos fibers during removal. In addition, waste disposal of ACMS would be accomplished in accordance with BAAQMD Regulation 11, Rule 2, Section 304.

LEAD-BASED PAINT

The Applicant would have the existing residence and associated structures thoroughly surveyed for the presence of lead-based paint by a qualified environmental professional. If lead-based

paint is identified and is loose and peeling, the paint would be removed by a qualified lead abatement contractor. In accordance with U.S. EPA and California Department of Toxic Substances Control (DTSC) requirements, if the paint is securely adhering to the substrate, the entire material would be disposed of as demolition debris, which is a nonhazardous waste. Loose and peeling paint would be disposed of as a State and/or federal hazardous waste, if the concentration of lead exceeds applicable waste thresholds. Hazardous wastes would be appropriately managed, labeled, transported, and disposed of in accordance with local requirements by trained workers, as described above. State and federal construction worker health and safety regulations would require air monitoring and other protective measures be conducted during demolition activities should lead-based paint be present.

2.3 BACKGROUND

2.3.1 CCCFCD COORDINATION

The Applicant has initiated dialogue with the CCCFCD to address concerns regarding the easement on the east side of the property for flood control and maintenance purposes. Even though the CCCFCD holds a 72-foot wide easement, it requested an additional one-foot wide “clear offset buffer” from the easement line to make certain that no aspect of the proposed development would encroach into the existing easement. Additionally, it requested the installation of a (institutional) chain link fence along the easement line at no cost to the District. There has not been a fence along the easement line since the channel was constructed between 1958 and 1968. As requested, a one-foot wide “clear offset buffer” is now a part of the Tentative Map. In addition, the Applicant proposes to construct decorative black aluminum fencing, planted with a softly spreading vine which would be owned and maintained by the HOA (instead of an institutional chain link fence) to separate the CCCFCD channel from the residential development and associated infrastructure.

2.3.2 CITY AND PUBLIC COORDINATION

The Proposed Project and associated design details were formulated through a public and City vetting process that began in 2013. The Applicant’s original site design consisted of a 12 lots on a double loaded private lane in the middle of the site. The Proposed Project was redesigned as a 10 lot plan, then redesigned to a 9 lot plan on a single loaded lane in an effort to address City and County concerns.

As part of the Applicant’s outreach program, a neighborhood meeting was held on April 12, 2014. Individual invitations were mailed to approximately 63 households within 300 feet of the Proposed Project boundary. The meeting and site tour was conducted on a Saturday morning in an effort to maximize neighborhood participation. The nine-lot plan was presented at the first neighborhood meeting. A number of questions, concerns and recommendations were raised by the neighbors as discussed below.

Concerns about the number of lots on the project site resulted in the decrease from nine to eight, resulting in wider lots, improving the architectural elevations, and delineating a two-car garage and driveway apron for each lot. Additional parking spaces, including four overflow/public parking spaces on the south side of Risdon Road, were also added when the

lots were widened. The two-story homes were revised to create predominantly hipped roofs to reduce the building mass and soften the shape of the roofs as viewed from the surrounding neighbors. This also reduced impacts to the existing trees along the west property line with regard to trimming and/or limb removal.

Proposed house sizes would be consistent with surrounding housing to address concerns regarding stable property values for surrounding residences. The sales prices for the Proposed Project houses would be in the range of \$700,000 to \$825,000. This price range would be consistent with the surrounding residences.

Privacy concerns were addressed by maximizing the preservation of mature trees along the east, west, and south boundary lines to provide screening. In addition, a privacy fence 6 feet high with an additional 1.5-foot decorative lattice, for a total of 7.5 feet, was added to the plans for the perimeter of the project site. A five-foot wide planter strip was added to the final design for additional privacy screening along the new fence.

Neighboring property owners' concerns about construction-related noise and dust will be addressed through required conditions of approval, existing municipal code, and City required Certificates of Appropriateness such as wetting of disturbed soils during construction and through the installation of privacy fencing to lower the impact of operational noise sources that have been added. Design alterations have also been added to the southern-most house (closest to BART) in order to add protection from the noise. Noise and dust concerns are further discussed in **Section 3.0** under **Noise**.

Safety concerns related to refuse collection cart locations, pedestrians, and vehicles were addressed and incorporated into the design of the final Proposed Project. Refuse collection carts would be conveniently located on the land in front of the new houses and would avoid the use of Risdon road for collection. This will allow the collection carts to be wheeled down the driveway and placed at the curb in front of each house as required by the waste collection company. The Proposed Project frontage improvements include filling in the road, roadside ditches, concrete curbs and gutters, and sidewalk.

To address intermittent noise from BART, located approximately 240 feet south of Lot 8, the construction of a southeast wall of the house on Lot 8 with 2 feet x 6 inches framing, the addition extra insulation, and the installation of triple-pane windows on this wall are proposed. These measures are intended to protect this house and in turn, this house will buffer the noise for the rest of the new houses to the northwest of Lot 8.

On August 25, 2014, the City conducted the first City-sponsored neighborhood meeting. The revised site plan and preliminary architecture were introduced by City staff and presented by the Applicant. A number of comments and questions were posed by the neighbors. The questions were mostly regarding when the construction of the Proposed Project would start and how long the construction would last.

Between August 28, 2014 and April 9, 2015, representatives of the Applicant met with the public at various meetings for review and comments from the public. Tentative Map packages were

submitted and revised while two Incomplete Letters were received. The latest, third, official Tentative Map package was submitted on April 9, 2015 and is presented as the Proposed Project within this IS.

2.4 REGULATORY REQUIREMENTS, PERMITS, AND APPROVALS

As part of the implementation of the Proposed Project, the following permits and approvals may be necessary:

CITY OF CONCORD

The City is the approval authority for the Tentative Subdivision Map and all other applications associated with the Proposed Project (listed below). Pursuant to Development Code Section 18.405.020, if an applicant submits more than one planning permit application for the same project, all applications shall be filed and processed concurrently and each application shall be considered and acted upon by the appropriate review authority. When a single project requires both legislative (e.g. zoning map amendment) and discretionary permit applications (e.g. major subdivision, use permit, variance, design and site review, etc.) or any other discretionary approval where Table 18.400.020 shows more than one review authority, all applications shall be filed, processed, reviewed, and approved or disapproved concurrently by the highest level of authority required for any one application. For example, a project with a zoning map amendment and use permit shall be filed, processed, reviewed, and approved or disapproved by the City Council (after a recommendation from the Planning Commission) where a use permit application by itself may be reviewed and acted upon by the planning commission.

- Adoption of a Mitigated Negative Declaration for the Proposed Project
- Approval of a Tentative Subdivision Map
- Rezone of the project site from RS7 to RL.
- Approval of the Stormwater Control Plan
- Approval of the Tree Removal Plan
- Approval of Minor Exception

SECTION 3.0 – ENVIRONMENTAL CHECKLIST

Pursuant to CEQA *Guidelines* Section 15063, an IS should provide the lead agency with sufficient information to determine whether to prepare an environmental impact report (EIR), negative declaration (ND), or Mitigated ND (MND) for a proposed project. The CEQA *Guidelines* state that an IS may identify environmental impacts by use of a checklist, matrix, or other method, provided that conclusions are briefly explained and supported by relevant evidence. If it is determined that a particular physical impact to the environment could occur, then the checklist must indicate whether the impact is Potentially Significant, Less Than Significant with Mitigation, or Less Than Significant. Findings of No Impact for issues that can be demonstrated not to apply to a proposed project do not require further discussion.

This IS was prepared to assess the environmental impacts of the Proposed Project in accordance with CEQA to provide State permitting agencies with sufficient information to determine whether to prepare an EIR, ND or MND for the Proposed Project.

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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3.1 AESTHETICS

Would the project:

a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.1.1 ENVIRONMENTAL SETTING

The project site consists of an unoccupied building, open space with non-native grassland, and several trees (ornamental and native) which blend with the surrounding residential landscaping. The project site is surrounded on three sides by single-story residential structures. All surrounding residential structures face away from the project site, except for the two homes along Risdon Road, which share a side property line with the project site.

CITY PLANNING

In accordance with Municipal Code Section 17.35.120 and to ensure high quality site design, the Planning Division may refer a tentative map to the Design Review Board. In accordance with Development Code Section 18.400, the Design Review Board provides recommendations to the approving body (Planning Commission/City Council under a zoning change and the Planning Commission under a Planned Use Development Permit) regarding elements such as, but not limited to: siting of buildings and project grading, architectural relationship among project buildings and with neighboring properties, layout of streets and driveways, landscaping, walls and fences, and lighting. Accordingly, the Proposed Project was referred to the Design Review Board and at the regular meeting held on December 11, 2014, the Design Review Board recommended approval of the Proposed Project 5-0, including approval of the project setbacks as proposed (refer to **Figure 5**), with the following items to return as a staff report:

1. Final landscape plan to include wall detail within site visibility triangle, street sign detail, street trees along Risdon Road; and 36-inch box size for at least 50 percent of the proposed replacement trees; and
2. Home elevations to reflect additional gable and centered window on the left elevation of Plan 3A.

Both conditions were included within the updated project plans that comprise the Proposed Project.

3.1.2 IMPACT DISCUSSION

QUESTIONS A AND B

The project site is an existing open lot with an unoccupied house in advanced stages of disrepair. The existing scenic vista would not be adversely affected by the Proposed Project. The project site is not located within a state scenic highway and thus will not damage scenic resources such as trees, rock outcroppings, or historic buildings within the viewshed of such a highway. **No Impact.**

QUESTION C

Development of the Proposed Project would result in aesthetic features similar to the surrounding residential neighborhoods, would result in improved conditions, and Proposed Project features have been approved by the Design Review Board. While the proposed units would be two stories in height in an area dominated by single story residences, the Applicant revised design plans in consideration of concerns from surrounding residents. The two-story homes were revised to create predominantly hipped roofs to reduce the building mass and soften the shape of the roofs as viewed from the surrounding neighbors. Concerns for privacy were addressed by maximizing the preservation of mature trees along the east, west, and south boundary lines to provide screening. In addition, a privacy fence 6 feet high with an additional 1.5 feet of decorative lattice, total of 7.5 feet, has been added to the plans for the perimeter of the project site. A five-foot wide planter strip was added to the final design for additional privacy screening along the new fence. On October 16, 2014, an ISA Board Certified Master Arborist conducted a tree survey of the project site (**Appendix A**). The survey identified 18 trees

requiring removal due to poor health and 24 trees that should be incorporated into the site design. **Sheet 8 of Appendix B** identifies the location of those 24 trees that would be incorporated into the site plan. Accordingly, implementation of the Proposed Project would result in a less-than-significant impact to the existing visual character. **Less Than Significant.**

QUESTION D

Currently there are limited sources of light on the project site being an open lot with an unoccupied residence in the advanced stages of disrepair. The Proposed Project will add eight new housing units and four street lamps to the project site (as discussed above under **Section 2.2.5 Landscaping/ Lighting**). The new lights on the property would increase security and deter vagrancy and loitering that currently exist on the project site. With the implementation of the Lighting Plan as proposed by the Applicant (**Sheet 16 of Appendix B**); light from the Proposed Project's final design would be consistent with the surrounding residential neighborhood including the existing street lighting and would not constitute the addition of substantial sources of new daytime or nighttime lighting or glare. **Less Than Significant.**

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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3.2 AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest Range Assessment Project and Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.2.1 ENVIRONMENTAL SETTING

The project site is surrounded entirely by urban/developed residential subdivisions. It is located approximately 0.22 miles west of Ygnacio Valley Park (0.35 miles driving distance) and approximately 2.37 miles south of downtown Concord. The project site is relatively flat with ornamental tree and shrub vegetation. There is an abandoned residence on the northern half of the property, and not all ornamental vegetation has been maintained. The southern half of the

property is dominated by non-native grassland habitat with a few small trees growing along the southern and western boundaries. The property has not been used for agricultural purposes nor has it been used as forest land or timber harvest.

3.2.2 REGULATORY SETTING

FARMLAND MAPPING AND MONITORING PROGRAM

The U.S. Department of Agriculture (USDA) and the California Department of Conservation (CDC) have become involved with analyzing farmland losses. In 1975, the USDA Soil Conservation Service (SCS) began a mapping program to produce agricultural resource maps based on soil quality and land use across the nation. In 1982, the State of California created the Farmland Mapping and Monitoring Program (FMMP) within the CDC to carry on the mapping activity from the USDA-SCS on a continuing basis. The FMMP produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status and is usually based on information obtained from aerial photographs and data from the NRCS (NRCS, 2015).

WILLIAMSON ACT

The California Legislature passed the California Land Conservation Act (commonly referred to as the "Williamson Act") in 1965 to preserve agricultural lands and open space by discouraging premature and unnecessary conversion to urban uses. Under the Williamson Act, private landowners contract with counties and cities to voluntarily restrict privately-owned land to agricultural and compatible open-space uses. In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual use, rather than their potential market value. The vehicle for these agreements is a rolling-term, ten-year contract that is automatically renewed unless either party files a "notice of nonrenewal." The project site is not subject to a Williamson Act contract (California Department of Conservation, 2013).

CITY PLANNING

The City of Concord is dominated by urban/residential/commercial zoned land. There is no land that is zoned for agriculture, forest land, timberland, or timberland zoned for Timberland Production. However, permitted agricultural uses are allowed in the OS, PR, RLC, and WRC districts in the City. Outside of the open space land use designated for the CCCFCD easement, the nearest land use where agricultural operations can be permitted is located approximately one mile east of the project site. Prime Farmland, Unique Farmland, and Farmland of Statewide Importance have not been identified within the City (FMMP, 2015).

3.2.3 IMPACT DISCUSSION

QUESTIONS A THROUGH E

The Proposed Project is not located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance and would not convert any farmland to a non-agricultural use. As stated above, there is no existing agricultural zoned land or forest land, timberland, or timberland zoned for Timberland Production within the city limits of Concord and there are no land uses allowing permitted agricultural operations within one mile of the project site. Accordingly, there

would be no conflict with existing zoning nor would the Proposed Project conflict with the Williamson Act as the project site is not subject to a Williamson Act contract. **No Impact.**

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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3.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.3.1 ENVIRONMENTAL SETTING

Two types of air pollutants affect air quality in Concord: criteria air pollutants (CAPs) and toxic air contaminants (TACs). The major source of air pollutants in Concord is motor vehicle emissions. Heavy commute patterns throughout the San Francisco Bay Area have resulted in poor regional air quality levels.

Air quality issues in the City are under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), as the City is located in the San Francisco bay area air basin. Contra Costa County is one of seven counties that compromise the basin. The project site is located within the city limits of Concord and is surrounded by residential and urban developed land.

3.3.2 REGULATORY SETTING

The 1977 Federal Clean Air Act (CAA) required the United States Environmental Protection Agency (EPA) to identify National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for the six “criteria” air pollutants: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), respirable particulate matter (PM₁₀), and lead. Pursuant to the 1990 CAA Amendments (CAAA), the EPA has

classified air basins (or portions thereof) as either “attainment” or “non-attainment” for each criteria air pollutant, based on whether or not the NAAQS have been achieved. Under the NAAQS, County of Contra Costa is currently designated as non-attainment for ozone and particulate matter 2.5 microns and less in size.

The California Air Resources Board (CARB) regulates mobile emissions sources and oversees the activities of County Air Pollution Control Districts (APCDs) and regional Air Quality Management Districts (AQMDs). CARB regulates local air quality indirectly by State Ambient Air Quality Standards (CAAQS) and vehicle emission standards by conducting research activities, and through its planning and coordinating activities.

California has adopted ambient standards that are more stringent than the Federal standards for the criteria air pollutants. Under the California Clean Air Act (CCAA), patterned after the Federal CAA, areas have been designated as attainment or non-attainment with respect to CAAQS. Under the CAAQS, the Contra Costa County is designated a transitional non-attainment area for 1-hour O₃ and nonattainment for particulate matter ten micron in size (PM₁₀).

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

The BAAQMD controls criteria and toxic air pollutants. The primary role of cities in achieving and maintaining regional air quality is through land use decision-making, which can affect vehicle miles traveled, and through other measures to manage the emission of pollutants. BAAQMD identifies specific Transportation Control Measures (TCMs) that, together with other approaches, may help reduce emissions in Concord, contributing to regional pollution control and greenhouse gas reduction efforts.

The BAAQMD notes a particular need to reduce exposure to particulates and air toxics related to freeways and major arterials, especially those with high volumes of truck traffic, as well as exposure related to goods movement and distribution centers. Generally, ambient concentrations of toxic air contaminants are similar throughout the urbanized area of the Bay Area. BAAQMD regulates toxic air contaminants from stationary sources through their permit process; mobile sources of toxic air contaminants are regulated indirectly through vehicle emissions standards and through fuel specifications.

BAAQMD operates a regional network of air pollution monitoring stations that provide information on ambient concentrations of criteria air pollutants and toxic air contaminants. Two stations are operated within the City limits: number 2018, located at 2975 Treat Boulevard, and number 2032, located at 2477 Arnold Industrial Way (0.9 miles south of project site).

CEQA SIGNIFICANCE CRITERIA

City regulations for Air Quality fall under the BAAQMD’s jurisdiction. In June of 2010, the BAAQMD adopted Draft CEQA Guidelines (May 2010 Draft CEQA Guidelines), including significance thresholds and project screening criteria to determine if project specific air quality analysis is required. However, a lawsuit was filed contending that the adoption of the thresholds and criteria the Air District did not follow the CEQA process. The responsible court found that the BAAQMD did not comply with CEQA and that an assessment of the potential environmental

impacts from the adoption of the thresholds and criteria was required. The court did not determine whether the thresholds are or are not based on substantial evidence and thus valid on the merits. The court issued a writ of mandate ordering the District to set aside the thresholds and cease dissemination of them until the Air District had complied with CEQA. However, the court's order permits the BAAQMD to develop and disseminate the CEQA Guidelines, as long as they do not implement the thresholds of significance. Accordingly, an updated CEQA guidance document was approved in May of 2012 (BAAQMD, 2013). The updated guidance document states that in accordance with the court order, the CEQA lead agency assessing air quality impacts within the BAAQMD's jurisdiction will need to determine appropriate air quality thresholds. Because the Court did not invalidate the significance thresholds and screening criteria, the City, acting as Lead Agency under CEQA for the Proposed Project, has adopted the May 2010 Draft CEQA Guidelines including significance thresholds and associate screening criteria to address impacts to air quality.

Section 3.1.1 of the May 2010 Draft CEQA Guidelines states that if a project meets the screening criteria in Table 3-1, the project would not result in the generation of operational or construction-related CAPs or precursors that exceed the CEQA thresholds of significance. For single-family residences, the screening criteria for construction-related emissions is the development of 114 residences or less. For operational emissions, the screening criteria is the development of 325 residences or less.

SENSITIVE RECEPTORS

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions and odor sources, or duration of exposure to air pollutants or odors. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirmed are more susceptible to respiratory distress and other air quality related health conditions. Residential areas are considered sensitive to air quality because people usually stay home for extended periods of time with an increased exposure to ambient air quality.

The closest sensitive receptor is located approximately 10 feet from the project site boundary on the west side and approximately 20 feet from the extent of planned grading. This sensitive receptor is a residence where the existing homeowner has built an addition farther onto the easement (closer to the project site) than the other homeowners surrounding the project site (**Sheet 10 of Appendix B**). The next closest sensitive receptor on the west side of the project site is located approximately 35 feet from the extent of the planned grading area.

3.3.3 IMPACT DISCUSSION

QUESTIONS A, B, AND C

Implementation of the Proposed Project would result in the construction and operation of eight new residences within the air basin. In accordance with the screening criteria adopted by the City for the Proposed Project, the construction and operation of eight new residences would not result in emission exceeding the significance thresholds for CAPs and associated precursors.

Therefore, in accordance with the May 2010 Draft CEQA Guidelines, the Proposed Project would not conflict with or obstruct implementation of the applicable air quality plan set forth by the BAAQMD to meet the NAAQS (BAAQMD, 2010). Accordingly, there would not be a violation of any air quality standard or contribution to an existing or projected air quality violation. In accordance with the results of the screening criteria, the Proposed Project would not result in a cumulatively considerable net increase of any CAP. **Less Than Significant.**

QUESTIONS D AND E

The Proposed Project would be consistent with surrounding land uses such as residential housing. There would be no alterations or additions to the existing flood canal and it would remain in working condition. Construction equipment has the potential to emit odor in the vicinity of the project site. Generally construction odors are not detected beyond the project site boundaries. Under the BAAQMD Guidelines, the Proposed Project is not considered an odor generating land use. Additionally, in accordance with BAAQMD Regulation 7, the Proposed Project would be restricted from emitting quantities of pollutants that would cause detriment, nuisance, or annoyance to any persons or to the public. The Proposed Project would not expose sensitive receptors, as defined above, to substantial pollutant concentrations or odors. **Less Than Significant.**

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
3.4 BIOLOGICAL RESOURCES				
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the federal Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.4.1 ENVIRONMENTAL SETTING

The Proposed Project is surrounded entirely by urban/developed residential subdivisions. The northern half of the property consists of various trees and ornamental vegetation surrounding an unoccupied residence, on the west and south sides, trees and shrubs grow intermixed with ornamental vegetation. Non-native grassland habitat dominates the center and southern portion of the property. On the east side, a flood control channel runs north/south and is not vegetated within the channel. There is no riparian habitat located on the project site. The project site is

nearly isolated from any other open space/ native habitat, with the closest undeveloped area approximately 1.1 miles east.

FIELD SURVEY AND ANALYSIS

A field survey of the project site was conducted in April 2014 by Marylee Guinon LLC with Olberding Environmental, INC. An updated record search of critical habitat and special-status species and a field survey for verification of sensitive plant and wildlife species, habitats, and biological constraints potentially occurring on the project site was conducted on April 30, 2015 by biologist Nicholas Bonzey of AES. This survey verified the earlier survey results of occurring species. During the April 30 survey, five mallard (*Anas platyrhynchos*) drakes were observed on the flood control channel and no other wildlife species were witnessed on the site. A summary of the results of the 2014 assessment and 2015 field verification are provided below.

CRITICAL HABITAT

A California Native Diversity Database (CNDDDB) and United States Fish and Wildlife Service (USFWS) map was consulted for areas marked as critical habitat for listed species. Critical habitat Unit 1 and Unit 4 (Alameda whipsnake *Masticophis lateralis euryzanthus*) and critical habitat CCS-1 and CCS-2A (California red-legged frog *Rana daytonii*) occur within a five-mile radius of the project site.

SPECIAL-STATUS SPECIES

For the purposes of this assessment, special status has been defined to include those species that are:

- Listed as endangered or threatened under the Federal Endangered Species Act (FESA) (or formally proposed for, or candidates for, listing);
- Listed as endangered or threatened under the California Endangered Species Act (CESA) (or proposed for listing);
- Designated as endangered or rare, pursuant to California Fish and Wildlife (CDFW) Code (§1901);
- Designated as fully protected, pursuant to CDFW Code (§3511, §4700, or §5050);
- Designated as species of concern to the CDFW;
- Covered under the International Migratory Bird Treaty Act; or
- Defined as rare or endangered under CEQA.

SPECIAL STATUS WILDLIFE

A Trust Resource Report was generated from the US Fish and Wildlife Service (USFWS) Information, Planning, and Conservation (IPaC) system web site (see **Appendix E**). The report lists two amphibian species, two bird species, one crustacean species, two fish species, two flowering plant species, one insect species, and two reptile species that are proposed, candidate, threatened, or endangered federal status and have the potential to occur on the

project site. These are listed below. Critical habitat and details for each are further discussed in **Appendix E**.

- California Red-Legged Frog
- California Tiger Salamander
- California Clapper Rail
- California Least Tern
- Vernal Pool Fairy Shrimp
- Delta Smelt
- Steelhead
- Antioch Dunes Evening-primrose
- Contra Costa Wallflower
- Callippe Silverspot Butterfly
- Alameda Whipsnake
- Giant Garter Snake

No special status species were observed on the project site, and based on site conditions and both field surveys, no habitat exists to support a population of the protected species mentioned above. Both the California Red-Legged Frog (*Rana daytonii*) and the Alameda whipsnake (*Masticophis lateralis euryzanthus*) have critical habitat within five miles of the project site. However, due to the dense urban developed area between the critical habitat and the project site, it is unlikely for these species to be affected by the Proposed Project.

Migratory birds are listed in the IPaC report that have the potential to occur on the project site or fly over the project site. Not included in the IPaC report was the mallard (*Anas platyrhynchos*), a migratory species of waterfowl, which was observed on the project site in the flood control channel by the biologist.

3.4.2 REGULATORY SETTING

FEDERAL ENDANGERED SPECIES ACT

Under the FESA, the Secretary of the Interior and the Secretary of Commerce have the joint authority to list a species as threatened or endangered (16 United States Code [U.S.C.] 1533c). The purposes of the FESA are to provide a means to conserve the ecosystems that endangered and threatened species depend on and to provide a program for conservation and recovery of the species with the intent of removing the species from a listed, protected status. Regulatory protection is given to any species listed as endangered or threatened.

The Service and the National Marine Fisheries Service (NMFS) are the federal agencies that enforce the FESA. Pursuant to the requirements of the FESA, an agency reviewing a project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present in the project area and determine whether the Proposed Project will have an impact on such species. Under the FESA, habitat loss is considered to be an impact to the species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed for listing under the FESA or result

in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 U.S.C. 1536).

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

California Law, Fish and Game Code sections 3503 and 3503.5 provide for the protection of birds and birds' nests by prohibiting the take of birds, their nests, or their eggs.

California Law, Fish and Game Code section 1600 et seq., requires notification to the CDFW for proposed projects that may: divert, obstruct, or change the natural flow or the bed, channel or bank of any river, stream, or lake; use material from a streambed; or result in the disposal or deposition of debris, waste, or other material where it may pass into any river stream, or lake.

CEQA GUIDELINES

Several federal and state statutes protect rare, threatened, and endangered species. The CEQA Guidelines Article 20, Section 15380 provides that a species not listed on the federal or state list of protected species may be considered rare, threatened, or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions of endangered, rare, or threatened provided in the FESA and the CESA. This section of the Guidelines provides public agencies with the ability to protect a species from any potential impacts of proposed projects until the respective government agency has the opportunity to designate (list) that species as protected, if warranted.

The California Native Plant Society (CNPS) maintains an extensive list of plant species that it considers to be rare, threatened, or endangered, but have no designated status or protection under federal or state endangered species legislation. Impacts to CNPS listed species (e.g., CNPS list 1B and 2) are considered pursuant during CEQA environmental review.

CALIFORNIA ENDANGERED SPECIES ACT

Under the California Endangered Species Act (CESA), it is unlawful to take a State-listed endangered or threatened species. Fish and Game Code section 86 defines take as "hunt, pursue, catch, capture or kill or attempt to hunt, pursue, catch, capture or kill." CESA take authorization, from the CDFW, should be obtained if there is potential of take of a State-listed plant or wildlife species.

MIGRATORY BIRD TREATY ACT

Migratory birds are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The direct injury or death of a migratory bird, due to construction activities or other construction-related disturbance that causes nest abandonment, nestling abandonment, or forced fledging would be considered take under federal law. As such, project-related disturbances must be reduced or eliminated during the nesting season.

3.4.3 IMPACT DISCUSSION

QUESTION A

The Proposed Project would not have a substantial adverse effect on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or the United States Fish and Wildlife Service (USFWS) because no species within these categories have a potential to occur on the project site as explained previously. **Less Than Significant.**

QUESTION B

The project site does not consist of riparian habitat or any other sensitive natural community identified in local or regional plans, policies, or regulations by the CDFW or USFWS. **No Impact.**

QUESTION C

The Proposed Project is not located on or near a federally protected wetland as defined by Section 404 of the Clean Water Act and will not have an adverse effect through direct removal, filling, hydrological interruption, or any other means. **No Impact.**

QUESTION D

The project site is not located within a wildlife nursery site. The Proposed Project would not interfere with the movement of any native resident or migratory fish species. Nesting habitat for migratory birds and other birds of prey protected under the MBTA may include the trees scheduled for removal and annual grassland within the project site and vicinity. Potential disruption of nesting migratory birds and other birds of prey during construction could result in nest abandonment or mortality. Likewise, increased human activity and traffic, elevated noise levels, and operation of machinery could also impact birds if their nests are located within the vicinity of development areas. These impacts are potentially significant. With implementation of **Mitigation Measures Bio-1** through **Bio-3**, impacts would be less than significant. **Less than Significant with Mitigation.**

QUESTION E

As shown on **Sheet 8** of **Appendix B**, the Proposed Project would preserve 24 trees existing on the project site and would remove 18 trees. This is in accordance with the City of Concord tree ordinance for the preservation of the City's mature and special trees. The Proposed Project would not conflict with any local policies protecting biological resources. **Less Than Significant.**

QUESTION F

The project site is not located on or near an area of Habitat Conservation Plan, Natural Community Plan, or other approved local, regional, or state habitat conservation plan and thus would not affect any such plans or areas. **No Impact.**

MITIGATION MEASURES

- Bio-1** A qualified biologist shall conduct a pre-construction bird survey for nesting birds within 14 days prior to commencement of construction activities if anticipated to commence during the appropriate nesting season (between February 1 and August 31). The qualified biologist shall document and submit the results of the pre-construction survey in a letter to CDFW and the City within 30 days following the survey. The letter shall include: a description of the methodology including dates of field visits, the names of survey personnel, a list of references cited and persons contacted, and a map showing the location(s) of any bird nests observed on the project site. If no active nests are identified during the pre-construction survey then no further mitigation is required. Evidence, in the form of a letter report documenting the results of the survey, shall be submitted to the City Planning Department prior to commencement of construction activities.
- Bio-2** If any active nests are identified during the pre-construction survey within the project site, a buffer zone will be established around the nests. A qualified biologist will monitor nests weekly during construction to evaluate potential nesting disturbance by construction activities. The biologist will delimit the buffer zone with construction tape or pin flags within 250 feet of the active nest and maintain the buffer zone until the end of the breeding season or until the young have fledged. Guidance from CDFW will be requested if establishing a 250-foot buffer zone is impractical. Guidance from CDFW will be requested if the nestlings within the active nest appear disturbed.
- Bio-3** Trees anticipated for removal should be removed outside of the nesting season (February 1 and August 31). If trees are anticipated to be removed during the nesting season, a pre-construction survey shall be conducted by a qualified biologist. If the survey shows that there is no evidence of active nests, then the tree shall be removed within ten days following the survey. If active nests are located within trees identified for removal, a 250-foot buffer shall be installed around the tree. Guidance from CDFW will be requested if the 250-foot buffer is infeasible.

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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3.5 CULTURAL RESOURCES

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21704?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.5.1 ENVIRONMENTAL SETTING

ARCHAEOLOGICAL SETTING

This section presents information based on a record search provided by the Northwest Information Center (NWIC File No. 14-1366), a field survey conducted on April 30, 2015, and an on-line paleontological database search conducted on April 13, 2015 (**Appendix F-Confidential**).

The record search failed to identify any cultural resources within one half-mile of the project site. The record search identified only two previous studies which were conducted within one half-mile of the current project location, however those studies did not result in the recordation of any cultural resources. The only resources identified during the field effort consisted of a dilapidated residence and a segment of Ditch #2 of the Contra Costa Canal. The ditch segment measured approximately 40 feet wide and 10-12 feet deep; the ditch was lined with a combination of rock, concrete, and earth. The residence, now abandoned, has a front-facing U-shaped floor plan, including an attached garage, wood cladding, and a central ridge chimney and composition shingle roof. The front windows are single-hung, but the back windows have been replaced with aluminum sliders. All doors appear to have been replaced by plywood. There is also a shed in

the back yard, as well as two fenced garden areas. There are some associated decorative plantings, including ivy, fig trees, bamboo, roses, and palm.

A title search on the property indicated that an exclusive 20-foot roadway and utility easement centered on the southwest property line was filed in 1950, and a search of the Contra Costa County Assessor's records performed on April 13, 2015 indicated that the residence was constructed in 1952 and the 72-foot flood control easement was recorded in 1961.

HISTORICAL SETTING

The project site lies within the historic Rancho Arroyo de Las Nueces y Bolbones (also called "San Miguel"), a 17,782-acre Mexican land grant given to Juana Sanchez de Pacheco in 1834. Juana was the widow of soldier Miguel Pacheco, son of members of the 1776 De Anza Expedition. The Pacheco family used the rancho for cattle, but did not occupy the land.

ETHNOGRAPHIC SETTING

Prehistorically, the Concord area was occupied by Bay Miwok Indians, organized in triplets of related families, who were well-placed to exploit the rich resources offered by estuaries and grasslands. Proximity to Spanish missions led to early resettlement and conversion at the same time European diseases were taking significant toll on the population by the first half of the 19th century.

3.5.2 REGULATORY SETTING

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA requires that, for projects financed by, or requiring the discretionary approval of public agencies in California, that the effects that a proposed project has on historical or unique archaeological resources be considered (Public Resources Code Section 21083.2). Historical resources are buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance (PRC Section 50201). CEQA Guidelines Section 15064.5 define three cases in which a property may qualify as a historical resource for the purpose of CEQA review:

1. If it is listed in, or determined to be eligible by the State Historical Resources Commission for listing in the California Register of Historical Resources (CRHR); or
2. It is included in a local register of historical resource or identified as significant in a qualifying historical resource survey; or
3. The resource appears in, or is determined eligible for the listing, in the CRHR. Public Resources Code Section 5024.1 and CEQA Guidelines 15064.5 define eligibility requirements and states that a resource may be eligible for inclusion in the CRHR if it:
 - a. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
 - b. is associated with the lives of persons important in our past;

- c. embodies the distinctive characteristics of a type, period, region, or method of construction, represents the work of an important creative individual, or possesses high artistic values; or
- d. has yielded, or may be likely to yield, information important in prehistory or history.

Sites younger than 45 years, unless of exceptional importance, are not eligible for listing in the CRHR.

Properties must retain integrity to be eligible for listing on the CRHR. Properties that are listed in or eligible for listing in the National Register of Historic Places are automatically considered eligible for listing in the CRHR, and thus are significant historical resources for the purpose of CEQA (PRC section 5024.1(d)(1)).

- a) The resource is included in a local register of historic resources, as defined in section 5020.1(k) of the PRC, or is identified as significant in a historical resources survey that meets the requirements of section 5024.1(g) of the PRC (unless the preponderance of evidence demonstrates that the resource is not historically or culturally significant).
- b) The lead agency determines that the resource may be a historical resource as defined in PRC section 5020.1(j), 5024.1, or significant as supported by substantial evidence in light of the whole record.

Public Resources Code Section 21083.2 governs the treatment of unique archaeological resources, defined as “an archaeological artifact, object, or site about which it can be clearly demonstrated” as meeting any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

CALIFORNIA PUBLIC RESOURCES CODE

Public Resources Code Section 5097.5 prohibits “knowing and willful” excavation, removal, destruction, injury, or defacement of paleontological resources on public lands without prior permission from the appropriate agency. Public lands include those “owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.” If paleontological resources are identified within a given project area, the lead agency must consider those resources when evaluating a proposed project’s impacts. The level of consideration may vary with the importance of the resource in question.

ASSEMBLY BILL 52

On September 25, 2014, Governor Edmund G. Brown, Jr., signed Assembly Bill No. 52 (“AB 52”) into law. The new law expands CEQA to provide that any public or private “project with an

effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.” The law will apply to any project that has a notice of preparation, a notice of negative declaration, or mitigated negative declaration filed on or after July 1, 2015. More specifically, the law creates a new category of resources in CEQA called “tribal cultural resources” and seeks to engage the expertise of Native American tribes in the protection and preservation of those resources. To fulfill that purpose, the new law requires the lead agency to consult with a local Native American tribe as part of the environmental review process.

AB 52 requires consultation with California Native American tribes before the release of any environmental document (e.g., mitigated negative declaration or environmental impact report). The process is initiated by contacting the Native American Heritage Commission (NAHC) for a list of tribes specifically identified for AB 52; after receipt of results, the Lead Agency has 14 days to notify all tribes who’ve previously signed up for notification within set geographies. The lead agency must consult with a tribe within the geographical area of the project if the tribe (1) requested the lead agency to inform it of proposed projects within its area, and (2) the tribe responds within 30 days of receiving notification and requests consultation. During consultation, the parties may discuss possible mitigation measures to avoid or lessen the impact on tribal cultural resources. To protect the resource, any information submitted by a tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed to the public.

A request to search the Sacred Lands Files for a list of tribal organizations/individuals that may have information regarding cultural resources in the project area was sent to the NAHC on April 7, 2014. A response was received from the NAHC on April 29, 2015 listing three contacts that may have knowledge of cultural resources in the project area. Letters to these individuals were sent on June 21, 2015. To date, no response has been received.

PALEONTOLOGICAL RESOURCES REGULATORY SETTING

CEQA provides protection for unique paleontological resources and unique geologic features, and requires that planners consider impacts to such resources in the project review process. The Act distinguishes between ubiquitous fossils that are of little scientific consequence, and those, which are of some importance by providing protection for the latter. While CEQA does not precisely define unique paleontological resources, criteria established by the Society of Vertebrate Paleontology (SVP) provide guidance. The SVP defines a significant paleontological resource as one that meets one or more of the following criteria (SVP, 1995):

- Provides important information shedding light on evolutionary trends and/or helping to relate living organisms to extinct organisms;
- provides important information regarding the development of biological communities;
- demonstrates unusual circumstances in the history of life;
- represents a rare taxon or a rare or unique occurrence, is in short supply and in danger of being destroyed or depleted;

- has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
- provides important information used to correlate strata for which it may be difficult to obtain other types of age dates.

CEQA similarly fails to define precisely a unique geologic feature. For the purpose of this analysis, a *unique geologic feature* is a resource or formation that:

- Is the best example locally or regionally;
- embodies distinct characteristics of a geologic principal that is exclusive locally or regionally;
- provides a key piece of geologic information important in geology or geologic history;
- is a type locality of a geologic feature; or
- contains a mineral not known to occur elsewhere locally or regionally; or is a common teaching tool.

3.5.3 IMPACT DISCUSSION

QUESTION A

No historical resources, as defined in CEQA Guidelines 15064.5, were identified either during the background research or the field survey. Therefore, construction of the Proposed Project will have no impact on historical resources. **No Impact.**

QUESTION B

It is unlikely that archaeological resources exist within the Proposed Project site due to the lack of water sources or other features that would attract prehistoric use or occupation of the area. If any archaeological resources are encountered during construction of the Proposed Project, impacts to these resources would be potentially significant. With implementation of **Mitigation Measure CR-1**, impacts to archaeological resources discovered during construction of the Proposed Project would be reduced to less than significant. **Less Than Significant With Mitigation.**

QUESTION C

The project site is located on recent alluvial deposits underlain by Pleistocene alluvial fans, and construction impacts, anticipated to range from 1 to 3 feet below surface, are unlikely to penetrate sufficiently deep to affect any underlying formations that would include paleontological materials. Further, an on-line search of the University of California Museum of Paleontology on April 13, 2015 failed to identify any fossil localities in or near the project site. Therefore, construction of the Proposed Project will have no impact on paleontological resources. **No Impact.**

QUESTION D

It is unlikely that human remains are located within the Proposed Project site due to the lack of water sources or other features that would attract prehistoric use or occupation of the area. If any human remains are encountered during construction, impacts to these remains would be potentially significant. With implementation of **Mitigation Measure CR-2**, impacts to human remains discovered during construction would be reduced to less than significant. **Less Than Significant With Mitigation.**

QUESTION E

Although no responses have been received following the required consultation criteria under AB 52, the potential for the Proposed Project to cause a substantial adverse change in the significance of a tribal cultural resource is minimal considering that the project site is relatively disturbed and surrounding by existing development and the site exhibits a lack of potential resources available for exploitation prehistorically. Accordingly, implementation of the Proposed Project would result in a less-than-significant impact on tribal cultural resources. **Less Than Significant.**

MITIGATION MEASURES

- CR-1** Stop Potentially Damaging Work if Archaeological Resources Are Uncovered During Construction, Assess the Significance of the Find, and Pursue Appropriate Management. If previously unrecorded cultural resources (e.g., unusual amounts of shell, animal bone, bottle glass, ceramics, structure/building remains, etc.) are encountered during surveys of previously unexamined area where ground disturbance is planned or during project-related ground-disturbing activities, all ground-disturbing activities shall be halted within a 100-foot radius of the find. A qualified professional archaeologist shall identify the materials, determine their possible significance, and formulate appropriate measures for their treatment, which shall be implemented by the project applicants and their contractors. Potential treatment methods for significant and potentially significant resources may include, but would not be limited to avoidance of the resource through changes in construction methods or project design or implementation of a program of testing and data recovery, in accordance with all applicable federal and state requirements.
- CR-2** Stop Potentially Damaging Work if Human Remains Are Uncovered During Construction, Assess the Significance of the Find, and Pursue Appropriate Management. California law recognizes the need to protect interred human remains, particularly Native American burials and items of cultural patrimony, from vandalism and inadvertent destruction. The procedures for the treatment of discovered human remains are contained in California Health and Safety Code §7050.5 and §7052 and California Public Resources Code §5097. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all such activities within a 100-foot radius of the find shall be halted immediately and the project applicants' designated representative shall be notified. The project applicants shall immediately notify the county coroner and a qualified professional archaeologist. The coroner is required to

examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). The project applicant or its appointed representative and the professional archaeologist shall contact the Most Likely Descendent (MLD), as determined by the NAHC, regarding the remains. The MLD, in cooperation with the property owner and the lead agencies shall determine the ultimate disposition of the remains.

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
3.6 GEOLOGY AND SOILS				
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated in the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines & Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternate wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.6.1 ENVIRONMENTAL SETTING

A preliminary geotechnical exploration was conducted on February 18, 2014 by ENGEO Incorporated and it is attached as **Appendix D**.

The project site is located in the Coast Ranges geomorphic province of California. The Coast Ranges are characterized by a series of northwest-trending valleys and mountain ranges. The site is located in a broad valley underlain by thick alluvial deposits. Previous mapping efforts (refer to **Appendix D**) indicates that the site is underlain by late Pleistocene alluvial fan deposits. The site is relatively flat and not susceptible to landslides, although the southern portion of the site appears to be elevated by two to three feet with fill.

SEISMICITY

The nearest known active fault is the Concord fault located approximately one mile northeast of the project site. The Calaveras, Hayward, and San Andreas faults are located approximately 3 miles, 16 miles, and 40 miles to the southwest, respectively. The Greenville-March Creek fault is located approximately five miles to the northeast. Because of the proximity of the faults, the region is considered seismically active. Numerous, small, earthquakes occur every year in the region, and large earthquakes have been recorded and can be expected to occur in the future.

The primary seismic hazards in the project site are considered to be ground shaking and ground failure. Ground shaking occurs as energy. It is transmitted as elastic waves up through the bedrock to become a series of complex waves or oscillations in the ground surface. Such ground shaking is one of the main causes of earthquake damage. According to the Seismic Shaking Hazards in California map, the project site is located in an area with relative high potential for peak ground acceleration during a seismic event (CGS, 2015). Liquefaction and landslides can increase damage from ground shaking. Liquefaction changes water-saturated soil to a semi-liquid state, removing support from foundations and causing buildings to sink. Liquefaction is determined by a number of factors, including soil type, depth to water, soil density, and the duration and intensity of ground shaking (USGS, 2008). Alluvial deposits consisting of stiff clay were encountered during the soil exploration (**Appendix D**) to depths of about 52 feet that are not considered susceptible to liquefaction. On this basis, the potential for liquefaction at the site appears to be low.

SOIL AND SOIL HAZARDS

Soil sampling conducted as part of the preliminary geotechnical exploration indicates that the project site is located on expansive soils as defined in Table 18-1-B of the Uniform Building Code. However, the results indicate that these soils are only in the topsoil and would not impact any building or infrastructure if special attention during grading is given. Expansive soils are largely comprised of clays, which greatly increase in volume when water is absorbed and shrink when dried. Expansive soils are of concern because building foundations may rise during the rainy season and fall during the dry season in response to the clay's action; this can cause structural distortion.

3.6.2 REGULATORY SETTING

ALQUIST-PRIOLO EARTHQUAKE FAULT ZONING ACT

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972; it prohibits the placement of structures intended for human occupancy from being built across active fault traces in California. The Act requires delineation of zones (Alquist-Priolo zones) along active faults in order to address seismic concerns as they relate to public safety and project design. The Act only addresses the hazards of surface fault rupture and is not intended to regulate activities relating to other earthquake hazards such as liquefaction, landslides, or tsunamis. Cities and counties are required to regulate development projects within Alquist-Priolo zones.

SEISMIC HAZARDS MAPPING ACT

This Seismic Hazards Mapping Act requires cities, county, and local permitting agencies to regulate urbanization development and redevelopment projects within seismic hazard zones that have been delineated by the State Geologist. Before a development permit can be granted to a proposed project located near a seismic hazard zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design.

3.6.3 IMPACT DISCUSSION

QUESTION A

The Proposed Project would not be developed on a fault line as delineated in the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area and therefore no adverse impacts from fault rupture would result from project development. While there would be a potential for strong seismic ground shaking or seismic-related ground failure, the residences are required to be constructed in accordance with the California Building Code and associated seismic provisions for this region of California. Due to the relatively flat topography and soil structure, there would not be a risk for landslides based on the activities of the Proposed Project. The Proposed Project would not expose people or structures to potential substantial adverse effects including the risk of loss, injury, or death. **Less Than Significant.**

QUESTION B

There would be no substantial soil erosion or loss of topsoil from the Proposed Project. A stormwater control plan attached as **Appendix C** has been incorporated into the design of the Proposed Project to ensure that soil erosion would be minimized and in compliance with local discharge limits. The Proposed Project would disturb less than one acre of soil and therefore does not require coverage under the National Pollutant Discharge Elimination System general permit for construction activities. The Proposed Project is required to comply with all City development standards and with the inclusion of the grading and drainage plan (**Sheet 12 of Appendix B**) impacts would be less than significant in relation to soil erosion. **Less Than Significant.**

QUESTION C

The Proposed Project is not located on a geological soil that is unstable or would become stable as a result of the Proposed Project activities. The site is relatively flat and not susceptible to landslides, lateral spreading, subsidence, liquefaction, or collapse. **No Impact.**

QUESTION D

While the project site is located on expansive soils as defined in Table 18-1-B of the Uniform Building Code; the results of the preliminary geotechnical exploration conclude that due to the shallow depth of the expansive soils, conventional grading operations, incorporating fill placement specifications tailored to the expansive characteristics of the soil, and use of a mat foundation (either post-tensioned or conventionally reinforced) are common, generally cost-effective measures to address the expansive potential of the foundation soils. Based upon our initial findings, the effects of expansive soils are expected to pose a low impact when properly addressed during construction. As discussed in **Section 2.2.4**, implementation of the Proposed Project includes ensuring adequate watering of the soils as recommended by the preliminary geotechnical exploration to address expansive soils during construction activities minimizing the potential for adverse impacts from soil expansion and contraction (**Appendix D**). **Less Than Significant.**

QUESTION E

The project site consists of connection to the City's municipal utility wastewater conveyance system and therefore no on site wastewater disposal system would be developed on the project site and accordingly there would be no impact concerning soil suitability for such disposal. **No Impact.**

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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3.7 GREENHOUSE GAS EMISSIONS

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.7.1 ENVIRONMENTAL SETTING

The project site is located within the city limits of Concord and is surrounded by residential development. Approximately 240 feet south of the project site, Bay Area Rapid Transit's (BART's) Pittsburg/Bay Point line runs northeast to southwest and all connecting roadways to the project site are residential roads. Landscaping and a bioretention/ bioswale designated areas will be implemented throughout the project site and near the CCCFCD's canal located on the east side of the project site. The City adopted a Citywide Climate Action Plan (CAP) July 23, 2013 (source: <http://www.cityofconcord.org/pdf/dept/planning/climate.pdf>) and utilizes the BAAQMD as its regulatory authority.

3.7.2 REGULATORY SETTING

In references to greenhouse gases (GHGs) on a global level, activities such as motor vehicle use, manufacturing, and power plant operations are generating carbon dioxide, methane, and other GHGs faster than the earth's atmosphere can absorb them. These emissions are expected to lead to global temperature increases in the next century, potentially affecting Concord's flora and fauna, water supply, and climate. Assembly Bill (AB) 32, approved by the State legislature in 2006, required the California Air Resources Board to develop regulations and programs to reduce the state's GHG emissions to 1990 levels by 2020. Subsequently, Senate Bill (SB) 375 was adopted to reduce statewide motor vehicle emissions, in part by improving coordination between land use, transportation and housing decisions. Like other cities in California, the City is taking action to address climate change through its land use and transportation policies. The City has adopted a City-Wide CAP which outlines the strategies for achieving this objective. The most basic elements of this CAP are to concentrate new development around BART; build at densities that support transit use; develop a well-connected bicycle and pedestrian system; provide a balanced mix of employment, services, and housing to minimize trip lengths; and incorporate advanced energy conservation and efficiency measures in the design of new buildings and infrastructure. While the CAP does not include significance thresholds for CEQA impact analyses the City has adopted the BAAQMD May 2010 Draft

CEQA Guidelines. Those guidelines also include significance thresholds and screening criteria to address potential GHG emissions impacts.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

As discussed under Air Quality, the City, acting as Lead Agency under CEQA for the Proposed Project, has adopted the BAAQMD May 2010 Draft CEQA Guidelines which also include significance thresholds and associated screening criteria to address impacts from GHG emissions. Section 3.1.1 of the May 2010 Draft CEQA Guidelines states that if the Proposed Project meets the screening criteria in Table 3-1 (attached as **Appendix G**), the Proposed Project would not result in the generation of GHGs that exceed the CEQA thresholds of significance. For single-family residences, the screening criteria for GHGs is the development of 56 residences or less.

3.7.3 IMPACT DISCUSSION

QUESTIONS A AND B

Implementation of the Proposed Project would result in the development of eight new residences within the air basin. In accordance with the screening criteria adopted by the City for the Proposed Project, the development of eight new residences would not result in emission exceeding the significance thresholds for GHGs. The Proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. In accordance with the results of the screening criteria, the Proposed Project would not result in a cumulatively considerable net increase of GHGs. **Less Than Significant.**

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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3.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.8.1 ENVIRONMENTAL SETTING

HAZARDOUS MATERIALS

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, State, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in Title 22 of the California Code of Regulations (CCR) as:

“A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed” (CCR, Title 22, Section 66260.10).

3.8.2 REGULATORY SETTING

CORTESE LIST

California Government Code Section 65962.5(a) states that The DTSC shall compile and update as appropriate, but at least annually a list of detailing the following (commonly known as the Cortese List):

1. All hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code.
2. All land designated as hazardous waste property or border zone property pursuant to Article 11 (commencing with Section 25220) of Chapter 6.5 of Division 20 of the Health and Safety Code.
3. All information received by the Department of Toxic Substances Control pursuant to Section 25242 of the Health and Safety Code on hazardous waste disposals on public land.
4. All sites listed pursuant to Section 25356 of the Health and Safety Code.

ASBESTOS CONTAINING BUILDING MATERIALS

Under District Regulation 11, Rule 2, the BAAQMD regulates the demolition of buildings and structures which may contain asbestos. Because asbestos has been used extensively in residential, commercial and industrial construction, BAAQMD Regulation 11-2-401.3 requires that for every demolition (even when no asbestos is present), a notification must be made to the BAAQMD at least 10 working days (except in special circumstances) prior to commencement of demolition.

REGIONAL SETTING

EnviroStor is a search tool for the DTSC that contains information on hazardous materials incidents in California, including contaminated sites as well as lists of facilities that process or

transfer toxic waste, including the sites listed on the Cortese List. The database includes federally designated sites, state response sites, military sites, school sites and voluntary cleanup sites. Each entry in the database contains a report which includes information on the current address, site status, past contaminating uses, history of the site, current and historical toxic substances present, and land use restrictions, potential environmental impacts of toxic substances present as well as completed or planned projects. Sites that were once listed as contaminated but have been cleaned up or have had project completed are also specially listed. A search of the Proposed Project area indicated that there are no sites listed on the EnviroStor database within 1,000 feet of the project site (DTSC, 2015). Accordingly, there are no sites listed on the Cortese Listed located within 1,000 feet of the project site. The nearest EnviroStor listing (ID# 60000557) is located approximately 1 mile northeast of the project site. The listed incident pertains to a polychlorinated biphenyls soil remediation project for which the case was closed in 2007 (DTSC, 2015).

PROJECT SITE

The unoccupied residence on the project site was built in 1952 and may contain asbestos and/or lead-based paint within the structure and building/finishing materials. State-level agencies, in conjunction with the USEPA and Occupational Safety and Health Administration (OSHA) regulate removal, abatement, and transport procedures for asbestos-containing materials (ACMs). ACMs are materials that contain asbestos, a naturally-occurring fibrous mineral that has been mined for its useful thermal properties and tensile strength. Releases of asbestos from industrial, demolition or construction activities are prohibited by these regulations and medical evaluation and monitoring is required for employees performing activities that could expose them to asbestos. Additionally, the regulations include mandatory warnings and practices that must be followed to reduce the risk for asbestos emissions and exposure. Federal, state and local agencies must be notified prior to the onset of demolition or construction activities with the potential to release asbestos. Lead-based paint (LBP), which can result in lead poisoning when consumed or inhaled, was widely used in the past to coat and decorate buildings. Lead poisoning can cause anemia and damage to the brain and nervous system. Like ACMs, LBP generally does not pose a health risk to occupants when left undisturbed; however, deterioration, damage, or disturbance will result in hazardous exposure. In 1978, the use of LBP was banned. Therefore, only buildings built before 1978 are presumed to contain LBP.

AIRPORT HAZARD ZONES

Airports and air strips are considered to contain harmful material and are considered potentially hazardous zones. The project site is located 4.3 miles south of the nearest airport to the project site (Buchanan Field Airport), and therefore is located outside of any airport hazard zone.

WILDLANDS

The project site is within an urban neighborhood surrounded by residential land use, which is typically not extremely susceptible to wildland fire. The project site is located in a non-Very High Fire Hazard Severity Zone (CAL FIRE, 2009).

3.8.3 IMPACT DISCUSSION

QUESTION A AND B

The Proposed Project would not create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials as all federal, state, and local regulations and mandatory steps will be taken to ensure any hazardous materials are properly transported, used, and disposed of. During grading and construction activities, it is anticipated that limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, paints, etc. would be brought onto the site. Temporary storage units (bulk above-ground storage tanks, 55-gallon drums, sheds/trailers, etc.) would likely be used by various contractors for fueling and maintenance purposes. As with any liquid and solid, the handling and transfer between one container to another has the potential for an accidental release. Construction contractors will be required to comply with applicable federal and State environmental and workplace safety laws. Adherence to these regulatory requirements would ensure that this impact is less than significant. The demolition of the existing residence on the project site requires compliance with BAAQMD rules to ensure minimal releases of ACMs and lead-based paint. As stated in **Section 2.2**, the Applicant would ensure the Proposed Project would be constructed in compliance with BAAQMD Regulation 11, Rule 2 and LBP removal protocols and therefore would result in a less than significant impact in relation to asbestos and lead. **Less than Significant.**

QUESTION C

The project site is not located within 0.25 miles of a proposed or existing school; the closest school is Oak Grove Middle School, which is located 0.6 miles from the project site. In addition, through compliance with BAAQMD Regulation 11, Rule 2 BAAQMD Regulation 11, Rule 2 and LBP removal protocols, demolition activities associated with the Proposed Project would result in a minimal potential for asbestos and lead emissions. **Less than Significant.**

QUESTION D

There are no listings of hazardous materials incidents compiled pursuant to Government Code §65962.5 (Cortese List) within 1,000 feet of the project site. Implementation of the Proposed Project would not create a significant hazard to the public or environment. **No Impact.**

QUESTIONS E AND F

The Proposed Project would not result in a safety hazard for people residing or working on the project site. The project site is not located within two miles of land that is used as an airstrip, nor is it located within two miles of a public or private airport. **No Impact.**

QUESTION G

The Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The Proposed Project would be developed on existing open space and would not result in the blockage of access routes or evacuation routes adopted within an emergency response plan or emergency evaluation plan. In addition, the Proposed Project has implemented a standard fire department turnaround area

between houses 6 and 7 of the final site plan to ensure the efficiency of emergency response plans. **No Impact.**

QUESTION H

The Proposed Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. **No Impact.**

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
3.9 HYDROLOGY AND WATER QUALITY				
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding,	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
including flooding as a result of the failure of a levee or dam?				
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.9.1 ENVIRONMENTAL SETTING

Concord sits south of Suisun Bay. Surface water bodies within Concord include Mallard Reservoir, Walnut Creek, Pacheco Creek, Kirker Creek, Mt. Diablo Creek, Pine Creek, Galindo Creek, Grayson Creek, Clayton Canal, Contra Costa Canal, and slough and wetlands located along the bay. The City is primarily in the Mt. Diablo Creek and Walnut Creek watersheds. Concord is underlain by two groundwater basins, Clayton Valley and Ygnacio Valley.

The project site is located within an urban setting with storm water draining either to the City municipal system or the flood control canal (discussed below under *Flooding*). Apart from the CCCFCD canal, the project site has no direct access to surface waters and therefore currently does not directly discharge to a surface water feature. The City is incorporated into the Contra Costa Clean Water Project and associated National Pollutant Discharge Elimination System (NPDES) Permit for municipal storm water systems (Municipal Regional Permit). Provision C.3 in the Municipal Regional Permit requires site designs for new developments and redevelopments to minimize the area of new roofs and paving. Where feasible, pervious surfaces should be used instead of paving so that runoff can infiltrate to the underlying soil. Remaining runoff from impervious areas must be captured and used or treated using bioretention. In some developments, the rates and durations of site runoff must also be controlled. The C.3 requirements are separate from, and in addition to, requirements for erosion and sediment control and for pollution prevention measures during construction. Adherence to the C.3 requirements minimizes water quality impacts from new development to maintain regional compliance with the Municipal Regional Permit.

There is an existing domestic well located on the project site just south of the existing fence and residence (located on the northern part of the project site) and just southeast of the existing shed. This well is currently not in use and is planned to be capped.

FLOODING

Flood zone mapping by the Federal Emergency Management Agency (FEMA) indicated that the project site is prone to flooding near the Contra Costa Canal Ditch No. 2 (on the east side of the project site) and further discussion on FEMA mapping for the project site is attached as **Appendix H**. FEMA Flood Insurance Map, Community-Panel Number 06013C0283F and located in area designated as “Zone AE within the canal and Zone X (500 year floodplain)

outside of the channel.” FEMA categorizes a 1 percent annual flood (100-year flood) or “base flood” as a flood that has a 1 percent chance of being equaled or exceeded in any given year. The flood zone AE is an area in which base flood elevations have been determined. Flood zone X areas are areas of minimal flooding, which are outside of the Special Flood Hazard Areas and higher than the elevation of the 0.2 percent annual chance of flood (also known as the 500-year flood) (FEMA, 2009). There are no off-site areas draining onto the project site. The site drains by overland flow either to the existing flood control canal or the existing drainage ditch along the southeast side of Risdon Road.

In the early 1950's, CCCFCD was formed to provide flood protection. A series of flood control channels and ditches were constructed beginning in the early 1950's to protect structures and the City. CCCFCD's Ditch Number 2 runs through the project site on the east side. Ditch No. 2 was constructed sometime between 1958 and 1968, according to an online database (HistoricAerials, 2015). The flow line of the canal is typically about nine feet below the adjacent grades. The slopes of the side of the canal are about 2:1 (horizontal: vertical). The total drainage area for Ditch No. 2 is 5.40 square miles. Where the canal crosses under Risdon Road and David Avenue, existing concrete drop structures limit the potential for erosion of the canal. The banks are currently vegetated with grasses and scattered trees. At the drop structures, there are approximately 20 feet of grouted riprap for the full height of the bank. An unpaved 22-foot wide service road is situated along the entire southwest side of the canal from Risdon Road to David Avenue and is located within the CCCFCD easement. The canal was constructed by an excavation into the native soils and alluvium. There was no fill indicated during the October 14, 2014 (**Appendix I**) survey conducted by ENGE0, nor was instability indicated through borings.

3.9.2 IMPACT DISCUSSION

QUESTION A

STORMWATER

As discussed in **Section 2.2**, the Proposed Project has been designed to conform to the stormwater quality requirements of the City of Concord Design Review Application Checklist and the Contra Costa County Clean Water Program's Stormwater C.3. Guidebook (C.3 Guidebook). Stormwater generated from the impervious surfaces of the Proposed Project would be treated via a bioswale that would run the length of the eastern boundary of the project site, adjacent to the CCCFCD easement. With project site design in compliance with the C.3 Guidebook which, when followed, provides for compliance with the Municipal Regional Permit and associated waste discharge requirements and adequately sized infrastructure (refer to **Section 3.17** for the analysis of stormwater infrastructure), implementation of the Proposed Project and subsequent treatment of the waste generated by the new residences would not result in CCCSD violating the waste discharge requirements of the Municipal Regional Permit and water quality would not be significantly impacted. **Less Than Significant.**

WASTEWATER

Wastewater would be conveyed to the Central Contra Costa Sanitary District (CCCSD) Wastewater Treatment Plant in Martinez (WWTP) for treatment and disposal. The WWTP operates under an NPDES permit and associated waste discharge requirements issued by the San Francisco Bay Regional Water Quality Control Board (RWQCB) under order number R2-2012-0016 (Order) that prevent impacts to receiving water quality. The Order establishes numerical limitations for biological activity (carbonaceous biological oxygen demand), total suspended solids, oil and grease, pH, bacteria, copper, cyanide, dioxin-TEQ, acrylonitrile, Bis(2-ethylhexyl) phthalate, and ammonia. The CCCSD treatment system was designed to handle residential waste and must satisfy the numerical requirements or the RWQCB has the authority to levy penalties, impose cease and desist orders, and issue moratoriums for new sewer service connections if waste discharge requirements are violated. The proposed residences would generate waste that is within the design parameters of the wastewater treatment facility and therefore would not introduce a new source of pollutants that could result in exceeding the numerical limitations. The addition of residential wastewater would not cause CCCSD to exceed wastewater treatment requirements as established by the Order to protect water quality (infrastructure capacity is assessed in **Section 3.17**); thus, a less-than-significant impact would occur. **Less than significant.**

QUESTION B

Potable water would be supplied through the City Public Works Department and no groundwater wells would be developed on site. The existing on-site well would be capped and could no longer be used. Minimal increase in consumption of surface water resources attributable to the eight new residential units would result from the Proposed Project. **Less-Than Significant.**

QUESTION C AND D

The Proposed Project would not significantly alter the drainage patterns existing on the project site or surrounding area as there would be minimal grading and the existing drainage pattern would be kept in the same direction (easterly). There would be a minimal impact on erosion and siltation through the development of the bioswale and “green space” as a buffer between the development and the CCCFCD canal. In addition, the storm water generated under the Proposed Project would drain to the City’s municipal system, consistent with existing conditions. Accordingly, the Proposed Project would not alter the existing drainage pattern or the site or area through alteration of or course of a stream, river, or substantially increase the amount of runoff which would result in flooding. **Less Than Significant.**

QUESTION E

The project site would contain a bioswale area that will convey runoff and reduce runoff pollutants from the developed impervious areas preventing runoff generated by the new impervious surfaces of the Proposed Project from entering the CCCFCD channel Ditch No.2. According to pre- and post-development runoff calculations submitted by the Applicant to the City, the bioswale would also reduce the Proposed Project’s peak stormwater flow rate to a level below the existing peak stormwater runoff rate at the project site. Accordingly, the Proposed Project would not create runoff water which would exceed the capacity of existing or planned

stormwater drainage systems (Parsons, 2015.) . Refer to **Question A** regarding the storm water quality of runoff generated by the Proposed Project. **Less than Significant.**

QUESTION F

The Proposed Project would not cause a degradation of water quality due to the design features incorporated into the Proposed Project specifically to address stormwater quality. The final design of the Proposed Project includes a bioswale area to reduce runoff and water quality issues, as well as grading implementations to reduce runoff on impervious surfaces. **No Impact.**

QUESTION G AND H

The Proposed Project would not place housing in a 100-year flood hazard zone area. As stated above, the project site is located in area designated as “Zone AE within the canal and Zone X (500 year floodplain) outside of the channel.” Zone AE corresponds to the ability of the channel to contain the a 500 year flood event resulting in the areas outside of the canal being designed as being located outside of a 500 year flood plain (Zone X). Accordingly, with all construction activity proposed within the Zone X or zone outside of the 500-year floodplain, there would be no structures which would impede or redirect flood flows as a result of the Proposed Project. **No Impact.**

QUESTION I

The Proposed Project would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including the failure of a dam or levee as there are no dams or levees upstream or on the project site. **No Impact.**

QUESTION J

There are no tsunami inundation areas in the Walnut Creek Quadrangle where the project site is located. The closest tsunami inundation is in the Benicia Quadrangle, located northwest of the project site. The project site is not located adjacent to a lake nor is the portion of the Bay susceptible to seiche. The project site is located in an area with generally flat topography. Because there are no drastic changes in elevation, there are no risks of mudflows onto the project site or as a result from development of the Proposed Project. The Proposed Project would not cause inundation by seiche, tsunami, or mudflow. **No Impact.**

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
3.10 LAND USE AND PLANNING				
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.10.1 ENVIRONMENTAL SETTING

Single-family residential is the most significant land use within the city limits according to the land use designation. The project site is not within the boundaries of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other conservation plan.

3.10.2 REGULATORY SETTING

The Development code defines zoned residential areas as RR, RS, RL, RM, and RH. The project site is located on RS7. The RS District is applied to areas of the City appropriate for single-family residential uses in neighborhoods at densities of 2.5 to 10 units per net acre, subject to appropriate standards. The RS zoning districts generally apply to the single family residential districts with development existing at the time of the adoption of the Development Code on July 24, 2012. The specific allowable density for each parcel is shown on the Zoning Map by a numerical suffix residential density designator (RS-12, RS-10, RS-8, RS-7.5, RS-7, and RS-6) corresponding to the minimum lot size (12,000, 10,000, 8,000, 7,500, 7,000, 6,000 square feet, respectively). The RS District is consistent with and implements the Low Density Residential (LDR) land use designation of the General Plan.

The proposed rezone if selected by the Applicant would be RL (Residential Low Density): The RL District is applied to areas of the City appropriate for low density residential uses in a neighborhood with predominately detached single-family dwellings, but allows a diversity of compatible housing types and lot sizes from larger lot single-family dwellings to cottages, cluster, courtyard, and patio homes, and duplexes, at densities of 2.5 to 10 units per net acre. The RL District requires a minimum of 1,920 square foot lot area and is consistent with and implements the LDR land use designation of the General Plan.

3.10.3 IMPACT DISCUSSION

QUESTION A

The project site currently consists of residential land use, although a majority of the project site is undeveloped. Implementation of the Proposed Project would be a continuation of the surrounding residential development. Implementation of the Proposed Project would not impact the transportation network nor establish a barrier for residents to move amongst the community. Although, the Proposed Project would not physically divide an established community, implementation would result in the elimination of the exclusive 20-foot roadway and utility easement centered on the southwest property line. The easement is not currently utilized and therefore removal would result in a less-than-significant impact to land use. **Less Than Significant.**

QUESTION B

The 2030 General Plan designation for the project site is Low Density Residential (LDR). With the project's proposal for eight on-site units on a 2.02-acre site, the resulting unit density of 10 units per acre would comply with the 2030 General Plan Designation density range (2.5 to 10).

Under the development code, the project site is currently zoned as RS-7 requiring minimum net lot sizes of 7,000 square feet. The net lot size excludes rights of ways and other environmental or development constraints such as the proposed access lane and the 72-foot CCCSD easement on the project site. Implementation of the Proposed Project would result in the development of net lot sizes ranging from 3,653 feet to 6,779 feet. Therefore, the Proposed Project would not comply with the existing zoning. Accordingly, the Applicant is requesting a rezone of the project site as part of the Proposed Project, which has been designed to be consistent with the RL zoning and associated development requirements as described in **Section 2.2**. In accordance with Section 18.455.070 of the Development code, the rezoning may only be approved if all of the following applicable findings are made:

1. The proposed amendment is consistent with the general plan.
2. The proposed amendment would not be detrimental to the public interest, health, safety, convenience, or welfare of the city.
3. Zoning map amendments shall also find that the affected site is physically suitable, including absence of physical constraints, access, compatibility with adjoining land uses, and provision of utilities, for the requested zoning designation and proposed or anticipated uses and/or development.

As stated above, the resulting unit density of the Proposed Project of 10 units per acre is consistent with the 2030 General Plan Low Density Residential land use designation of the project site. As shown in **Figure 4**, the rendition of the Proposed Project indicates that the lot alignments and home orientations would be compatible and well integrated with the existing neighborhood and would not be detrimental to the public interest, convenience, or welfare of the City. For example, the proposed homes would align with the residential units along the western

border of the project site. Within an area similar to that of the Proposed Project, the RS-7 district supports development of six residential units. The variance to the RS-7 zoning district requested by the Applicant would result in the development of eight residential units. The increase in density of two additional homes in the same general housing area within the existing zoning district would be well integrated into the neighborhood and would not appear to result in an obvious clustering of homes inconsistent with the existing zoning requirements. Furthermore, the development would not interfere with the flood protection provided by the CCCSD canal located along the eastern boundary of the project site and the proposed development includes an emergency services vehicle turn-around area between lots 6 and 7 for ease of access. All public service and utility amenities would be easily accessible and development would not endanger, jeopardize, or otherwise constitute a hazard to the public. With the inclusion of the private easement to allow development of the access road, and with the dedication of the right-of-way of the project frontage along the northern border of the project site, implementation of the Proposed Project would provide additional parking amenities to the neighborhood as well as improve pedestrian safety through the widening of Risdon Road and the associated development of sidewalks. With the proposed rezoning, the Proposed Project would comply with regulations and policies related to the new designations or development requirements and would meet the findings required for approval of the rezone in accordance with the Development code. Accordingly, implementation of the Proposed Project would result in a less-than-significant impact to the applicable land use plan, policy, or regulation. **Less Than Significant.**

QUESTION C

There will be no conflicts with any applicable habitat conservation plan or natural community conservation plan. **No Impact.**

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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3.11 MINERAL RESOURCES

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.11.1 ENVIRONMENTAL SETTING

The project site is not currently being mined nor does it have a known valuable mineral resource (California Department of Natural Resources, 2015). The project site is not a main access point for any other mined resources in the area. Mineral and aggregate resources exist in areas on the southern limits of the City. Access to these resources is restricted by existing developed areas in residential neighborhoods and commercial developments along with existing roadways.

3.11.2 IMPACT DISCUSSION

QUESTIONS A AND B

Based on the lack of valuable mineral resources on the project site, the Proposed Project will not result in the loss of availability of a known mineral resource that would be of future value to the region and residents of the state, nor would it result in the loss of availability of a locally important mineral resource recovery site. **No Impact.**

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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3.12 NOISE

Would the project result in:

a) Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing in or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing in or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.12.1 ENVIRONMENTAL SETTING

The major existing noise source in Concord is vehicle traffic, including the Bay Area Rapid Transit (BART) system which is located approximately 250 feet south of the project site. The BART tracks are elevated and noise from BART tends not to be amplified towards the project site, however the BART train does cause light vibrations and a low-toned noise that can be heard from all the way to the north end of the project site. To the north, east, and west of the project site, the main sources are from residential and neighborhood daily noise.

A noise survey was conducted on April 30, 2015 at three locations on the project site (**Figure 6**). The first reading (Site A) was taken on the northern part of the project site on the driveway of the existing abandoned residence, the second reading (Site B) was taken near the center of the project site just south of a set of large trees, and the last reading (Site C) was taken on the southern side of the project site. Readings were taken between 10:15 a.m. and 11:10 a.m.

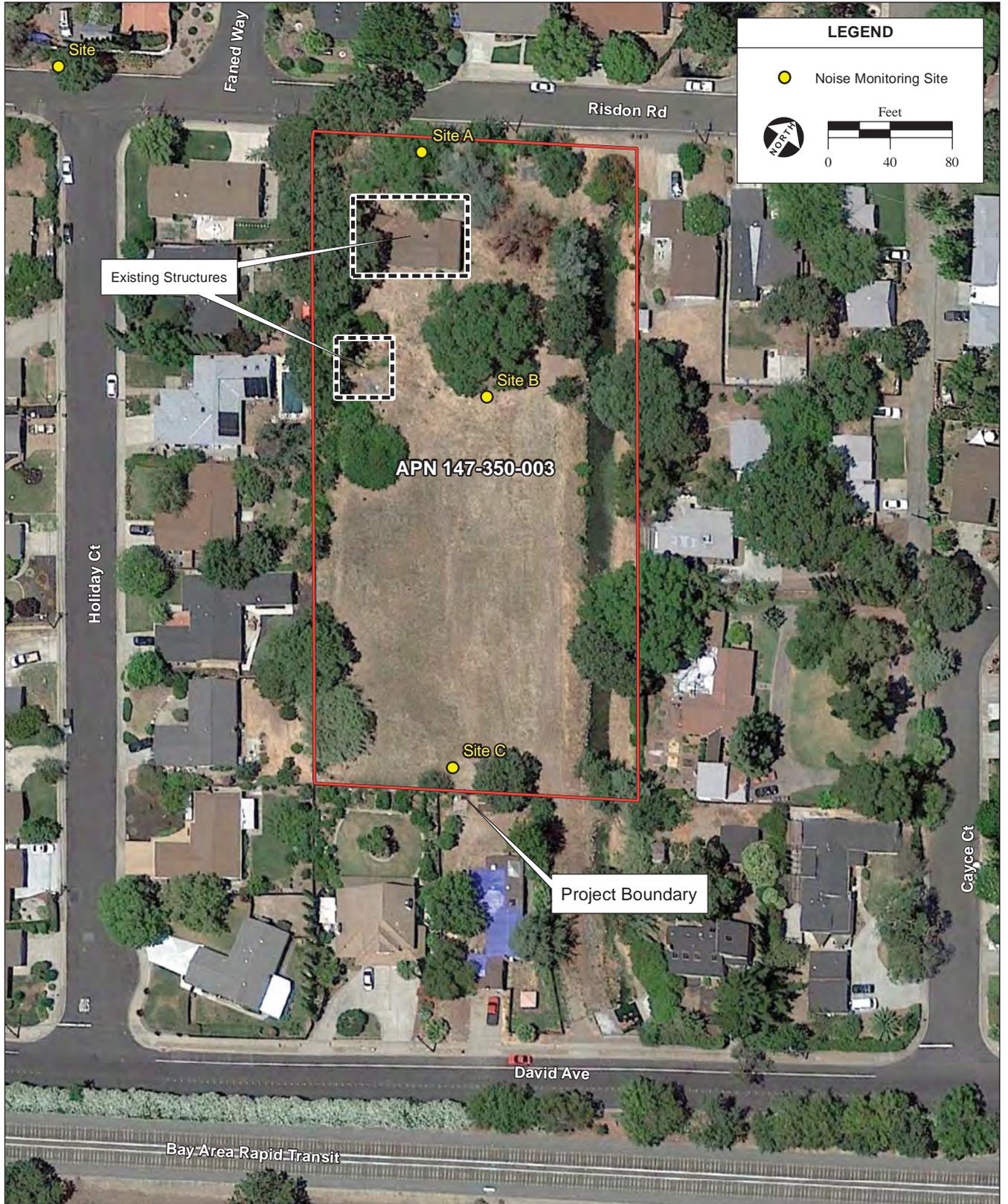


Figure 6
Noise Monitoring Sites

The ambient noise levels were found to be between 47.6 and 49.2 A-weighted decibels (dBA). A-weighted decibels are an expression of the relative loudness of sounds in air as perceived by the human ear; equipment is corrected to reduce readings of low frequencies. This correction is made because the human ear is less sensitive at low audio frequencies, especially below 1000 Hz, than at high audio frequencies. Due to the surrounding land uses of residential streets and residences, ambient noise levels would not vary significantly during the day. The BART approximately 250 feet south of the Proposed Project site is the main source for noise. The BART runs every 15 minutes and on average for 20 hours each day (weekends run different hours), an evening noise monitoring is not expected to produce dissimilar results. A table with each site noise monitoring detail is listed below:

Table 4
SUMMARY OF 15-MINUTE NOISE LEVEL MEASUREMENTS

Site	Date (2015)	Start Time	End Time	Noise Source	Receptor	Measure Noise Level (dBA Leq) ¹
A	April 30	10:15am	10:30am	Risdon Road, Residences, BART	Residential	49.2
B	April 30	10:35am	10:50am	Risdon Road, Residences, BART	Residential	48.3
C	April 30	10:54am	11:09am	Risdon Road, Residences, BART	Residential	47.6
Source: AES Noise Monitoring, 2015. 1) All measurements are A-Weighted.						

SENSITIVE NOISE RECEPTORS

Some land uses are considered more sensitive to noise than others due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, and parks and other outdoor recreation areas generally are more sensitive to noise than commercial and industrial land uses. A sensitive receptor is defined as any living entity or aggregate of entities whose comfort, health, or well-being could be impaired or endangered by the existence of noise.

The closest sensitive receptor is located approximately 10 feet from the project site boundary on the west side and approximately 20 feet from the extent of planned grading. This sensitive receptor is a residence where the existing homeowner has built an addition onto the exclusive 20-foot roadway and utility easement centered on the southwest property line (closer to the project site) than the other homeowners surrounding the project site (**Sheet 10 of Appendix B**). The next closest sensitive receptor on the west side of the project site is located approximately 35 feet from the extent of the planned grading area.

CITY OF CONCORD NOISE RESTRICTIONS

City Municipal Code section 8.25020(1)(y) restricts the hours that construction work can take place to reduce noise impacts on the public near construction projects. Allowed construction times are Monday-Friday 7:30a.m. until 6:00p.m. and 8:00a.m. until 5:00p.m. on the weekends. Construction activities will not take place outside of the allowed hours unless otherwise

indicated on the use permit or building permit or imposed under an environmental mitigation and monitoring program.

3.12.2 IMPACT DISCUSSION

QUESTION A

During construction, the Proposed Project would expose persons to noise levels in excess of standards established in the local general plan. The duration of the construction would be reduced as all houses will be completed in one phase and as discussed in **Section 2.2**, construction would be limited to the times provided in the Municipal Code. Noise impacts resulting from construction would depend on: 1) the noise generated by various pieces of construction equipment; 2) the timing and duration of noise generating activities; 3) the distance between construction noise sources and noise sensitive receptors; and 4) existing ambient noise levels.

As discussed in **Section 2.2.7**, construction contractors are required use power construction equipment with state-of-the-art noise and muffling devices. All internal combustion engines used on the Proposed Project shall be equipped with adequate mufflers and shall be in good mechanical condition to minimize noise created by faulty or poorly maintained engines or other components. Construction contractors shall locate stationary noise generating equipment as far as possible from sensitive receptors.

As stated in **Section 2.0** under *Landscaping*, a privacy fence would be installed on the west and south sides of the project site to buffer noise generated from construction and operational sources. A five-foot buffer planter strip would also be installed and implemented with fast-growing shrubs and trees to decrease noise sources from construction and operation of the Proposed Project.

Post-construction would not expose persons to noise levels in excess of standards established in the local general plan. The Proposed Project would occur only between the allowed hours for any on-site or off-site work. Ambient noise levels would be consistent with the local surroundings of residential noise. **Less Than Significant.**

QUESTION B

The Proposed Project would not expose persons to excessive ground borne vibrations or ground borne noise levels. Generally, excessive vibration is only an issue when construction requiring the use of equipment with high vibration levels (i.e., compactors, large dozers, etc.) occurs within 25 to 100 feet of an existing structure. Impact pile driving, which typically produces the highest vibration levels, is not anticipated to occur. No pile drivers, blasting, or major earthmoving with large dozers would take place during construction. All equipment, as stated in **Section 2.0**, would be considered standard construction equipment would not produce substantial vibration of the project areas. Given the infrequent use of heavy equipment and the distance to the nearest sensitive receptor, exposure to groundborne vibration from construction activities would be minimal.

Operation of the Proposed Project would not create groundborne vibration. There would be no post-construction ground borne vibrations caused by the Proposed Project as single-family residences surround the project site and only single-family residences would be built and the impact would be less than significant. **Less Than Significant.**

QUESTION C

The Proposed Project consists of an eight-house subdivision which is consistent with the surrounding residential land uses and would not substantially increase the permanent ambient noise levels in the project vicinity above existing levels. As described in **Section 2.2**, a privacy fence 6 feet high with an addition 1.5 feet of decorative lattice for a total of 7.5 feet-high would be constructed on the south, west and partially north side of the project site to reduce impacts of permanent noise sources. Landscaping would be consistent with all surrounding landscaping and would be also used as a sound buffer. The southernmost house would be fixed with triple-paned windows and added insulation and thicker walls to reduce sound from the BART system. **Less than Significant.**

QUESTION D

There would be a temporary increase in ambient noise levels in the project vicinity during the construction phase of the Proposed Project. Refer to the discussion under *Question A* concerning construction noise. Development of the Proposed Project would result in noise levels and durations consistent with the existing residential setting. **Less Than Significant.**

QUESTIONS E AND F

The Proposed Project is not located within an airport land use plan or within two miles of a public airport, public use airport or a private airstrip exposing people residing in or working in the project area to excessive noise levels. The closest airport is Buchannan Field Airport located approximately 4.3 miles north of the project site. **No Impact.**

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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3.13 POPULATION AND HOUSING

Would the project:

a) Induce substantial population growth in an area either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.13.1 ENVIRONMENTAL SETTING

The City had a population of 122,067 in 2010, and Contra Costa County had a population of 1,049,025, with a projection for 2015 of 125,826 and 1,085,733 respectively (U.S. Census, 2010). There were an estimated 44,878 households within the City in 2010, with an approximate 2.73 persons per household (U.S. Census, 2010). According to the Regional Housing Needs Allocation, between 2014 and 2022 the City needs an additional 2,236 homes for moderate to above moderate income households (City of Concord, 2014).

3.13.2 IMPACT DISCUSSION

QUESTIONS A THROUGH C

Based on the conservative assumption that each of the 8 single family residences will house 1 standard family of 5 individuals, there will be an estimated maximum population increase of 40 individuals as a result of the Proposed Project. The Proposed Project would not induce substantial population growth in the area directly or indirectly. Removing one residence to develop eight would not constitute displacement of a substantial number of existing housing units or people necessitating the construction of housing elsewhere. The Proposed Project assists the City in meeting the Regional Housing Needs Allocations. **No Impact.**

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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3.14 PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times or other performance objectives for any of the public services:

a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.14.2 ENVIRONMENTAL SETTING

The project site is located in a residential area that is served by the Contra Costa Police Department. The City of Concord is divided into six beats of patrolling areas. The project site is located in the third beat and is normally patrolled by one or two officers. Each beat consists of an approximate 22,000 citizens. Between January 1, 2015 and April 6, 2015 there have been 51 service calls in beat #3 (CPD, 2015).

The nearest Fire Department Station to the project site is the Contra Costa Fire Training Center on Treat Boulevard which is an active fire station with up to 4 engines working at any given time. Treat Boulevard is approximately 0.9 miles south of the project site and response time is approximately five minutes for emergency calls (CPD, 2015).

The project site is located in the Mt. Diablo Unified School District, the 23rd largest school district in the State has an approximate 33,977 students attending (Niche, 2015). This District is composed of 31 elementary schools, 9 middle schools, 5 high schools, and 19 alternative schools and programs. **Table 5** lists the closest schools to the project site of which none have been reported as being overcrowded.

The closest city park, Ygnacio Valley Park, is located approximately 0.22 miles east of the project site. Ygnacio Valley Park is located at the northeast corner of Oak Grove Road and David Avenue. The total area of the park is 9.5 acres consisting of ball fields, jogging paths, picnic and barbeque facilities, and is a popular children’s play area with a large expanse of turf for free play.

TABLE 5
NEARBY SCHOOLS

School	Location Relative to the Project Site (miles)	Within Mt. Diablo Unified School District?
Ygnacio Valley Elementary	0.75 Northeast	Yes
Woodside Elementary	2.0 East	Yes
Oak Grove Middle	0.6 South	Yes
Ygnacio Valley High	3.0 Southeast	Yes
De La Salle High	2.0 South	No

3.14.2 IMPACT DISCUSSION

QUESTIONS A THROUGH E

The Proposed Project would not result in a an increase in the use of public services that would result in the need for new or physically altered government facilities, the construction of which could impact the environment. With the development of eight residences, construction and operation of the Proposed Project would not cause significant impacts to service ratios, response times, or other performance objectives to fire protection, police protection, parks, or other public facilities in the area. Assuming each of the eight residences would house a family of five, three of those individuals are assumed to be school-aged children. Therefore, a conservative assumption would be that implementation of the Proposed Project would result in the addition of 24 children to the nearby schools. **Less Than Significant.**

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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3.15 RECREATION

Would the project:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.15.1 ENVIRONMENTAL SETTING

As previously discussed, Ygnacio Valley Park is the closest park to the project site. Len Hester Park is located approximately 0.90 miles west of the project site and approximately 1.6 miles driving/walking distance. Len Hester Park is composed of 9.5 acres of gently rolling terrain with lawn and trees suitable for children’s play, walking, jogging, and has several picnic areas located throughout.

3.15.2 IMPACT DISCUSSION

QUESTION A AND B

Assuming 40 new individuals would inhabit the neighborhood after development, with over 9.5 acres of parks within 0.90 miles of the project site, the Proposed Project would not increase the use of existing neighborhood parks or recreational facilities such that a substantial accelerated physical deterioration of the 9.5 acres of facilities would occur. There would be no recreational facilities included in the Proposed Project, nor would it require expansion of recreational facilities that may have an adverse physical effect on the environment. **No impact.**

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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3.16 TRANSPORTATION AND CIRCULATION

Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level-of-service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.16.1 ENVIRONMENTAL SETTING

Roadways are the primary existing transportation facilities within the City. The existing roadway network near the project site consists of local streets. Existing bicycle, pedestrian, and transit facilities are also present in the city and are located within 0.25 miles of the project site. Major roadways within the city limits are Interstate 680, State Routes 4 and 242, Willow Pass Road, Clayton Road, Monument Boulevard, Ygnacio Valley Road, Concord Avenue, and Treat Boulevard. Transit service in Concord is provided by County Connection bus and two BART

stations within the City which connect via the BART tracks located just south of the project site within 250 feet.

The Buchanan Field Airport is located on Sally Rise Drive approximately 4.3 miles north of the project site. The Buchanan Field Airport has an average of 225 operations per day and 392 aircraft that are based there (FlightAware.com, 2015).

Risdon Road borders the project site to the north. Risdon Road narrows from its connection to Faned Way heading east towards the project site. This narrowing does not allow for adequate public parking along the side of the road, nor does it provide a safe pedestrian environment. The Proposed Project will widen this section of Risdon Road from the current 44 feet to 49 feet. There will be a dedicated 1,050 square foot right-of-way to the City adjacent to the project site and Risdon Road. This right-of-way will allow pedestrians to walk along Risdon Road safely. All gutter and curb infrastructures will be per City standards, with an open curb every 12 feet on center to allow for surface drainage to the CCCFCD facilities.

Regional access to the project site is provided via Monument Boulevard to the north and Treat Boulevard to the south of the project site. Both provide access from SR 242/Interstate 680 to Oak Grove Avenue hence Risdon Road and the project site. The Pittsburg/Bay Point BART line provides access from Pittsburg in the East Bay to Millbrae in the southern portion of the San Francisco Peninsula in San Mateo County.

To avoid an inadequate access for emergency vehicles, the Proposed Project contains a fire engine/ emergency services turn-around area located between the residences of #6 and #7 which is a standard size under the City's planning division.

3.16.2 REGULATORY SETTING

The City follows guidelines under the 2011 Contra Costa Congestion Management Program (CMP), which requires every jurisdiction to conduct a traffic impact analysis for any proposed development project, development plan, or General Plan Amendment that would generate more than 100 vehicle trips in the peak hour (Page v, CCTA, 2013). Under the CMP, and using the highest trip generation rate published by the Institute of Transportation Engineers for P.M. peak hour trips generated by single-family detached homes (2.98 trips per residence), the addition of eight new residences would result in the addition of approximately 24 weekday P.M. peak hour vehicle trips to the existing roadways (ITE, 2008) and therefore does not warrant the development of a traffic impact study and impacts to levels of services are assumed to be less than significant.

3.16.3 IMPACT DISCUSSION

QUESTIONS A, B, AND F

The Proposed Project and associated development of eight homes within an area designed in the General Plan and Zoning Ordinance for residential development would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking in account all modes of transportation including mass transit

and non-motorized travel and relevant components of the circulation system including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. The Proposed Project would not conflict with an applicable congestion management program including level-of-service standards and travel demand measures, or other standards established by the county due to the low number of new units that would be developed. As discussed above, the Proposed Project will increase safety and traffic flow by widening Risdon Road where it connects with the project site. **Less Than Significant.**

QUESTIONS C THROUGH E

The Proposed Project will not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. There would not be a substantial increase in hazards due to a design feature or incompatible uses with the Proposed Project. There would not be a result of inadequate emergency vehicle/ service access due to the Proposed Project, as stated above, the implemented designs allow for a turn-around for emergency medical and service vehicles and personnel. **No Impact.**

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
3.17 UTILITIES AND SERVICE SYSTEMS				
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.17.1 ENVIRONMENTAL SETTING

CCCSO permits, inspects and treats wastewater discharged by the business and residences of Concord. Wastewater within CCCSO is primarily conveyed to the Central Contra Costa Sanitary District Treatment Plant (CCCSO TTP) through pipes by the force of gravity. Located in Martinez, the plant has a treatment capacity of 54 million gallons per day (mgd) and 240 mgd of wet weather flow. The facility is staffed 24 hours a day, 365 days a year. Wastewater moves through the District's 1,500 miles of sewer lines, finally arriving at the plant's headworks to begin treatment. Most of the wastewater is treated to a secondary level, disinfected by ultraviolet light, and then discharged into Suisun Bay. Approximately 600 million gallons per year are treated to

a tertiary level through additional filtration and disinfection before being distributed as recycled water for landscape irrigation, industrial processes, and plant operations (CCCSD, 2009).

Contra Costa Water District acts as the city's water supplier, providing water supplies to the City municipal system from the Sacramento/ San Joaquin Delta. CCWD serves treated and raw water to central and eastern parts of the county.

According to the City Public Works Department, existing sewer lines at the intersection of Whitman Road and Getoun Drive, and Whitman Road and Oak Grove Road, are currently flowing at less than one-half and one-third, respectfully, of the pipes' capacities.

The Concord Disposal Service handles the residential and commercial waste stream in the City of Concord, collecting both solid waste and recycled materials. All solid waste will go to the local landfill called Keller Canyon Landfill. The capacity is at approximately 63,400,000 cubic yards (or 85 percent) and is expected to last until year 2030 (PlaceWorks, 2014). Pacific Gas & Electric Company (PG&E) is the gas and electric provider for the project site. PG&E serves most of Contra Costa County.

3.17.2 REGULATORY SETTING

The City is responsible for most of the wastewater collection system, while treatment service is provided by the CCCSD. CCCSD has sufficient existing infrastructure capacity to provide wastewater treatment service to additional planned development that could be served by the City's system. CCCSD's effluent discharge limit would be sufficient to accommodate wastewater expected to be generated from currently planned growth within the Central service area. However, redevelopment projects within the City could eventually require an amendment to the National Pollution Discharge Elimination System (NPDES) permit to reflect higher effluent volumes. New wastewater collection lines will be needed to serve the Concord Reuse Project, and improvements to transmission mains and pumping stations in North Concord may also be needed. A growing percentage of the wastewater received at the CCCSD treatment plant is treated to a level high enough to enable its reuse for irrigation and other non-potable purposes within the service area.

In 2009, about 200 million gallons a year were treated at the plant and then recycled via a network of transmission facilities serving golf courses, parks, and other landscaped areas. CCCSD is exploring other ways to expand the use of reclaimed Concord 2030 water in order to be better prepared for drought and avoid future diversions of water from the Delta (General Plan, 2015).

3.17.3 IMPACT DISCUSSION

QUESTION A, B, AND E

The Proposed Project would not exceed wastewater treatment requirements as all regulations from the Regional Water Quality Control Board and associated permitted responsibilities of the CCCSD will be followed and the development of eight homes would not result in permit upset conditions. With the addition of eight new residences, the Proposed Project would generate

approximately 6,410 gallons per day of wastewater, which accounts for 0.03 percent of the facility design flow (53,800,000 gallons per day). With an average daily flow rate of 30,400,000 gallons per day (Leavitt, 2015), adequate capacity remains at the treatment facility to serve the Proposed Project. Based on evidence from field inspections and observations of the wastewater conveyance system conducted by the City, it was determined that the Proposed Project's wastewater generation rate of 0.01 cubic feet per second (cfs) would not adversely impact the sanitary sewer system because of the observed available capacity within the system (approximately 29% available capacity in the smaller of the conveyance pipelines) (Parsons, 2015). The Proposed Project would not result in the need for a new water or wastewater treatment facilities or expansion of existing facilities. The existing wastewater treatment facility has adequate capacity to serve the Proposed Project's projected demand and existing obligations. **Less Than Significant.**

QUESTION C

According to City Public Works, the 33-inch storm drain which would receive the storm water generated by the Proposed Project after traversing through the bioswale has adequate capacity and no new municipal facilities would be required to serve the Proposed Project. **Less Than Significant.**

QUESTION D

According to a personal confidential communication with CCSD, there are sufficient water supplies available to serve the Proposed Project from existing entitlements. Accordingly no new facilities or new or expanded entitlements would be needed to meet the water demands of the Proposed Project. **No Impact.**

QUESTION F AND G

The Proposed Project will comply with all federal, state, and local statutes and regulations related to solid waste. The project site is within the service area of the Concord Disposal Service and all solid waste is taken to the Keller Canyon Landfill. The landfill is expected to have available capacity through the year 2030. Utilizing the most conservative daily solid waste generation rate published by CalRecycle (CalRecycle, 2015), each residence is anticipated to generate approximately 12.23 pounds of solid waste per household per day; resulting in a total daily solid waste generation rate of approximately 98 pounds per day for the Proposed Project. With a remaining permitted capacity over 63,000,000 cubic yards, the generation of 98 pounds of solid waste per day (which is roughly equivalent to 1.0 cubic yard of paper and cardboard) from the Proposed Project would not result in the exceedance of the landfill's permitted capacity. **Less Than Significant.**

	Potentially Significant Impact	Less-Than- Significant with Mitigation Incorporation	Less-Than- Significant Impact	No Impact
--	---	---	--	----------------------

3.18 MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:

<p>a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.18.1 IMPACT DISCUSSION

QUESTION A

As discussed in the preceding sections, the Proposed Project has a potential to create short term impacts which could degrade the quality of the environment by adversely impacting biological resources and cultural resources. However, with implementation of the identified mitigation measures, potential impacts would be reduced to a less-than-significant level. The long term effect of the Proposed Project is the overall safety improvement of the site as well as meeting the City's Regional Housing Needs Allocations. **Less Than Significant With Mitigation.**

MITIGATION MEASURES

Bio-1 A qualified biologist shall conduct a pre-construction bird survey for nesting birds within 14 days prior to commencement of construction activities if anticipated to commence during the appropriate nesting season (between February 1 and August 31). The qualified biologist shall document and submit the results of the pre-construction survey in

a letter to CDFW and the City within 30 days following the survey. The letter shall include: a description of the methodology including dates of field visits, the names of survey personnel, a list of references cited and persons contacted, and a map showing the location(s) of any bird nests observed on the project site. If no active nests are identified during the pre-construction survey then no further mitigation is required. Evidence, in the form of a letter report documenting the results of the survey, shall be submitted to the City Planning Department prior to commencement of construction activities.

- Bio-2** If any active nests are identified during the pre-construction survey within the project site, a buffer zone will be established around the nests. A qualified biologist will monitor nests weekly during construction to evaluate potential nesting disturbance by construction activities. The biologist will delimit the buffer zone with construction tape or pin flags within 250 feet of the active nest and maintain the buffer zone until the end of the breeding season or until the young have fledged. Guidance from CDFW will be requested if establishing a 250-foot buffer zone is impractical. Guidance from CDFW will be requested if the nestlings within the active nest appear disturbed.
- Bio-3** Trees anticipated for removal should be removed outside of the nesting season (February 1 and August 31). If trees are anticipated to be removed during the nesting season, a pre-construction survey shall be conducted by a qualified biologist. If the survey shows that there is no evidence of active nests, then the tree shall be removed within ten days following the survey. If active nests are located within trees identified for removal, a 250-foot buffer shall be installed around the tree. Guidance from CDFW will be requested if the 250-foot buffer is infeasible.

QUESTION B

Potential adverse environmental impacts of the Proposed Project, in combination with the impacts of other past, present, and future projects, would not contribute to cumulatively significant effects on the environment with implementation of the above-mentioned mitigation measures. **Less Than Significant With Mitigation.**

MITIGATION MEASURES

Biological Resources

- Bio-1** A qualified biologist shall conduct a pre-construction bird survey for nesting birds within 14 days prior to commencement of construction activities if anticipated to commence during the appropriate nesting season (between February 1 and August 31). The qualified biologist shall document and submit the results of the pre-construction survey in a letter to CDFW and the City within 30 days following the survey. The letter shall include: a description of the methodology including dates of field visits, the names of survey personnel, a list of references cited and persons contacted, and a map showing the location(s) of any bird nests observed on the project site. If no active nests are identified during the pre-construction survey then no further mitigation is required. Evidence, in the form of a letter report documenting the results of the survey, shall be

submitted to the City Planning Department prior to commencement of construction activities.

- Bio-2** If any active nests are identified during the pre-construction survey within the project site, a buffer zone will be established around the nests. A qualified biologist will monitor nests weekly during construction to evaluate potential nesting disturbance by construction activities. The biologist will delimit the buffer zone with construction tape or pin flags within 250 feet of the active nest and maintain the buffer zone until the end of the breeding season or until the young have fledged. Guidance from CDFW will be requested if establishing a 250-foot buffer zone is impractical. Guidance from CDFW will be requested if the nestlings within the active nest appear disturbed.
- Bio-3** Trees anticipated for removal should be removed outside of the nesting season (February 1 and August 31). If trees are anticipated to be removed during the nesting season, a pre-construction survey shall be conducted by a qualified biologist. If the survey shows that there is no evidence of active nests, then the tree shall be removed within ten days following the survey. If active nests are located within trees identified for removal, a 250-foot buffer shall be installed around the tree. Guidance from CDFW will be requested if the 250-foot buffer is infeasible.

Cultural Resource Impacts

- CR-1** Stop Potentially Damaging Work if Archaeological Resources Are Uncovered During Construction, Assess the Significance of the Find, and Pursue Appropriate Management. If previously unrecorded cultural resources (e.g., unusual amounts of shell, animal bone, bottle glass, ceramics, structure/building remains, etc.) are encountered during surveys of previously unexamined area where ground disturbance is planned or during project-related ground-disturbing activities, all ground-disturbing activities shall be halted within a 100-foot radius of the find. A qualified professional archaeologist shall identify the materials, determine their possible significance, and formulate appropriate measures for their treatment, which shall be implemented by the project applicants and their contractors. Potential treatment methods for significant and potentially significant resources may include, but would not be limited to avoidance of the resource through changes in construction methods or project design or implementation of a program of testing and data recovery, in accordance with all applicable federal and state requirements.
- CR-2** Stop Potentially Damaging Work if Human Remains Are Uncovered During Construction, Assess the Significance of the Find, and Pursue Appropriate Management. California law recognizes the need to protect interred human remains, particularly Native American burials and items of cultural patrimony, from vandalism and inadvertent destruction. The procedures for the treatment of discovered human remains are contained in California Health and Safety Code §7050.5 and §7052 and California Public Resources Code §5097. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all such activities within a 100-foot radius

of the find shall be halted immediately and the project applicants' designated representative shall be notified. The project applicants shall immediately notify the county coroner and a qualified professional archaeologist. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). The project applicant or its appointed representative and the professional archaeologist shall contact the Most Likely Descendent (MLD), as determined by the NAHC, regarding the remains. The MLD, in cooperation with the property owner and the lead agencies shall determine the ultimate disposition of the remains.

QUESTION C

After the implementation of design features, municipal code requirements, and standard conditions of approval, there would be no environmental effects caused by the Proposed Project that will cause a substantial adverse effect on human beings, either directly or indirectly. **Less Than Significant.**

SECTION 4.0 – PREPARERS

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Deputy Project Manager	Kassandra Dickerson
Technical Staff	Erin Quinn, Air Quality Specialist
	Charlane Gross, Archaeologist
	Peter Bontadelli, Senior Biologist
	Nicholas Bonzey, Biologist
	Dana Hirschberg, Senior Graphics Specialist
	Glenn Mayfield, Graphics Specialist

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APPENDICES



APPENDIX A

TREE PRESERVATION REPORT



**Tree Preservation Report
Autumn Brook Development
1890 Risdon Road
Concord, CA**

October 16, 2014



Prepared for:

**Zheng Tan
Property Owner**

By

**John C Traverso
BCMA Arborist #0206-B**

3354 Freeman Rd, · Walnut Creek, CA 94595, Telephone (925) 930-7901 · Fax (925) 930-0205

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Tree Inventory & Protection Map (Grading & Drainage Plan)

Tree Exhibit & Demolition Plan

Preliminary Landscape Plan

Introduction

The applicants propose to build a subdivision consisting of 8 residential homes to be located off of Risdon Road just west of the Contra Costa County Flood Control Channel. The site is relatively level with a mixture of native and non native trees, with the native trees located mostly around the perimeter of the property. A total of 42 trees were inventoried, and I anticipate that 18 of those trees will need to be removed to accommodate the proposed improvements. This report shall address the proposed tree encroachments, and make recommendations for tree preservation.

Assignment

Per the City of Concord's Tree Protection Ordinance, this arborist report shall include the following.

1. Tag, identify, and measure trunk diameters of all "Protected Trees" at 4.5' above grade. Protected trees are the following listed native trees with a single trunk DBH of 12" or more, or a multiple trunk native tree with the aggregate DBH adding up to 12" or more: *Blue Oak, Valley Oak, Coast Live Oak, California Bay, California Buckeye, and California Sycamore.*

Or other tree species with a trunk diameter of at least 24" DBH (single trunk) or a multi-stemmed tree where the sum of all stems add up to 24". **NOTE:** unless specifically designated a "Heritage Tree" by action of the Planning Commission, Eucalyptus, Acacia, Monterrey Pine, Palm, and Privet are not considered protected trees.

Or a tree with at least a 6" DBH that is located within the structural setback of creeks or streams (Creek and Riparian Habitat Protection 122-802).

Or any tree or group of trees which has a relationship to an event of historical significance or is of public interest and which has been designated by action of the Planning Commission as a heritage tree.

2. Locate driplines and tree #'s on the site map
3. Identify tree health and structural condition.
4. Based on age, condition, and proposed site improvements, make recommendations for tree preservation.

Assumptions & Limitations

This report is based on information gathered from my site visits in April and October of 2014, and the "Preliminary Grading & Drainage Plans" by P/A Design Resources, Inc. dated October 8, 2014. It was assumed the trees and proposed improvements were accurately surveyed.

The health and structure of the trees were assessed visually from ground level. No drilling, root excavation, or aerial inspections were performed. Internal or non-detectable defects may exist, and could lead to part or whole tree failures. Due to the dynamic nature of trees and their environment, it is not possible for arborists to guarantee that trees will not fail in the future.

Tree Inventory and Assessment Table

#’s: Trees were tagged with square aluminum tags with a # sequence of 1-42. The path of numbering order wraps around the property in a clockwise direction starting at the right front along Risdon Rd.. NOTE- 2 oaks were tagged near the southeast corner of the property on the east site of the canal

DBH = Trunk diameters were based on circumference measured at 4.5' above grade.

Condition Rating

“Dead”: Dead or declining beyond chance of recovery.

“Poor” Condition: Stunted or declining canopy, poor foliar color, possible disease or insect issues. Severe structural defects that may or may not be correctable. Usually not a reliable specimen for preservation.

“Fair” Condition: Fair to moderate vigor. Minor structural defects that can be correctable. More susceptible to construction impacts than a tree in good condition.

“Good” Condition: Good vigor, and color, with no obvious problems or defects. Generally more resilient to impacts.

“P”: Indicates tree is considered a protected tree per the city’s ordinance.

Tag #’s	Species	DBH in “	Heath	Structure	Dripline				Comments	Const. Impact	“P”	Action Plan
					N	E	S	W				
1	Valley Oak <i>Quercus lobata</i>	13	Fair	Poor	15	8	10	15	Located in front drainage ditch. Topped by PG&E. Drainage ditch to be backfilled and walkway installed.	High	P	Remove
2	Valley Oak <i>Quercus lobata</i>	16.5, 19	Fair	Fair	30	15	15	25	Located in front drainage ditch. Topped by PG&E. Drainage ditch to be backfilled and walkway installed.	High	P	Remove

Autumn Brook Tree Preservation

October, 16, 2014

Tag #s	Species	DBH in "	Heath	Structure	Dripline				Comments	Const. Impact	"P"	Action Plan
					N	E	S	W				
3	Stone Pine <i>Pinus pinea</i>	21	Good	Poor	15	10	10	30	Tree has a 30 deg. lean west towards tel. pole. Poor specimen.	Moderate to high.		Remove
4	Black Locust <i>Robina pseudoacacia</i>	9.5, 6.5	Poor	Poor	10	10	0	10	90% dead. Within proposed building footprint.	High		Remove
5	Mulberry <i>Morus alba</i>	17	Poor	Poor	15	10	20	20	Canopy in severe decline. Within proposed building footprint.	High		Remove
6	Mulberry <i>Morus alba</i>	28	Poor	Poor	30	25	25	20	Canopy in severe decline. Within proposed building footprint.	High	P	Remove
7	Bailey Acacia	19	Fair	Poor	20	25	20	15	Poorly structured. Within proposed building footprint.	High		Remove
8	Valley Oak <i>Quercus lobata</i>	5, 6	Good	Poor	10	8	8	6	Included, co-dominant leaders at base. Within driveway entrance.	High		Remove
9	Western Cottonwood <i>Populus fremontii</i>	10, 8, 6	Poor	Poor	5	5	5	5	80% dead. Within driveway entrance.	High	P	Remove

Tag #s	Species	DBH in "	Heath	Structure	Dripline				Comments	Const. Impact	"P"	Action Plan
					N	E	S	W				
10	Black Locust <i>Robina pseudoacacia</i>	8, 6, 7, 7, 5,, 5	Fair	Poor	12	12	12	12	10% dieback in upper canopy, included co-dominant leaders. Very close to C3 treatment area, where no work is to occur.	Low	P	Save
11	Valley Oak <i>Quercus lobata</i>	6	Good	Good	6	6	6	6	Under PG&E wires, and within driveway entrance. Will be topped in future if overhead wires are to remain.			Remove
12	Monterey Pine <i>Pinus radiata</i>	22	Poor	Poor	15	15	15	15	Dead. Within proposed lane.	High		Remove
13	Black Locust <i>Robina pseudoacacia</i>	7, 7.5, 5.5	Poor	Poor	15	10	0	6	15% dieback, co-dominant leaders at base of tree. At top of canal, within riparian structural setback. May be left as a nature snag for wildlife.	Low	P	Save <i>Nature snag</i>
14	Black Locust <i>Robina pseudoacacia</i>	7, 5, 4	Fair	Poor	5	10	5	10	Included co-dominant leaders at base. At top of canal.	Low	P	Save
15	White Poplar <i>Populus alba</i>	13	Good	Fair	25	15	10	10	5 degree lean east at top of canal within riparian structural setback.	Low	P	Save

Tag #s	Species	DBH in "	Heath	Structure	Dripline				Comments	Const. Impact	"P"	Action Plan
					N	E	S	W				
16	Black Locust <i>Robina pseudoacacia</i>	4, 4, 3, 3, 3	Poor	Poor	8	8	8	8	80% dead, with included leaders at base. At top of canal within riparian structural setback. May be left as a nature snag for wildlife.	Low	P	Save <i>Nature snag</i>
17	Black Locust <i>Robina pseudoacacia</i>	5.5, 3.5, 2	Poor	Poor	5	5	5	5	Dead, at top of canal within riparian structural setback. May be left as a nature snag for wildlife.	Low	P	Save <i>Nature snag</i>
18	Black Locust <i>Robina pseudoacacia</i>	4, 4, 3.5, 3.5, 2, 2	Poor	Poor	3	5	8	5	80% dead, at top of canal within riparian structural setback. May be left as a nature snag for wildlife.	Low	P	Save <i>Nature snag</i>
19	Valley Oak <i>Quercus lobata</i>	16	Good	Good	12	15	25	12	At top of canal within riparian structural setback.	Low	P	Save
20	Valley Oak <i>Quercus lobata</i>	6, 4.5, 4, 2	Good	Fair	8	8	8	8	Basal spouts. At top of canal within riparian structural setback.	Low	P	Save
21	Modesto Ash <i>Fraxinus v. Modesto</i>	39	Good	Good	33	30	35	30	Large tree in middle of property. Within proposed lane.	High	P	Remove
22	Valley Oak <i>Quercus lobata</i>	29	Good	Good	0	15	30	30	On east side of canal within riparian structural setback.	Low	P	Save

Autumn Brook Tree Preservation

October, 16, 2014

Tag #s	Species	DBH in "	Heath	Structure	Dripline				Comments	Const. Impact	"P"	Action Plan
					N	E	S	W				
23	Valley Oak <i>Quercus lobata</i>	10.5, 13.5	Good	Fair	0	0	25	25	On east side of canal within riparian structural setback.	Low	P	Save
24	Valley Oak <i>Quercus lobata</i>	10, 11, 13	Good	Fair	20	15	20	25	Co-dominant leaders at base. Autumn Brook Lane ends at edge of dripline.	Moderate	P	Save
25	Valley Oak <i>Quercus lobata</i>	10.5 4	Good	Good	22	22	25	25	In depression swale along southwest edge of property. Grade limits and drainage will be within dripline 8' & 10' from base of tree.	Moderate - high	P	Save
26	Italian Buckthorn <i>Rhamnus alaternus</i>	4, 5	Good	Good	7	7	7	7	Large woody shrub. Proposed grade limits 7' from base of shrub.	Moderate		Save
27	Valley Oak <i>Quercus lobata</i>	3, 4, 5.5	Good	Fair	8	8	8	8	Co-dominant leaders at the base. Proposed grade limits 5' from base of tree.	Moderate - high	P	Save
28	Fruiting Plum <i>Prunus sp.</i>	7, 6, 6, 5, 4, 5	Good	Fair-poor	15	15	15	15	Old dense tree with impenetrable foliage to the ground. Within building footprint.	High	P	Remove
29	Fig	6	Good	Fair	15	15	15	15	Dense low branching. Within building footprint.	High		Remove

Autumn Brook Tree Preservation

October, 16, 2014

Tag #s	Species	DBH in "	Heath	Structure	Dripline				Comments	Const. Impact	"P"	Action Plan
					N	E	S	W				
30	Valley Oak <i>Quercus lobata</i>	12, 7, 5, 4	Good	Fair	10	20	15	8	Co-dominant leaders at base. Proposed grade limits 8' from base of tree.	Moderate to high.	P	Save
31	Valley Oak <i>Quercus lobata</i>	14.5	Good	Good	15	15	15	20	Co-dominant leaders at 7'. Proposed grade limits 12' from base of tree.	Moderate	P	Save
32	Mexican Fan Palm <i>Washingtonia robusta</i>	18" 25Ft. of clear trunk	Good	Fair	5	5	5	5	Dead fronds still clinging to trunk from ground to canopy. 20' away from west fence line. Within proposed building footprint.	High		Remove
33	Valley Oak <i>Quercus lobata</i>	10	Good	Good	10	10	10	10	20' off west fence. At edge of building footprint.	High		Remove
34	Valley Oak <i>Quercus lobata</i>	5, 4.5, 2	Good	Fair	10	6	5	5	Comprised of basal sprouts. 10' off west fence. Proposed grade limits 6' from base of tree.	Moderate to high		Save
35	Valley Oak <i>Quercus lobata</i>	7	Good	Fair-poor	8	8	7	0	Sweeping bend in trunk. Growing from under west fence. Proposed grade limits 15' from base of tree.	Low		Save
36	Valley Oak <i>Quercus lobata</i>	24	Good	Fair	15	20	30	30	Co-dominant stems at 10'. 14' from west fence. Proposed grade limits 7' from base of tree.	Moderate to high.	P	Save

Autumn Brook Tree Preservation

October, 16, 2014

Tag #s	Species	DBH in "	Heath	Structure	Dripline				Comments	Const. Impact	"P"	Action Plan
					N	E	S	W				
37	Valley Oak <i>Quercus lobata</i>	18	Good	Fair-poor	0	25	0	0	One-sided canopy with a 15 degree lean to the east. Within building footprint.	High	P	Remove
38	Valley Oak <i>Quercus lobata</i>	15	Good	Fair	0	0	30	30	One-sided sweeping lean to the southwest. Proposed grade limits 9' from base of tree.	Moderate to high.	P	Save
39	Valley Oak <i>Quercus lobata</i>	7	Good	Fair	15	15	0	0	On-sided sweeping lean to the northeast. Proposed grade limits 8' from base of tree.	Moderate to high.		Save
40	Western Cottonwood <i>Populus fremontii</i>	11, 10	Poor	Poor	0	0	0	20	Declining canopy with a 20 degree lean over neighbors property to the west. Proposed grade limits to be 13' from base of tree.	Moderate		Save
41	Valley Oak <i>Quercus lobata</i>	13	Fair	Fair	25	25	12	0	Tip decline in upper canopy (10%). Within building footprint.	High	P	Remove
42	Valley Oak <i>Quercus lobata</i>	15	Good	Good	30	30	20	30	Co-dominant leaders at 25'. Drainage proposed 5' from base of tree.	High	P	Save

Discussion

Trees #25, 26, 27, 30, 31, 34, 35, 36, 38, 39, 40, & 42 to be saved, are all very close to the proposed grade limits and drainage system, and most will have their driplines encroached. Although impacts could potentially be high for some of these trees, the fact that they are part of a grove that we can protect as a large canopy unit, will go a long way in limiting impact and allowing them to be more resilient.

Fencing off at the grade limits and mulching prior to any grading, will be critical to protect the remaining root zone. Grading and drainage installation within the driplines will need to be monitored by an arborist to limit the damage to the portion of the root zones that cannot be protected.

Trees #10, & 13 - 18 (black locust & 1 poplar) are in various stages of decline, however, they are well clear of the development at the top of canal bank, and are providing a good habitat for birds and wildlife. These trees have been indicated for preservation as "Nature Snags".

Recommendations

Pre-demolition & grading

- Remove trees 1-9, 11, 12, 21, 28, 29, 32, 33, 37, & 41, and clear understory brush from trees to be saved. Use resulting chipper mulch as root protection under trees to be saved (#'s 10, 13-20, 22-27, 30, 31, 34, 35, 36, 38, 39, 40, & 42).
- Project arborist to establish pruning recommendations for trees to be saved, primarily for clearance issues, and to clean crowns of deadwood. Thinning of the canopies is not recommended as the trees will need food supply from the foliage to maintain resiliency.
- Establish a TPZ "Tree Protection Zone" around trees to be saved by erecting 6' chain-link fencing around the trees or groves of trees as indicated on tree protection plan in arborist report. Fencing contractor shall meet with project arborist and contractor to confirm fencing locations.
- TPZ's shall be mulched with chipper mulch to a depth of 4" as directed by the project arborist. Mulch shall be kept at least 12" back from base of trunks to avoid holding moisture against trunk tissue.
- Contractor shall have a pre-construction meeting with project arborist.

Grading, drainage, and construction phase

- Contractor shall notify project arborist to be on site during grading, trenching, or other work to occur within tree driplines and most importantly when working near trees 24-37, 30, 31, 34, 35, 36, 38, 39, 40, & 42.
- At no time shall the TPZ fencing be encroached, adjusted, or removed, without consulting with the project arborist.
- TPZ's shall be kept clean and void of construction materials, and debris. At no time shall equipment, supplies, fuels or other toxic materials be stored within the tree protection zones.
- TPZ fencing shall be kept upright and sturdy until construction is completed and the removal of the fencing has been released by the project arborist.

Landscaping phase

- Avoid trenching or grade changes within driplines.
- Avoid planting or irrigating within 10' of any native oak.
- Plant only drought tolerant oak compatible species, that are well spaced within driplines of oaks and at least 10' back from trunks.
- Use individual plant dedicated irrigation such as drip within oak driplines. Avoid overhead irrigation.
- Note: Proposed "Preliminary Landscape Plan" dated 10/8/14 is appropriate.
- Recommend having landscape contractor, meet with project arborist to go over tree protection measures prior to installation.

Please feel free to contact me if there are any questions or concerns.

Respectfully,

A handwritten signature in black ink that reads "John C. Traverso". The signature is written in a cursive style with a long horizontal line extending from the end of the name.

John C Traverso
ISA Board Certified Master Arborist #0206-B
ISA Qualified Tree Risk Assessor #994
WCISA CTW #996

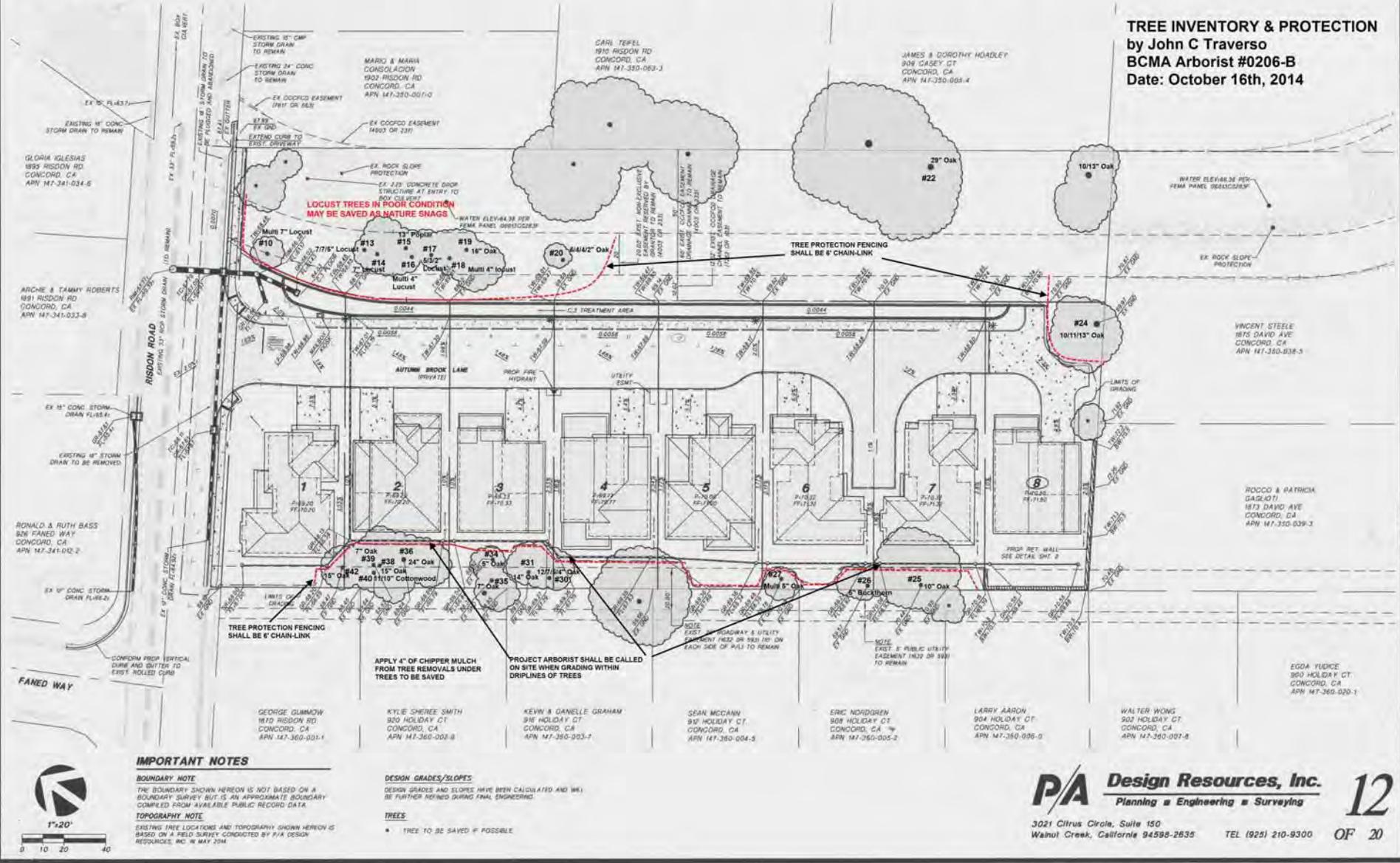
AUTUMN BROOK

CONCORD, CALIFORNIA

PRELIMINARY GRADING & DRAINAGE PLAN

OCTOBER 8, 2014

TREE INVENTORY & PROTECTION
 by John C Traverso
 BCMA Arborist #0206-B
 Date: October 16th, 2014



IMPORTANT NOTES

BOUNDARY NOTE
 THE BOUNDARY SHOWN HEREON IS NOT BASED ON A BOUNDARY SURVEY BUT IS AN APPROXIMATE BOUNDARY COMPILED FROM AVAILABLE PUBLIC RECORD DATA.

TOPOGRAPHY NOTE
 EXISTING TREE LOCATIONS AND TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD SURVEY CONDUCTED BY P.A. DESIGN RESOURCES, INC. IN MAY 2014.

DESIGN GRADES/SLOPES
 DESIGN GRADES AND SLOPES HAVE BEEN CALCULATED AND WILL BE FURTHER REFINED DURING FINAL ENGINEERING.

TREES
 * TREE TO BE SAVED IF POSSIBLE

PA Design Resources, Inc.
 Planning • Engineering • Surveying

3021 Citrus Circle, Suite 150
 Walnut Creek, California 94598-2635 TEL (925) 210-9300

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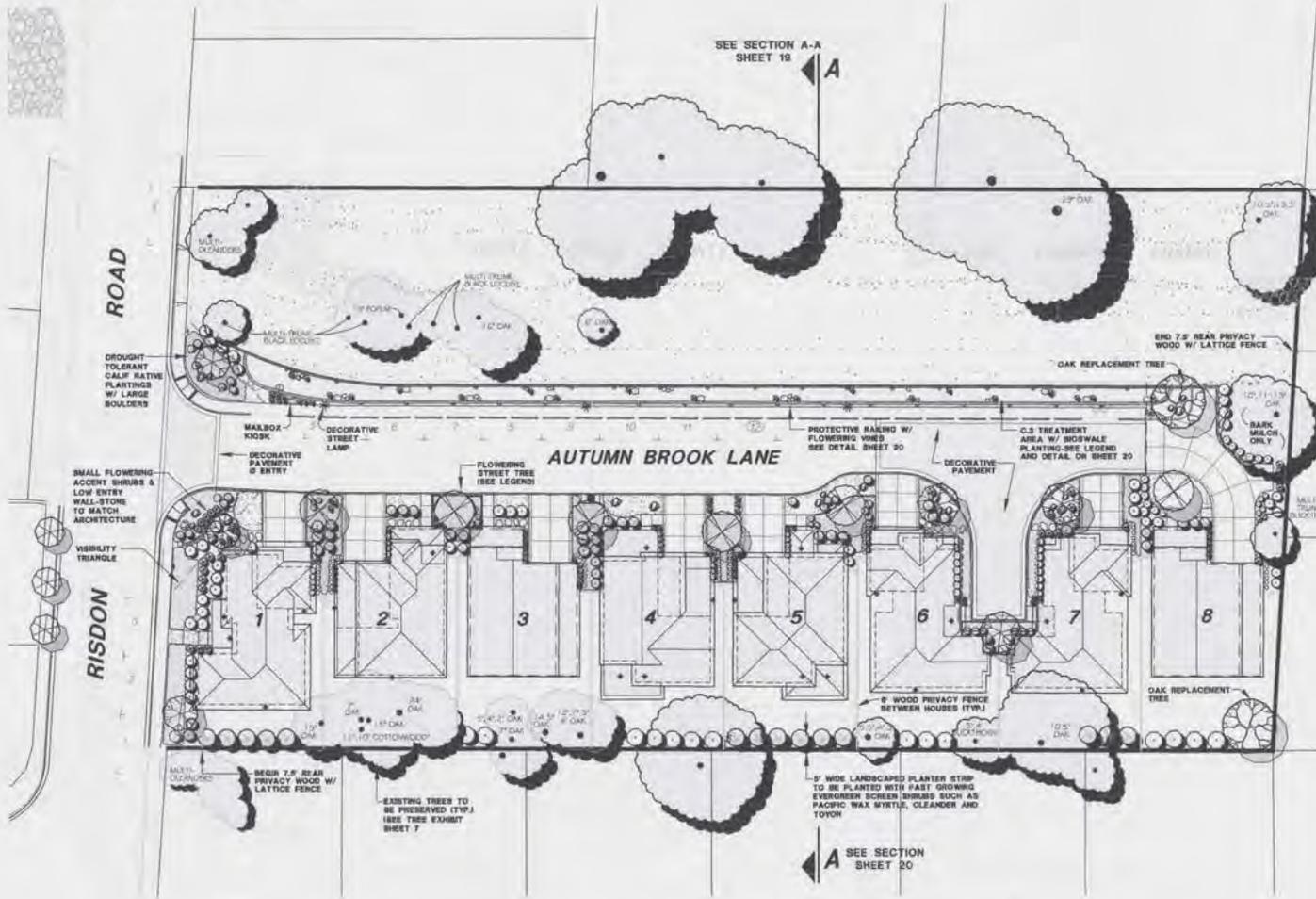
Project: 14-0101 Autumn Brook 88 Concord 03/09-10 14-01-216, P.A. Design, 18102118 03/09/14 P.A. Design, Inc., 714 Sutter Street, Suite 150, Walnut Creek, CA 94598

AUTUMN BROOK

CONCORD, CALIFORNIA

PRELIMINARY LANDSCAPE PLAN

OCTOBER 8, 2014



KEY PRELIMINARY PLANT PALETTE	
TREES	
	LAGERSTROMIA I. DYNAMITE - RED CRAFT MYRTLE*
	QUERCUS OCCIDENTALIS - WESTERN REDBUD (STD.)*
	QUERCUS AGRIFOLIA - COAST LIVE OAK
	NERIUM OLEANDER WHITE - STANDARD WHITE OLEANDER
SHRUBS	
	AGAPANTHUS PETER PAN - DWARF LILY OF THE VALLEY
	CORDYLINE T. COMSON PRIGMY - RED JAPANESE BARBERS'
	CEANOTHUS M. VALLEY VIOLET - DWARF CALIFORNIA URUB
	COLCHICUM P. SUNSET GOLD - BREATH OF HEAVEN
	DELLOSYLOGETA - FOREKNIGHT LILY
	FESTUCA G. DUTCH BLUE - BLUE FESCUE
	HEMEROCALLIS H. YELLOW - EVERGREEN DAYLILY
	HETEROCARPUS ARBUSCULA - TOTOR
	IPOMOEA LIVARIA ECHO MANGO - TONGUE LILY
	DROPE. MACDONI BIG BLUE - BIG BLUE DEUTER
	MYRICA CALIFORNICA - PACIFIC WAX MYRTLE
	HARDINA D. COMPACTA - COMPACT HEAVY BAMBDO
	NERIUM OLEANDER WHITE - WHITE OLEANDER
	NERIUM OLEANDER TETUS PINK - DWARF OLEANDER
	PHORMIUM T. AMAZING RED - DWARF NEW ZEALAND FLAX
	PTERISPORUM T. VARIEGATA - VARIEGATED COBBA
	ROSA FLOWER CARPET PINK SUPREME - PINK CARPET ROSE
	SALVIA LEUCANTHA - MEXICAN SAGE
	TULBASHA V. SILVER LACE - VARIEGATED SOCIETY GARLIC
GROUNDCOVERS	
	ARCTOSTAPHYLOS UVA-URSI CARPET - CARPET MANZANITA
	NASSARIA PHLOXOIDES - MOON STRANDBERRY
	GAZANIA DWARZE ORANGE - ORANGE GAZANIA
	VINCA MINOR BOWLES - DWARF PERIWINKLE
	MYRIOPHYLLUM PARVIFOLIUM PINK
VINES	
	FICUS PUMILA - CREEPING FIG
	SOLANUM JASMINOIDES - WHITE POTATO VINE
	CYSTOTHEMA CALISTEGOIDES - VIOLET TRUMPET VINE
BOSWALE C-3 PLANTING	
	CAREX spp. - SEDGE
	JUNCOIS spp. - BUSH
	IRIS DOUGLASSIANA - DOUGLAS IRIS
MOSS ROCK BOULDERS	
	12" - 36" DIAMETER
EXISTING TREE	
	EXISTING TREE TRUNK SURVEYED & IDENTIFIED TO BE SAVED IF POSSIBLE
FENCING LEGEND	
	6' HIGH WOOD PRIVACY FENCING (7.5' HIGH IN REAR YARDS ADJACENT TO NEIGHBORS)
	42" BLACK TUBULAR STEEL FENCING (AROUND C-3 WATER QUALITY TREATMENT AREA)

- NOTES:**
- ALL FRONTYARD PLANTING AREAS, INCLUDING THE PRIVATE LANE AND C-3 EASEMENT, SHALL BE IRRIGATED AND MAINTAINED BY THE HOA. PLANTS SHALL BE IRRIGATED BY AN AUTOMATIC SPRINKLER SYSTEM UTILIZING MATCHED, LOW PRECIPITATION HEADS ALONG WITH DGP IRRIGATION AND INCLUDE AN AUTOMATIC MULTI-PROGRAMMABLE CONTROLLER EQUIPPED WITH RAIN SENSORS AND AN AUTOMATIC SHUT-OFF DEVICE.
 - ALL PLANTING AREAS SHALL RECEIVE A 3" LAYER OF 1/4" - 3/4" BARK MULCH. BARK TO BE KEPT CLEAR OF TRUNKS TO AVOID ROOT ROT.
 - PLANTING SIZE: STREET TREES SHALL BE - 24" BOX, SHRUBS - 5 GALLON, ACCENT PERENNIALS GROUNDCOVERS AND VINES - 1 GALLON.
 - PLANT MATERIAL AND IRRIGATION DESIGN SHALL COMPLY WITH THE CALIFORNIA WATER EFFICIENCY STANDARDS.
 - SEE SHEET 3 FOR MAILBOX HOOK AND DECORATIVE STREET LAMP DETAILS
 - SEE SHEET 20 FOR FENCING DETAILS
 - SEE SHEET 7 FOR THE LOCATION OF ALL EXISTING TREES ON THE SITE WITH A TRUNK DIAMETER OF 4" OR GREATER (MEASURED 4-1/2' ABOVE GRADE). TREES ARE IDENTIFIED BY SIZE AND SPECIES AND WHETHER THEY ARE TO BE REMOVED OR PRESERVED, FOR SPECIFIC CONDITION AND RECOMMENDATION OF INDIVIDUAL TREES SEE ARBORIST REPORTS



PA Design Resources, Inc.
 Planning • Engineering • Surveying

3021 Citrus Circle, Suite 180
 Walnut Creek, California 94598-2635 TEL 925/210-9300

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APPENDIX B

DESIGN PLANS

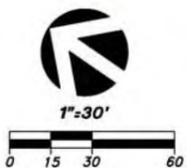
Autumn Brook

CITY OF CONCORD, CALIFORNIA

OCTOBER 8, 2014

REVISED: DECEMBER 23, 2014

REVISED APRIL 8, 2015



PA Design Resources, Inc.
Planning ■ Engineering ■ Surveying

3021 Citrus Circle, Suite 150
Walnut Creek, California 94598-2635 TEL (925) 210-9300

AUTUMN BROOK • SUBDIVISION 9392

A QUALITY SINGLE - FAMILY DETACHED RESIDENTIAL PROJECT
CITY OF CONCORD, CALIFORNIA

RE-ZONING, PLANNED DEVELOPMENT USE PERMIT, MINOR USE PERMIT, DESIGN REVIEW, MAJOR SUBDIVISION / TENTATIVE MAP, STORMWATER CONTROL PLAN, TREE REMOVAL AND MINOR EXCEPTION

DATE: OCTOBER 8, 2014

REVISED: DECEMBER 23, 2014

REVISED: APRIL 8, 2015

GENERAL NOTES

- LEGAL PROPERTY OWNER / APPLICANT**
ZHENG TAN
1233 PINE CREEK WAY, UNIT A
CONCORD, CA 94520-3642
CONTACT: ZHENG TAN
TEL: (925) 219-3486
- ARCHITECT**
HUNT HALE JONES
444 SPEAR STREET, SUITE 105
SAN FRANCISCO, CA 94109-1693
CONTACT: RICHARD HUNT
TEL: (415) 512-1300
- PLANNERS, ENGINEERS & SURVEYORS**
P/A DESIGN RESOURCES, INC.
3021 CITRUS CIRCLE, SUITE 150
WALNUT CREEK, CA 94598-3462
CONTACT: JIM PARSONS
TEL: (925) 210-9300
- GEOTECHNICAL ENGINEER**
ENGEQ INCORPORATED
2401 CROW CANYON ROAD, SUITE 200
SAN RAMON, CA 94583-1545
CONTACT: RAY SKINNER
TEL: (925) 838-1600
- ARBORIST**
TRAVERSO TREE SERVICE
3354 FREEMAN ROAD
WALNUT CREEK, CA 94595-1310
CONTACT: JOHN TRAVERSO
TEL: (925) 930-7901
- BIOLOGICAL CONSULTANT**
MARYLEE GUINON, LLC
354 BOHEMIAN HIGHWAY
FREESTONE, CA 95472
CONTACT: MARYLEE GUINON
TEL: (707) 874-9663
- TOTAL SITE ACRES**
GROSS AREA: 87,991.2± OR 2.02± AC (PER COUNTY ASSESSOR)
NET DEVELOPABLE AREA: 36,676± SF OR 0.84± AC
- ASSESSOR'S PARCEL NUMBER**
APN: 147-350-003
- CITY OF CONCORD
GENERAL PLAN LAND USE DESIGNATION**
LD - LOW DENSITY RESIDENTIAL
(2.5 to 10 du/net acre)
- EXISTING LAND USE**
SINGLE-FAMILY RESIDENTIAL
- INTENDED LAND USES**
SINGLE-FAMILY RESIDENTIAL
PARCEL A - TO BE DEDICATED TO THE CITY OF CONCORD FOR RISDON ROAD RIGHT-OF-WAY, INCLUDING MAINTENANCE RESPONSIBILITIES.
PARCEL B - TO BE OWNED BY THE AUTUMN BROOK LANE HOA SUBJECT TO THE CCCFCD EASEMENT.
- PROPOSED SUBDIVISION**
8 SINGLE-FAMILY RESIDENTIAL LOTS
- ALLOWABLE DENSITY UNDER THE GENERAL PLAN**
2.5 to 10 du/net acre x 0.84 acres = 2.11 to 8.40 units
- EXISTING CITY OF CONCORD ZONING DISTRICT**
R-7, SINGLE-FAMILY RESIDENTIAL
- PROPOSED CITY OF CONCORD ZONING DISTRICT**
RL, LOW DENSITY RESIDENTIAL DEVELOPMENT
- PUBLIC UTILITIES**
SOURCE OF WATER SUPPLY: CONTRA COSTA WATER DISTRICT
WATER PRESSURE ZONE: ZONE 2
SEWAGE DISPOSAL: CITY OF CONCORD
GAS & ELECTRIC: PACIFIC GAS & ELECTRIC COMPANY
TELEPHONE SERVICE: AT&T
CABLE TELEVISION: ASTOUND

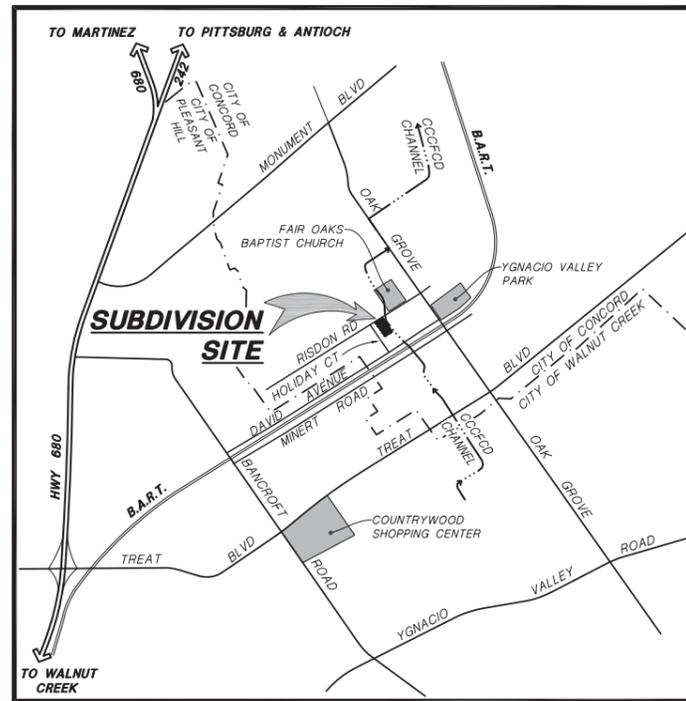
- PUBLIC SERVICES**
FIRE PROTECTION: CONTRA COSTA COUNTY FIRE PROTECTION DISTRICT
POLICE SERVICE: CONCORD POLICE DEPARTMENT
SCHOOL DISTRICTS: MT. DIABLO UNIFIED SCHOOL DISTRICT
• YGNACIO VALLEY ELEMENTARY (GRADES K-5)
• OAK GROVE MIDDLE SCHOOL (GRADES 6-8)
• YGNACIO VALLEY HIGH SCHOOL (GRADES 9-12)
PARK SERVICES: CITY OF CONCORD
EAST BAY REGIONAL PARK DISTRICT
MT. DIABLO STATE PARK
- TOPOGRAPHY**
EXISTING TREE LOCATIONS AND TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD SURVEY CONDUCTED BY P/A DESIGN RESOURCES, INC. IN MAY 2014.
- BASIS OF ELEVATION**
ELEVATIONS SHOWN HEREON ARE BASED ON MONUMENT NUMBER 7645, SET 2/20/76 REF. CONTRA COSTA COUNTY R/W DWG NUMBER ED-10086 WITH ELEVATION OF 67.27 NGVD 29, 12" BRASS DISC, STAMPED SDMD 1 7645
- BASIS OF BEARINGS**
BASIS OF BEARINGS IS BASED ON THE CONTRA COSTA COUNTY R/W MAP ED-10086 TAKEN BETWEEN SDMH #1 7645 AND SDMH #1 7646
- SUBDIVISION BOUNDARY**
THE BOUNDARY LINE SHOWN HEREON IS NOT BASED UPON A FIELD SURVEY, BUT IS AN APPROXIMATE BOUNDARY COMPILED FROM AVAILABLE PUBLIC RECORD DATA.
- CONTOUR INTERVALS**
EXISTING: 2 FOOT INTERVALS
DESIGN: SPOT ELEVATIONS
- STREETS**
RISDON ROAD TO BE WIDENED AND DEDICATED TO THE PUBLIC FOR MAINTENANCE PURPOSES. THE PRIVATE ACCESS LANE (EASEMENT) "AUTUMN BROOK LANE" TO BE PRIVATE AND OWNED AND MAINTAINED BY THE HOA.
- EXISTING SITE AVERAGE SLOPE**
72.26 - 66.97 / 425.0 = 1.24% AVERAGE SLOPE
- EARTHWORK QUANTITIES**
3,500± CUBIC YARDS EXPORT
- PROPOSED LOT SIZES**

	GROSS	NET
LOT 1	8,193 ± SF	4,397 ± SF
LOT 2	6,915 ± SF	3,653 ± SF
LOT 3	6,885 ± SF	3,991 ± SF
LOT 4	6,885 ± SF	3,964 ± SF
LOT 5	6,885 ± SF	4,073 ± SF
LOT 6	7,327 ± SF	3,957 ± SF
LOT 7	7,325 ± SF	3,954 ± SF
LOT 8	7,350 ± SF	6,779 ± SF
- PROPOSED PERCENT LOT COVERAGE TABLE**

	TOTAL GROUND FLOOR AREA	NET LOT AREA	PERCENT OF NET LOT COVERAGE	PERCENT OF LANDSCAPE COVERAGE	PRIVATE USEABLE OPEN SPACE AREA
LOT 1	1,850	4,397 ± SF	42.07%	53.59%	1,122± SF
LOT 2	1,766	3,653 ± SF	48.34%	48.40%	1,762± SF
LOT 3	1,766	3,991 ± SF	44.25%	48.67%	1,761± SF
LOT 4	1,775	3,964 ± SF	44.78%	49.18%	1,502± SF
LOT 5	1,775	4,073 ± SF	43.58%	50.36%	1,541± SF
LOT 6	1,850	3,957 ± SF	46.75%	48.39%	1,678± SF
LOT 7	1,850	3,954 ± SF	46.79%	48.35%	1,679± SF
LOT 8	1,766	6,779 ± SF	26.05%	56.68%	1,857± SF
- PROPOSED PARKING SPACES**

	PROPOSED COVERED / UNCOVERED		PROPOSED COVERED / UNCOVERED
LOT 1	2 / 2	LOT 5	2 / 2
LOT 2	2 / 2	LOT 6	2 / 2
LOT 3	2 / 2	LOT 7	2 / 2
LOT 4	2 / 2	LOT 8	2 / 2

NOTE: PLAN PROVIDES 8 FULL SIZE (9' X 23') GUEST PARKING SPACES ON THE PROJECT AUTUMN BROOK LANE (PRIVATE) AND 4 PUBLIC PARKING SPACES ALONG THE RISDON ROAD FRONTAGE.



- IMPORTANT NOTES**
 - THERE ARE NO EXISTING AREAS SUBJECT TO INUNDATION OR PONDING WITHIN THE PROPOSED SUBDIVISION. THE SUBJECT DEVELOPMENT AREA CAN BE FOUND ON THE FEMA FLOOD INSURANCE RATE MAP (FIRM), PANEL 283 OF 602 MAP NUMBER 06013C0283F AND IS LOCATED IN AN AREA DESIGNATED AS "ZONE X".
THE EXISTING CONTRA COSTA COUNTY FLOOD CONTROL CHANNEL IS ALSO SHOWN SEPARATELY ON THIS SAME FEMA PANEL AND THE CHANNEL ITSELF IS DESIGNATED AS "ZONE AE".
THE EXISTING FLOOD CONTROL CHANNEL HAS A RANGE OF ELEVATIONS FROM 67 AT THE NORTH END OF THE CHANNEL AT THE EXISTING DROP STRUCTURE AND ENTRY TO THE RISDON ROAD BOX CULVERT TO ELEVATION 69 AT THE SOUTH END OF THE PROPERTY. THESE FEMA FLOOD ELEVATIONS ARE BASED ON NAVD 1988. FOR CONVERSION TO NGVD 1929 ELEVATIONS THE DATUM DIFFERENCE IS -2.62 FEET. THEREFORE, THE FLOOD ELEVATION OF 67 WOULD BE 64.38 AND FLOOD ELEVATION OF 69 WOULD BE 66.38. THE PROPOSED FINISH FLOOR ELEVATIONS ARE 70.20 FOR LOT 1 AND 71.50 FOR LOT 8. SO THE PROPOSED FINISH FLOOR ELEVATION FOR LOT 1 WOULD BE 5.82 FEET ABOVE THE FLOOD ELEVATION AND THE PROPOSED FINISH FLOOR ELEVATION FOR LOT 8 WOULD BE 5.12 FEET ABOVE THE FLOOD ELEVATION.
 - THERE ARE NO AREAS TO BE USED FOR PUBLIC PURPOSES, EXCEPT FOR THE RIGHT-OF-WAY DEDICATION (PARCEL 'A') FOR RISDON ROAD.
 - THE PROJECT IMPROVEMENTS ARE PROPOSED TO BE CONSTRUCTED IN ONE PHASE.
 - FOR COMPLIANCE WITH THE CONTRA COSTA CLEAN WATER PROGRAM, SEE SHEET 18.
 - THERE HAVE BEEN NO PRIOR DEVELOPMENT APPROVALS FOR THIS PROPERTY.
 - APPLICANT PROPOSES TO WIDEN AND IMPROVE THE NORTH SIDE OF RISDON ROAD IN LIEU OF UNDERGROUNDING THE EXISTING OVERHEAD UTILITIES ALONG THE PROJECT FRONTAGE ONLY.
 - 8 SINGLE FAMILY UNITS x 2.7 PERSONS PER HOUSEHOLD = 22 PERSONS THIS INFORMATION IS BASED ON THE 2012 US CENSUS FOR CONCORD.
 - NOT TREES OR STRUCTURES SHALL BE PLANTED OVER UTILITY LINES.
 - FOR PHOTOMETRIC PLAN, REFER TO SEPARATE EXHIBIT PREPARED BY ALP (ASSOCIATED LIGHTING REPRESENTATIVES, INC.) DATED 3/26/2015 SHEET 1 OF 1

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NOTE:

THESE PLANS IDENTIFIED AS "AUTUMN BROOK • SUBDIVISION 9392 A QUALITY SINGLE-FAMILY DETACHED RESIDENTIAL PROJECT, CITY OF CONCORD, CALIFORNIA" SHEET 1 THROUGH 20 INCLUSIVE, DATED OCTOBER 8, 2014, REVISED DECEMBER 23, 2014 AND REVISED APRIL 8, 2015 HAVE BEEN PREPARED UNDER THE DIRECTION OF, AND APPROVED BY:



RAZMIK AVEDIAN DATE
R.C.E. 53063 EXPIRES 6/30/15
P/A DESIGN RESOURCES, INC.

PA Design Resources, Inc.
Planning ■ Engineering ■ Surveying

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Walnut Creek, California 94598-2635

TEL (925) 210-9300

AUTUMN BROOK

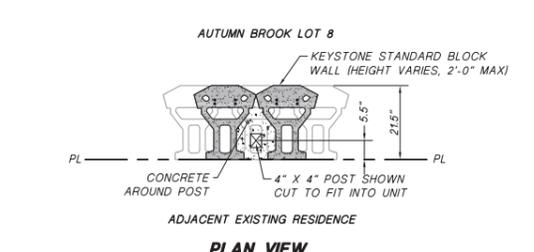
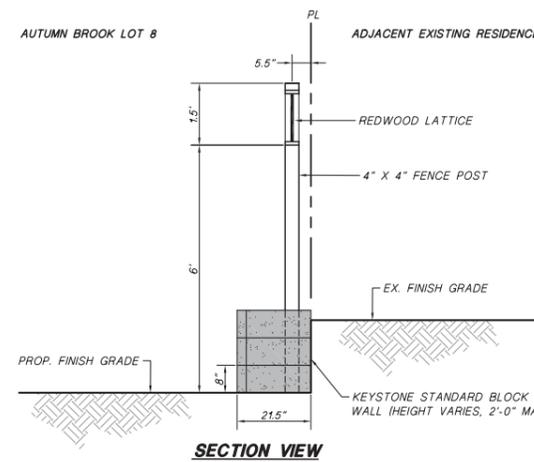
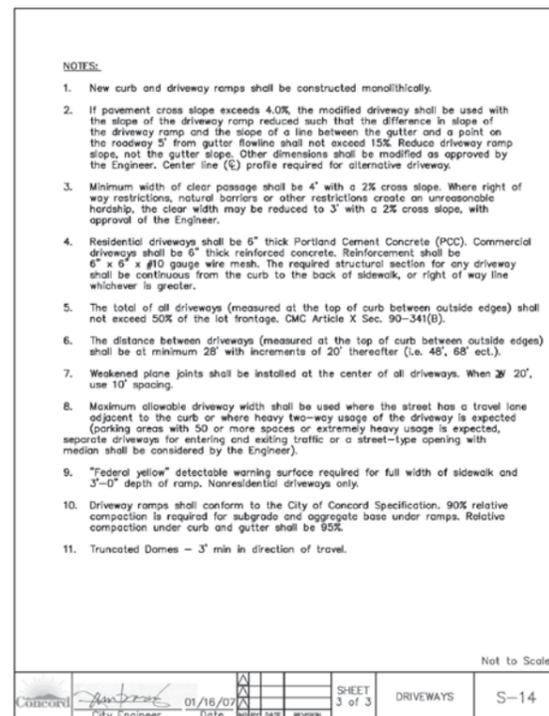
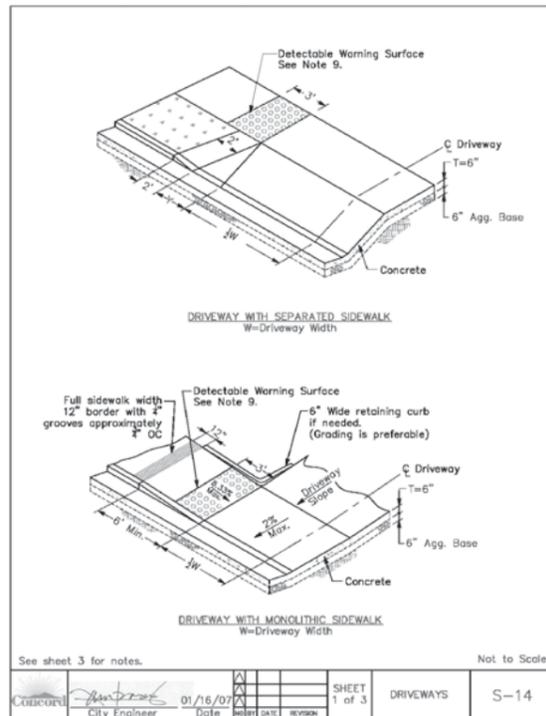
CONCORD, CALIFORNIA

LEGEND AND DETAILS

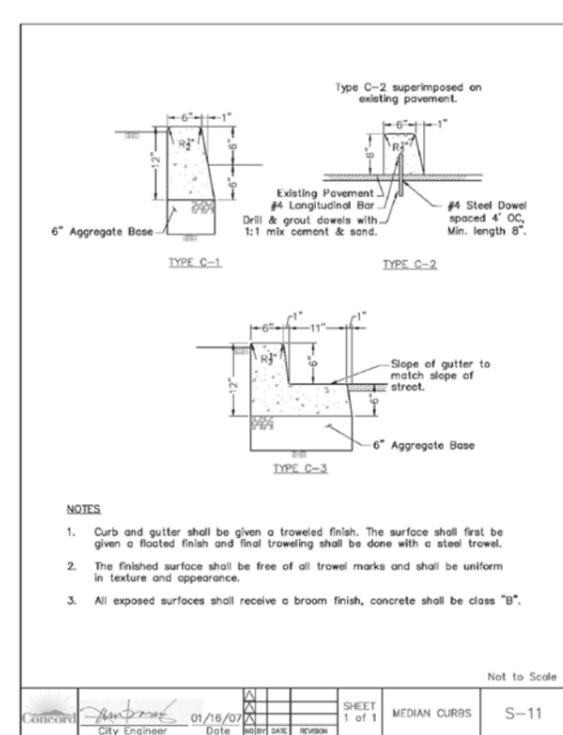
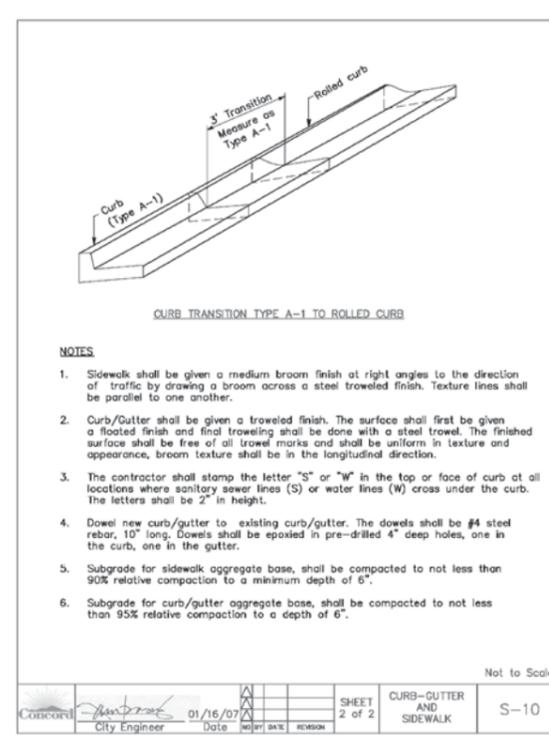
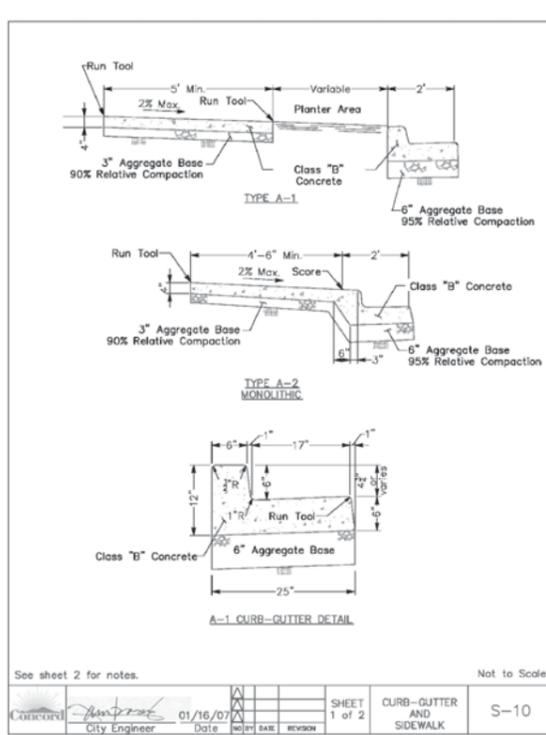
OCTOBER 8, 2014
REVISED DECEMBER 23, 2014
REVISED APRIL 8, 2015

LEGEND

PROPOSED	ITEM	EXISTING
—	SUBDIVISION BOUNDARY	—
---	LOT LINE	---
- - -	CENTER LINE	- - -
- · - · -	EASEMENT LINE	- · - · -
- · - · -	LIMITS OF CIVIL GRADING	- · - · -
W	DOMESTIC WATER LINE	W
SS	SANITARY SEWER LINE	SS
JT	JOINT TRENCH	JT
—	STORM DRAIN LINE (PUBLIC)	—
—	GAS LINE	—
—	EXISTING DRAINAGE	—
—	FIRE HYDRANT	—
—	SANITARY SEWER MANHOLE	—
—	STORM DRAIN CATCH BASIN	—
—	WATER VALVE	—
—	JOINT POLE W/GUY ANCHOR	—
AB	AGGREGATE BASE	AB
AC	ASPHALT CONCRETE	AC
CB	CATCH BASIN	CB
CO	CLEAN OUT	CO
CONC	CONCRETE	CONC
ESMT or ESM'T	EASEMENT	ESMT or ESM'T
EX. or EXIST.	EXISTING	EX. or EXIST.
F/C or FC	FACE OF CURB	F/C or FC
FF	FINISH FLOOR	FF
FH	FIRE HYDRANT	FH
FL	FLOW LINE	FL
GAR	GARAGE FINISH FLOOR	GAR
JP	JOINT POLE	JP
MIN.	MINIMUM	MIN.
OHW	OVERHEAD WIRE	OHW
P/L or PL	PROPERTY LINE	P/L or PL
PAE	PUBLIC ACCESS EASEMENT	PAE
PAV	PAVEMENT	PAV
R.I.	RODDING INLET	R.I.
R/W or RW	RIGHT-OF-WAY	R/W or RW
TC	TOP OF CURB	TC
SDMH	STORM DRAIN MANHOLE	SDMH
SS	SANITARY SEWER	SS
W	WATER	W
WV	WATER VALVE	WV



RETAINING WALL DETAIL
LOT 8 SIDE/REAR YARD N.T.S.



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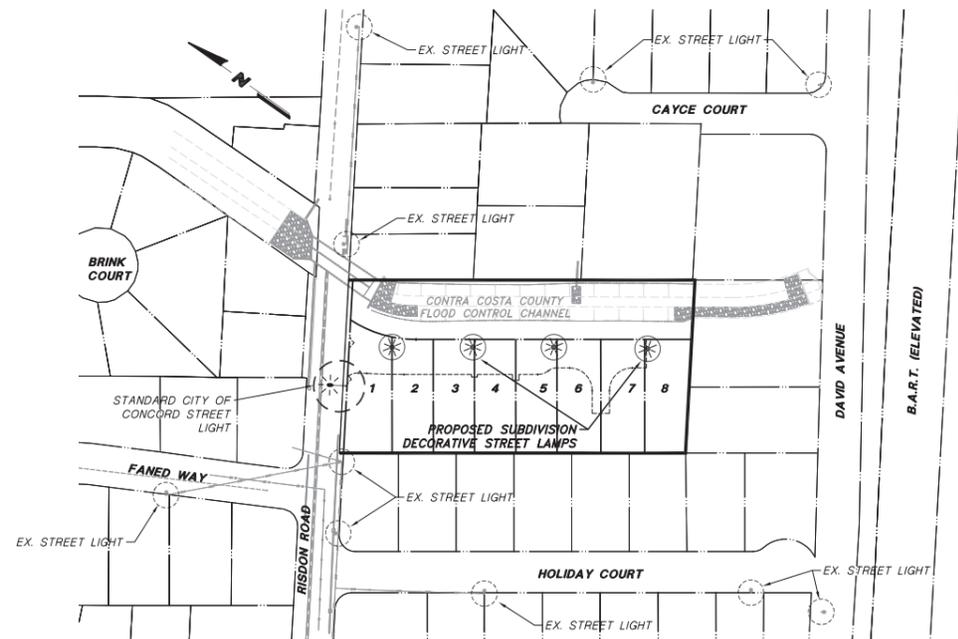
2
OF 20

AUTUMN BROOK

CONCORD, CALIFORNIA

STREET SECTIONS AND DETAILS

OCTOBER 8, 2014
 REVISED DECEMBER 23, 2014
 REVISED APRIL 8, 2015

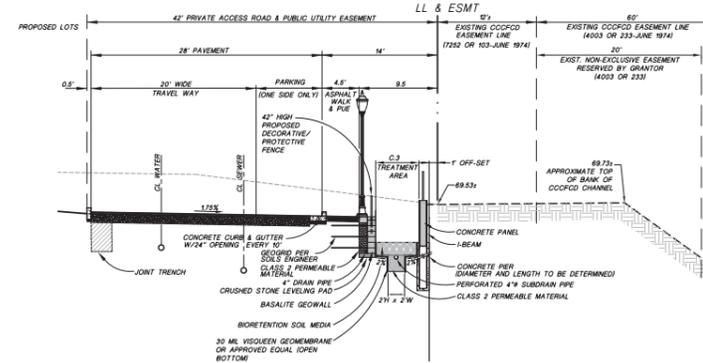


EXISTING & PROPOSED LIGHT LOCATIONS

LEGEND:

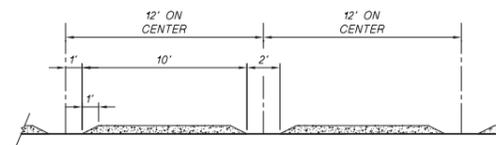
- ☼ INDICATES PROPOSED STANDARD CITY OF CONCORD STREET LIGHT
- ☼ INDICATES PROPOSED SUBDIVISION DECORATIVE STREET LAMP

SCALE: 1" = 100'



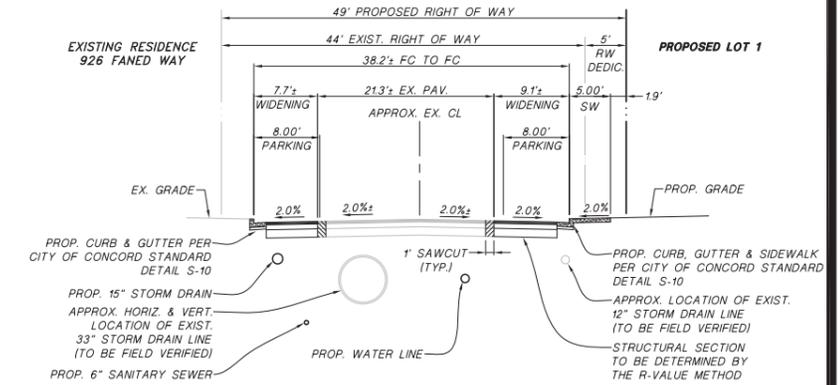
AUTUMN BROOK LANE

LOOKING NORTHWEST TOWARDS RISDON ROAD (PRIVATE PARKING ALLOWED ON ONE SIDE ONLY) N.T.S.



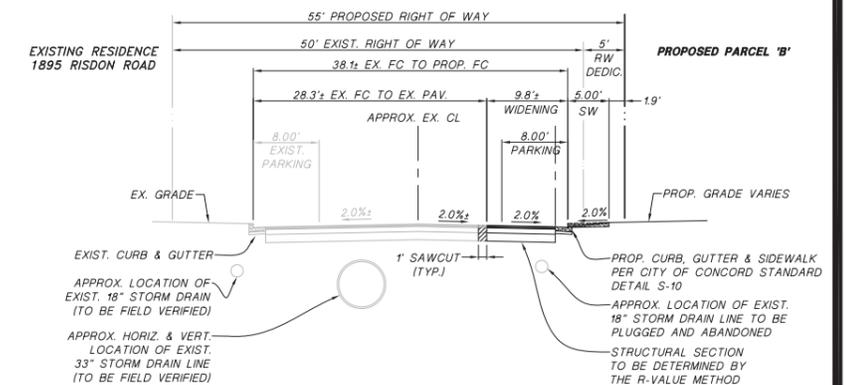
TYPICAL OPEN CURB PROFILE DETAIL

SEE AUTUMN BROOK LANE FOR LOCATION (ALLOWS FOR SURFACE DRAINAGE TO THE C.3 FACILITY) N.T.S.



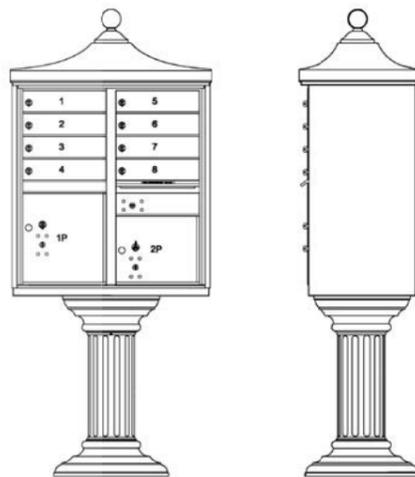
RISDON ROAD SECTION 1 - 1

LOOKING NORTHEAST TOWARD OAK GROVE ROAD (PUBLIC PARKING ALLOWED BOTH SIDES, SEE PLAN VIEW FOR LOCATION) N.T.S.



RISDON ROAD SECTION 2 - 2

LOOKING NORTHEAST TOWARD OAK GROVE ROAD (PUBLIC PARKING ALLOWED BOTH SIDES, SEE PLAN VIEW FOR LOCATION) N.T.S.



MAILBOX KIOSK DETAIL

CUSTOM HOME ACCESSORIES, INC. N.T.S.
 REGENT ASSEMBLY & DOOR MAILBOX

COMPLETE SIGN UNIT

POLE:
 SP4X14 - 4" X 4" FLUTED POLE
 EXTRUDED ALUMINUM ALLOY 6005-T5
 WALL THICKNESS 0.125"

FINIAL:
 FIN-A4 - ACORN FINIAL FOR 4" OD ROUND POLE
 HEIGHT 8"
 WIDTH 4.75"
 CAST ALUMINUM ALLOY #356

TRIMS:
 TDS0636 - TRIM FOR 6" X 36" STREET SIGN
 CAST ALUMINUM BACK PLATE ALLOY #356
 EXTRUDED FRAME ALLOY #6063

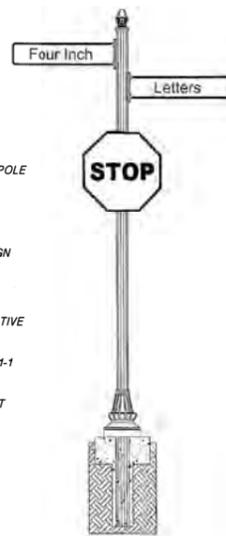
SIGNS:
 0636DS - DOUBLE SIDED 6" X 36" REFLECTIVE
 STREET SIGN W/4" LETTERS
 SPECIFY VINYL TYPE
 STOP SIGN TO COMPLY WITH CAMUTCD R1-1

BASE:
 SB-94 - SLIP OVER BASE FOR 4" OD POST
 HEIGHT 16"
 WIDTH 13"
 CAST ALUMINUM ALLOY #356

NOTES:
 COMPLETE UNIT SHOWN WITH 2' BELOW GRADE BURIAL.
 DRAWING FOR INFORMATION ONLY, NOT INTENDED FOR CONSTRUCTION PURPOSES.

STREET SIGN DETAIL

PRODUCT BY CUSTOM HOME ACCESSORIES, INC. N.T.S.
 STREET SIGNAGE POLE WITH STOP SIGN OPTION ADDED



BASE:
 CAST ALUMINUM HEIGHT 32" WIDTH 15.5"

POLE:
 4" OD X 0.125" WALL EXTRUDED ALUMINUM

HOLDER: CAST ALUMINUM

GLOBE: ACRYLIC ACORN

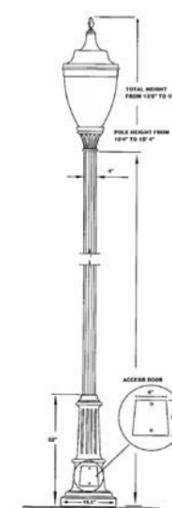
EASTENERS: STAINLESS STEEL

FINISH:
 POLYESTER POWDER COAT
 ELECTROSTATICALLY APPLIED AND
 THERMOCURLED

NOTES:
 DRAWING FOR INFORMATION ONLY, NOT
 INTENDED FOR CONSTRUCTION PURPOSES.

DECORATIVE STREET LAMP

REFER TO PHOTOMETRIC PLAN PREPARED BY ALR
 (ASSOCIATED LIGHTING REPRESENTATIVES, INC.) FOR
 MORE DETAILS N.T.S.



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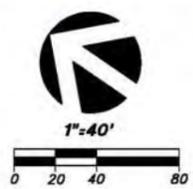
TEL (925) 210-9300

AUTUMN BROOK

CONCORD, CALIFORNIA

PROJECT CONTEXT EXHIBIT

OCTOBER 8, 2014
 REVISED DECEMBER 23, 2014
 REVISED APRIL 8, 2015



IMPORTANT NOTES

BOUNDARY NOTE
 THE BOUNDARY SHOWN HEREON IS NOT BASED ON A BOUNDARY SURVEY BUT IS AN APPROXIMATE BOUNDARY COMPILED FROM AVAILABLE PUBLIC RECORD DATA.

AERIAL PHOTO NOTE
 AERIAL PHOTOGRAPHY SHOWN HEREON IS AVAILABLE PER CONTRA COSTA COUNTY GIS DATA DATED 2008.



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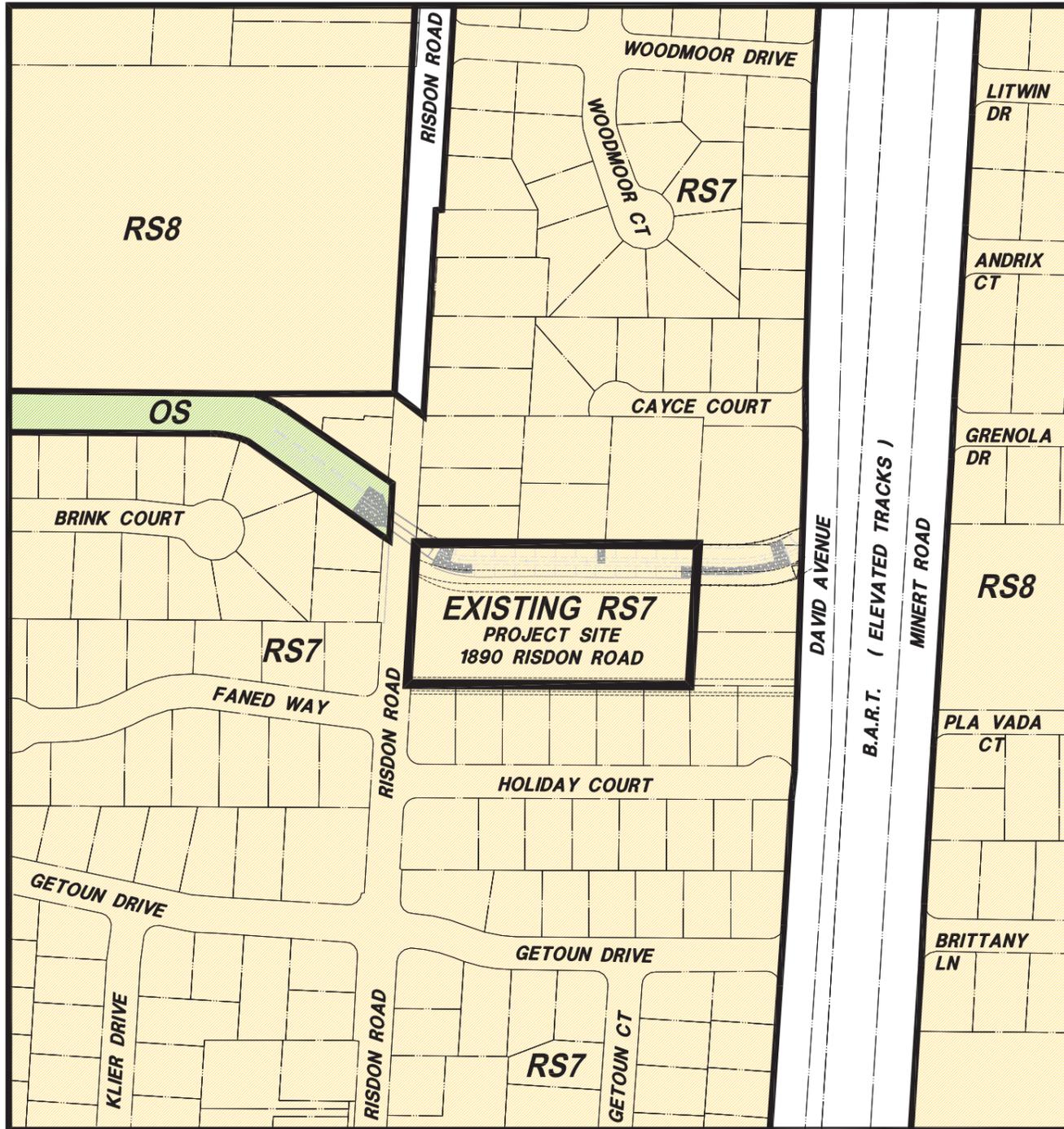
TEL (925) 210-9300

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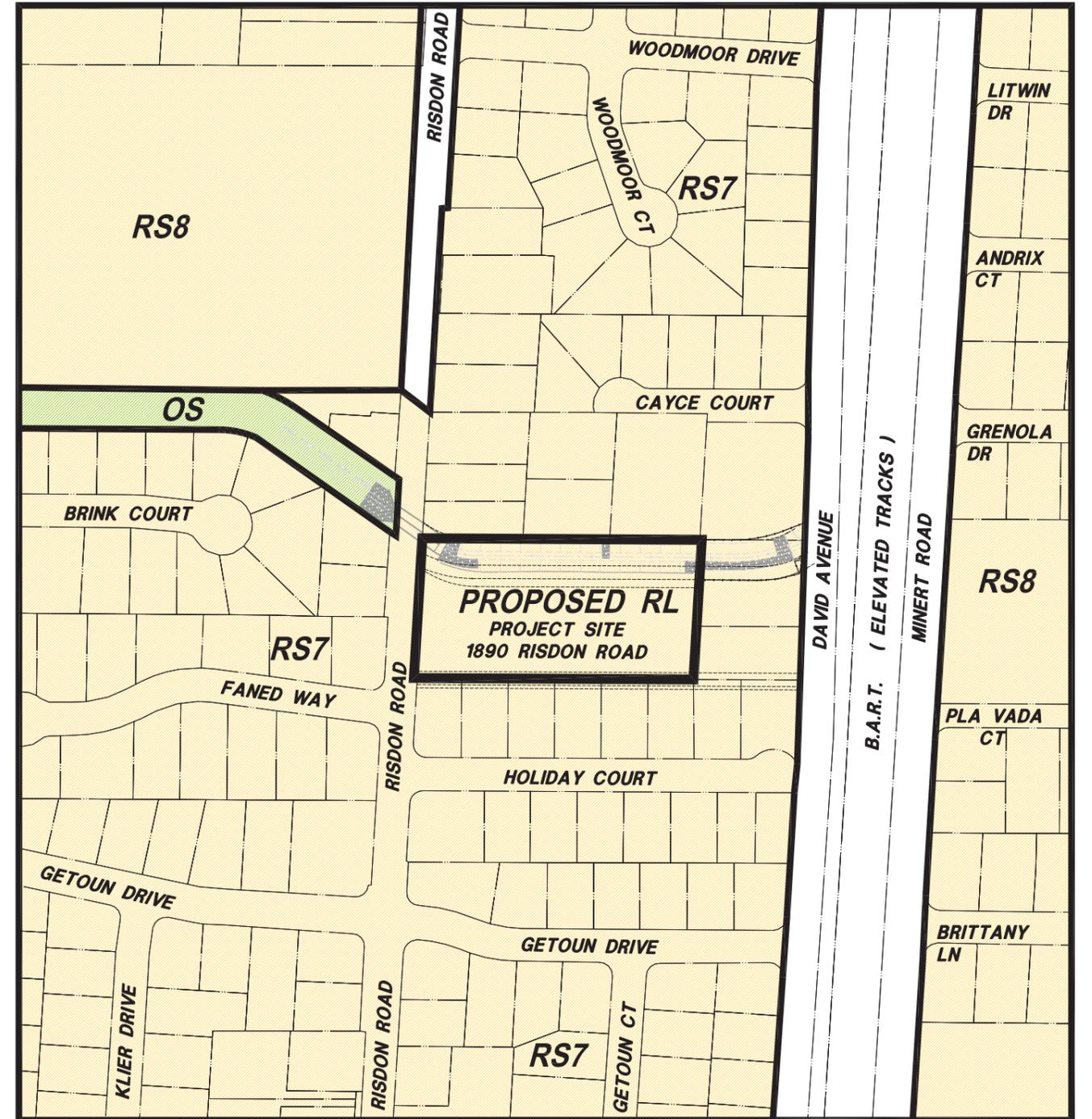
CONCORD, CALIFORNIA

ZONING DISTRICT EXHIBIT

OCTOBER 8, 2014
 REVISED DECEMBER 23, 2014
 REVISED APRIL 8, 2015



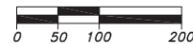
EXISTING ZONING DISTRICTS



PROPOSED ZONING DISTRICT



1"=100'



IMPORTANT NOTE

ZONING NOTE

EXISTING ZONING DISTRICTS SHOWN ARE BASED ON THE CITY OF CONCORD ZONING MAP PAGE K16 EFFECTIVE DATE AUGUST 23, 2012.

LEGEND

- OS = OPEN SPACE
- RS7 = SINGLE FAMILY RESIDENTIAL; LOW DENSITY (2.5 TO 10 DU/NET ACRE)
- RS8 = SINGLE FAMILY RESIDENTIAL; LOW DENSITY (2.5 TO 10 DU/NET ACRE)
- RL = LOW DENSITY RESIDENTIAL; LOW DENSITY (2.5 TO 10 DU/NET ACRE)



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AUTUMN BROOK

CONCORD, CALIFORNIA

SITE PHOTO EXHIBIT

OCTOBER 8, 2014
 REVISED DECEMBER 23, 2014
 REVISED APRIL 8, 2015



1.) VIEW LOOKING SOUTHWEST ALONG THE RISDON ROAD FRONTAGE WITH THE PROPERTY ON THE LEFT BEYOND THE FENCE



2.) VIEW LOOKING SOUTH FROM ACROSS RISDON ROAD TOWARDS THE EXISTING VACANT HOUSE AND DRIVEWAY



3.) VIEW LOOKING EAST FROM FANED WAY TOWARDS THE EXISTING VACANT HOUSE. SHOWS EXISTING CURB, GUTTER AND SIDEWALK ENDING AT PROPERTY LINE



4.) VIEW LOOKING NORTHEAST ALONG RISDON ROAD TOWARDS OAK GROVE ROAD. THE PROPERTY BEGINS ON THE RIGHT HAND SIDE AFTER THE SIDEWALK ENDS AND PAVEMENT NARROWS.

THIS VIEW ALSO SHOWS THE ABRUPT PAVEMENT NARROWING ON THE LEFT HAND SIDE WHERE IT ABRUPTLY JOGS OUT FROM THE TRUNCATED SIDEWALK AT 1891 RISDON ROAD. THIS IS THE AREA PROPOSED FOR WIDENING IN LIEU OF UNDERGROUNDING AN ISOLATED SECTION OF OVERHEAD UTILITIES ALONG THE PROJECT FRONTAGE SIDE.



5.) NORTHEAST VIEW OF THE EXISTING EDGE OF PAVEMENT ALONG THE FRONTAGE OF THE PROPERTY INCLUDING A STEEP ROADSIDE DRAINAGE DITCH DRAINING NORTHEAST TO BOX CULVERT.



6.) VIEW LOOKING NORTHEAST FROM THE PROPOSED LOT 2 TOWARDS THE CONTRA COSTA COUNTY FLOOD CHANNEL AND THE EXISTING HOUSE BEYOND LOCATED AT 1902 RISDON ROAD



7.) VIEW LOOKING EAST ACROSS THE PROPERTY TOWARDS THE CONTRA COSTA COUNTY FLOOD CONTROL CHANNEL AND EXISTING HOUSES ON THE OTHER SIDE OF THE CHANNEL



KEY TO SITE PHOTOS
 NTS



8.) VIEW LOOKING NORTHEAST ACROSS THE PROPERTY TOWARDS THE CONTRA COSTA COUNTY FLOOD CONTROL CHANNEL AND EXISTING HOUSES ON THE OTHER SIDE OF THE CHANNEL



9.) VIEW LOOKING WEST ACROSS THE PROPERTY TOWARDS THE REAR PROPERTY LINE OF THE EXISTING HOUSES ALONG HOLIDAY COURT



10.) VIEW LOOKING NORTHWEST FROM DAVID DRIVE ALONG THE FLOOD CONTROL CHANNEL TOWARDS THE PROPERTY (AS SEEN IN THE CLEARING BEYOND)

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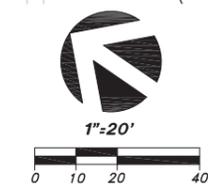
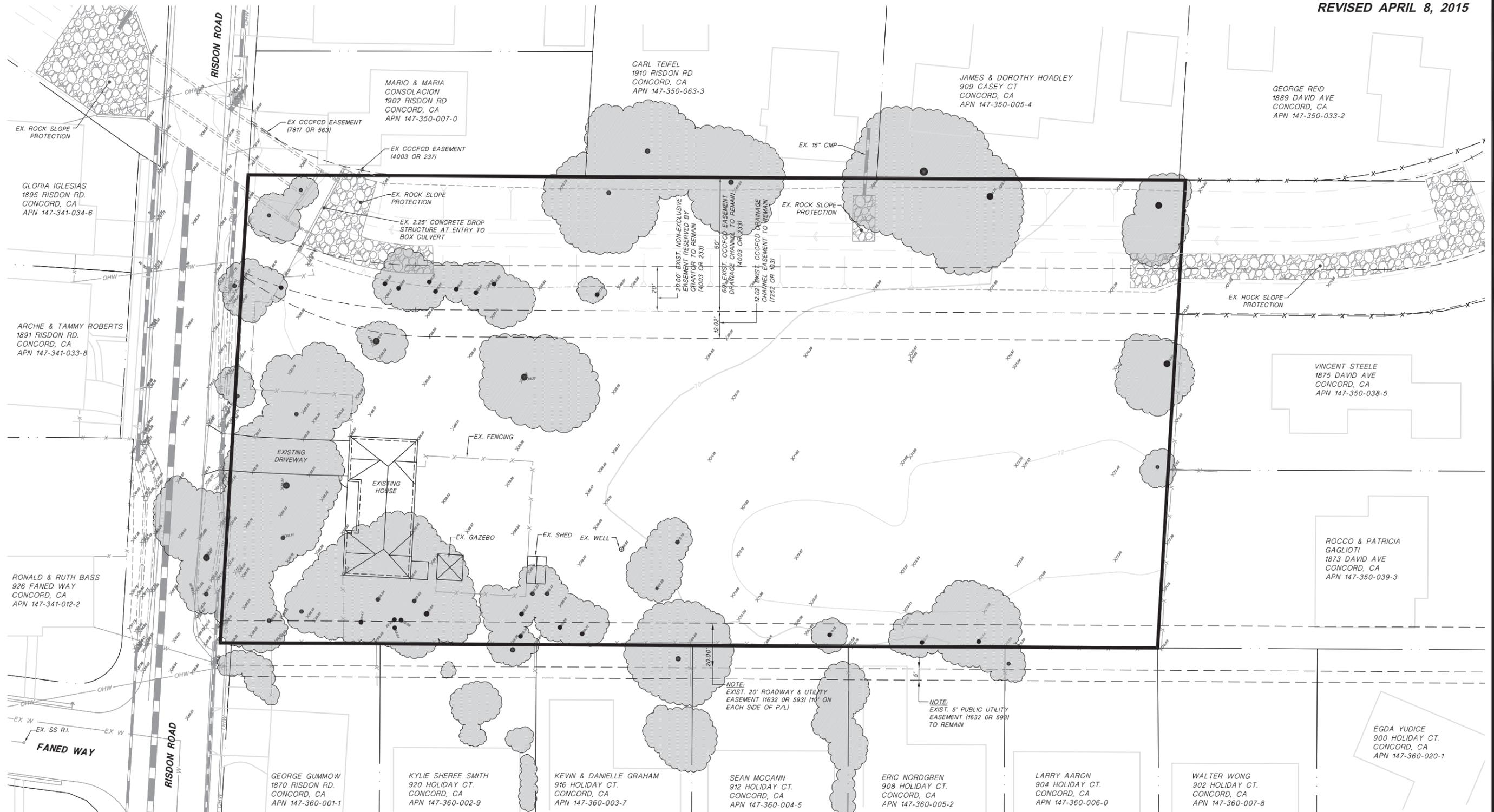
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AUTUMN BROOK

CONCORD, CALIFORNIA

EXISTING SITE TOPOGRAPHIC CONDITIONS

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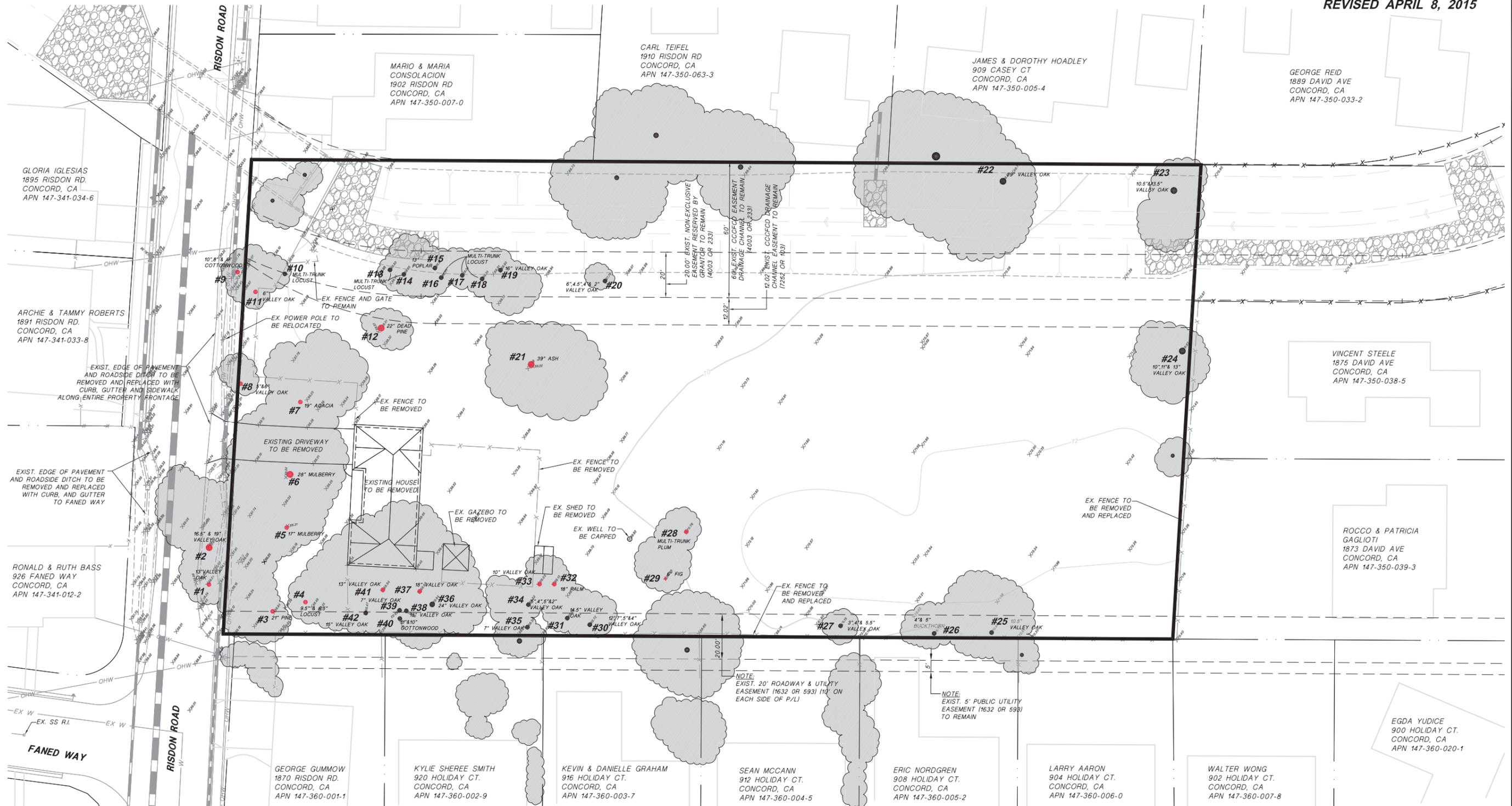
7
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AUTUMN BROOK

CONCORD, CALIFORNIA

TREE EXHIBIT & DEMOLITION PLAN

OCTOBER 8, 2014
 REVISED DECEMBER 23, 2014
 REVISED APRIL 8, 2015



- LEGEND**
- #25 TREE NUMBER PER ARBORIST REPORT
 - TREE TO BE SAVED IF POSSIBLE
 - TREE TO BE REMOVED

- NOTES**
1. TREE LOCATIONS, TREE NUMBERS, SPECIES AND SIZES WERE FIELD IDENTIFIED BY THE ARBORIST AND ARE DISCUSSED IN THE TREE INVENTORY & PRELIMINARY ASSESSMENT FOR 1890 RISDON ROAD PREPARED BY JOHN TRAVERSO, DATED APRIL 2014

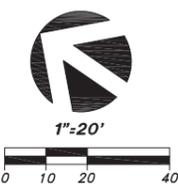


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OF 20



AUTUMN BROOK

CONCORD, CALIFORNIA

TENTATIVE MAP - LOT LAYOUT

OCTOBER 8, 2014
 REVISED DECEMBER 23, 2014
 REVISED APRIL 8, 2015

CARL TEIFEL
 1910 RISDON RD
 CONCORD, CA
 APN 147-350-063-3

JAMES & DOROTHY HOADLEY
 909 CASEY CT
 CONCORD, CA
 APN 147-350-005-4

GEORGE REID
 1889 DAVID AVE
 CONCORD, CA
 APN 147-350-033-2

GLORIA IGLESIAS
 1895 RISDON RD.
 CONCORD, CA
 APN 147-341-034-6

ARCHIE & TAMMY ROBERTS
 1891 RISDON RD.
 CONCORD, CA
 APN 147-341-033-8

RONALD & RUTH BASS
 926 FANED WAY
 CONCORD, CA
 APN 147-341-012-2

MARIO & MARIA
 CONSOLACION
 1902 RISDON RD
 CONCORD, CA
 APN 147-350-007-0

VINCENT STEELE
 1875 DAVID AVE
 CONCORD, CA
 APN 147-350-038-5

ROCCO & PATRICIA
 GAGLIOTI
 1873 DAVID AVE
 CONCORD, CA
 APN 147-350-039-3

EGDA YUDICE
 900 HOLIDAY CT.
 CONCORD, CA
 APN 147-360-020-1

GEORGE GUMMOW
 1870 RISDON RD.
 CONCORD, CA
 APN 147-360-001-1

KYLIE SHEREE SMITH
 920 HOLIDAY CT.
 CONCORD, CA
 APN 147-360-002-9

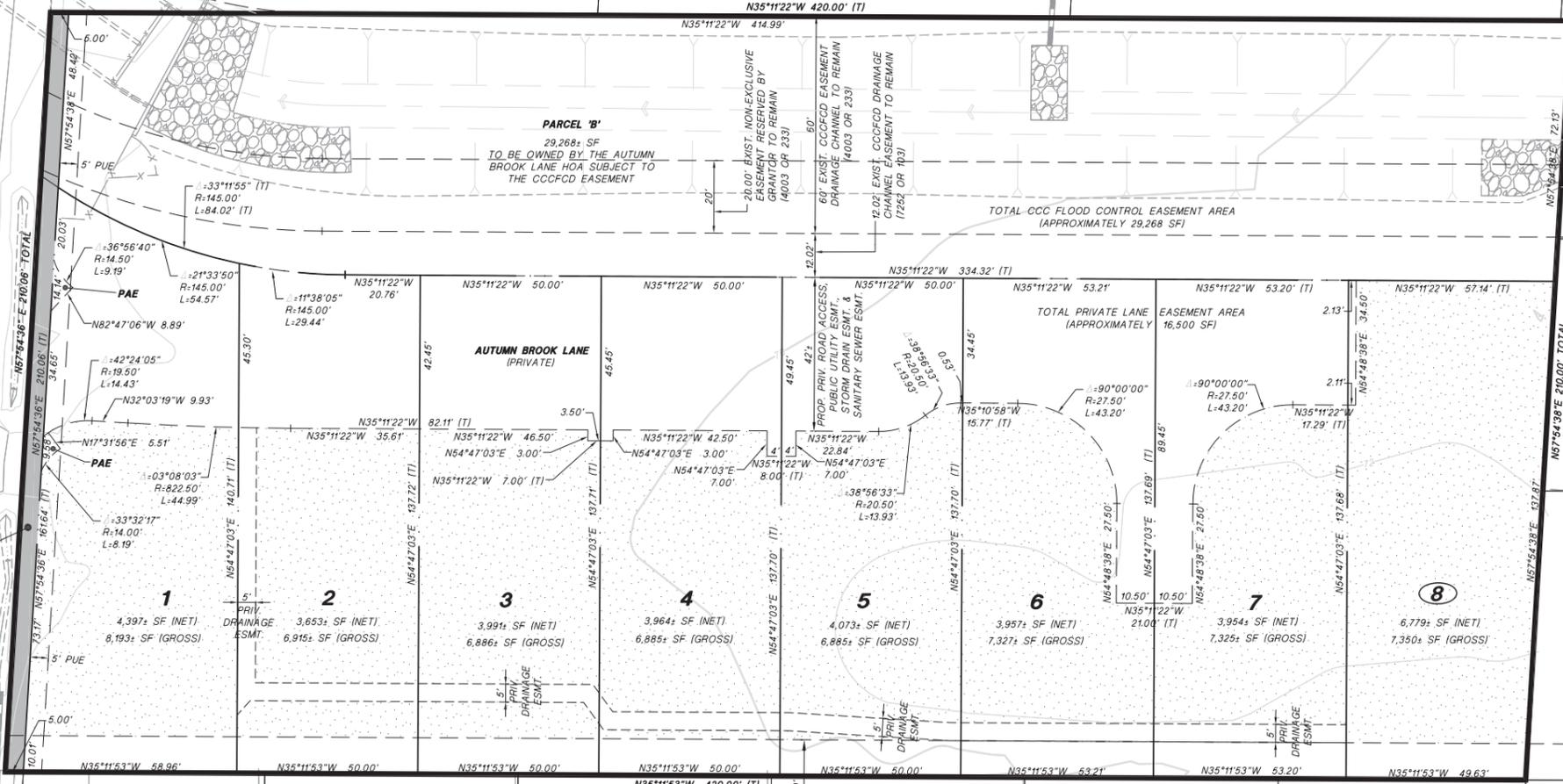
KEVIN & DANIELLE GRAHAM
 916 HOLIDAY CT.
 CONCORD, CA
 APN 147-360-003-7

SEAN MCCANN
 912 HOLIDAY CT.
 CONCORD, CA
 APN 147-360-004-5

ERIC NORDGREN
 908 HOLIDAY CT.
 CONCORD, CA
 APN 147-360-005-2

LARRY AARON
 904 HOLIDAY CT.
 CONCORD, CA
 APN 147-360-006-0

WALTER WONG
 902 HOLIDAY CT.
 CONCORD, CA
 APN 147-360-007-8



NOTE:
 EXIST. 20' ROADWAY & UTILITY
 EASEMENT (1632 OR 593) (10' ON
 EACH SIDE OF P/L)

NOTE:
 EXIST. 5' PUBLIC UTILITY
 EASEMENT (1632 OR 593)
 TO REMAIN



LEGEND

INDICATES NET LOT AREA



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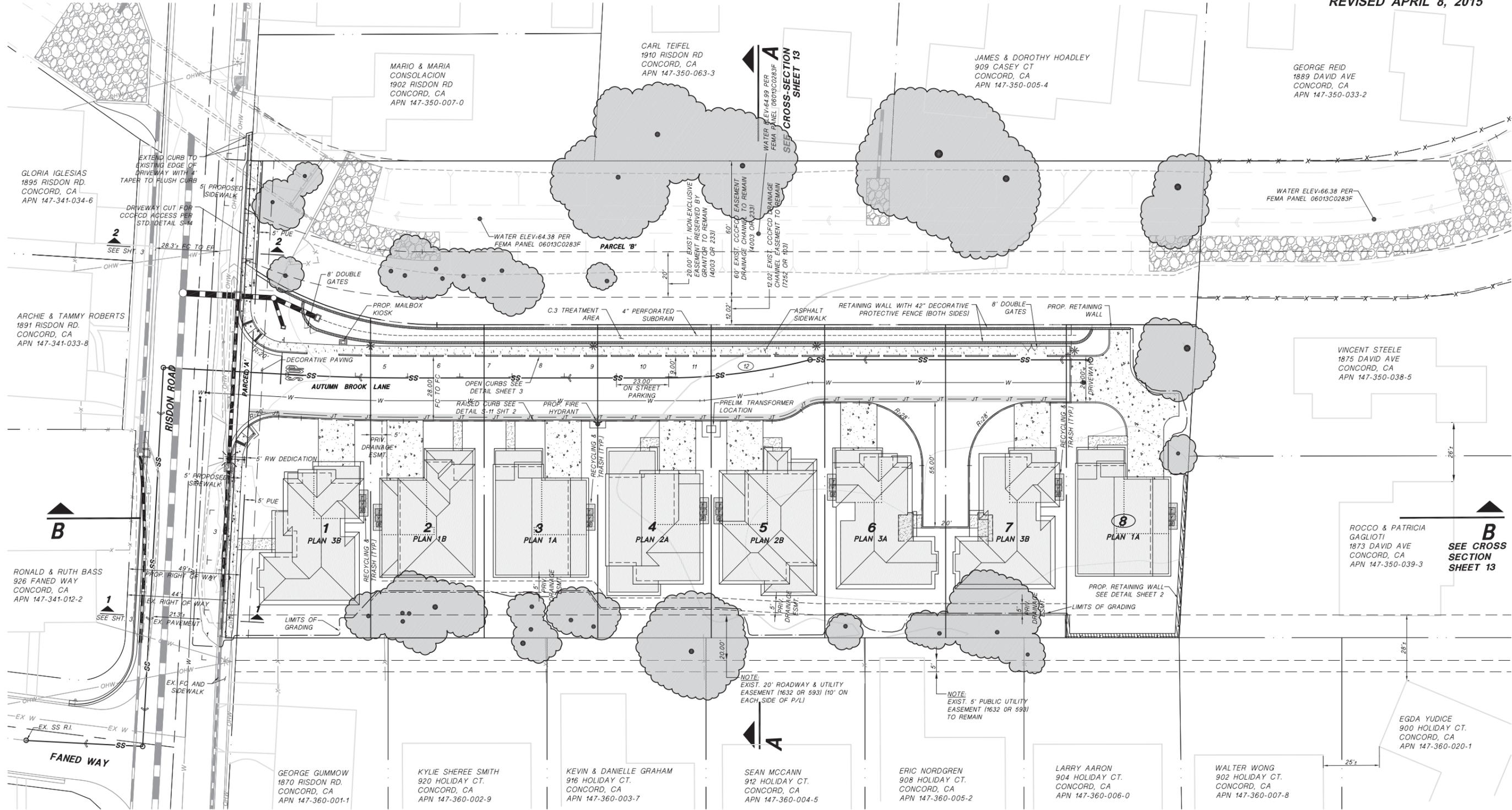
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AUTUMN BROOK

CONCORD, CALIFORNIA

TENTATIVE MAP - SITE PLAN

OCTOBER 8, 2014
 REVISED DECEMBER 23, 2014
 REVISED APRIL 8, 2015



IMPORTANT NOTES

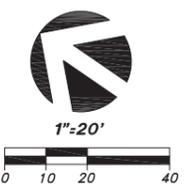
BOUNDARY NOTE
 THE BOUNDARY SHOWN HEREON IS NOT BASED ON A BOUNDARY SURVEY BUT IS AN APPROXIMATE BOUNDARY COMPILED FROM AVAILABLE PUBLIC RECORD DATA.

TOPOGRAPHY NOTE
 EXISTING TREE LOCATIONS AND TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD SURVEY CONDUCTED BY P/A DESIGN RESOURCES, INC. IN MAY 2014.

SETBACKS
 SEE SHEET 9 FOR TYPICAL FRONT, SIDE AND REAR YARD SETBACKS. ALL DRIVEWAYS ARE A MINIMUM OF 20' DEEP FROM FACE OF CURB TO FACE OF GARAGE DOOR. ALL GARAGES ARE A MINIMUM OF 22 FEET DEEP.

NOTE:
 EXIST. 20' ROADWAY & UTILITY EASEMENT (1632 OR 593) (10' ON EACH SIDE OF P/L)

NOTE:
 EXIST. 5' PUBLIC UTILITY EASEMENT (1632 OR 593) TO REMAIN



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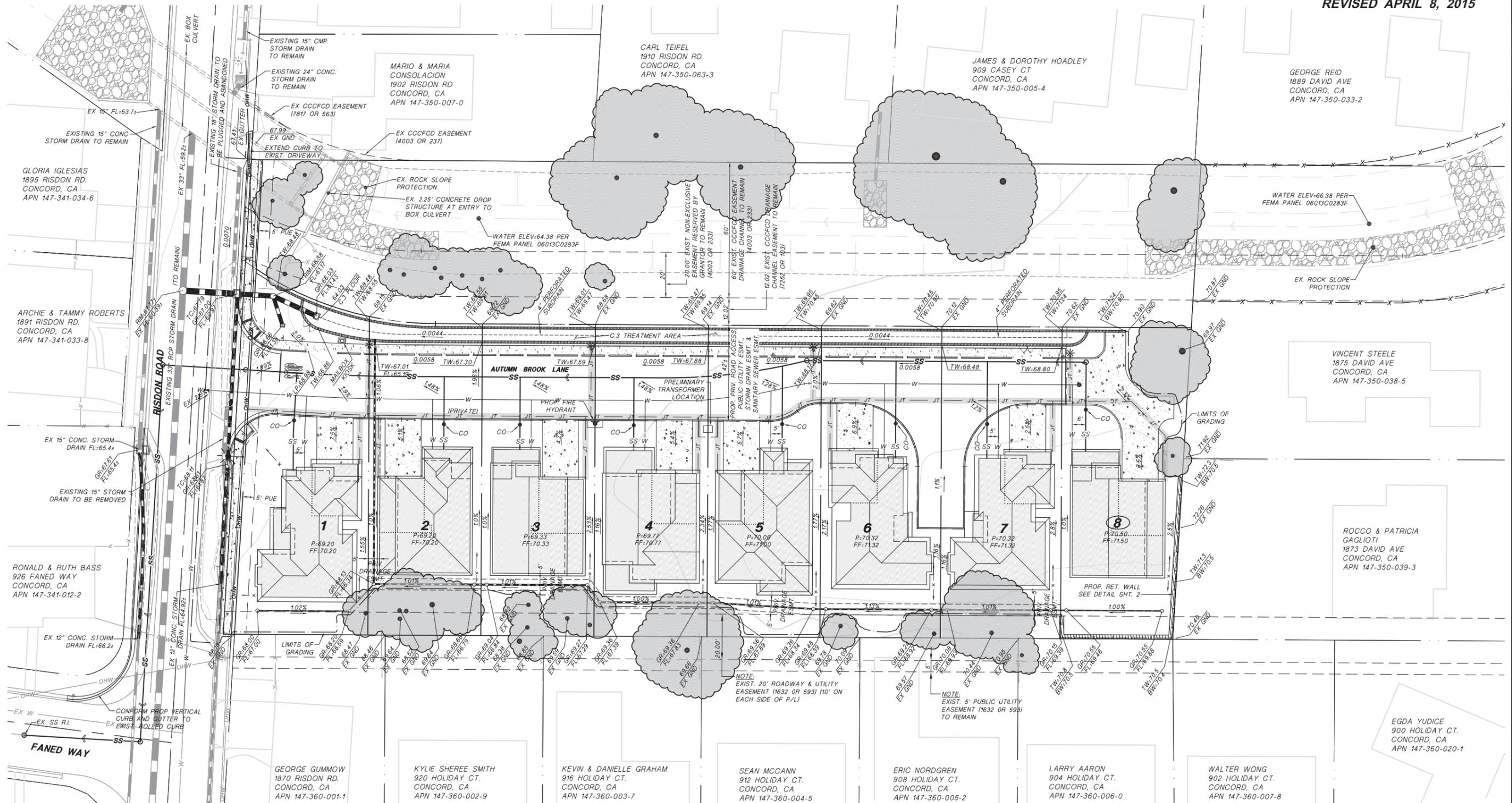
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 OF 20

AUTUMN BROOK

CONCORD, CALIFORNIA

PRELIMINARY GRADING & DRAINAGE PLAN

OCTOBER 8, 2014
 REVISED DECEMBER 23, 2014
 REVISED APRIL 8, 2015



IMPORTANT NOTES

BOUNDARY NOTE

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TOPOGRAPHY NOTE

EXISTING TREE LOCATIONS AND TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD SURVEY CONDUCTED BY P/A DESIGN RESOURCES, INC. IN MAY 2014.

DESIGN GRADES/SLOPES

DESIGN GRADES AND SLOPES HAVE BEEN CALCULATED AND WILL BE FURTHER REFINED DURING FINAL ENGINEERING.

TREES

- TREE TO BE SAVED IF POSSIBLE



1"=20'



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12

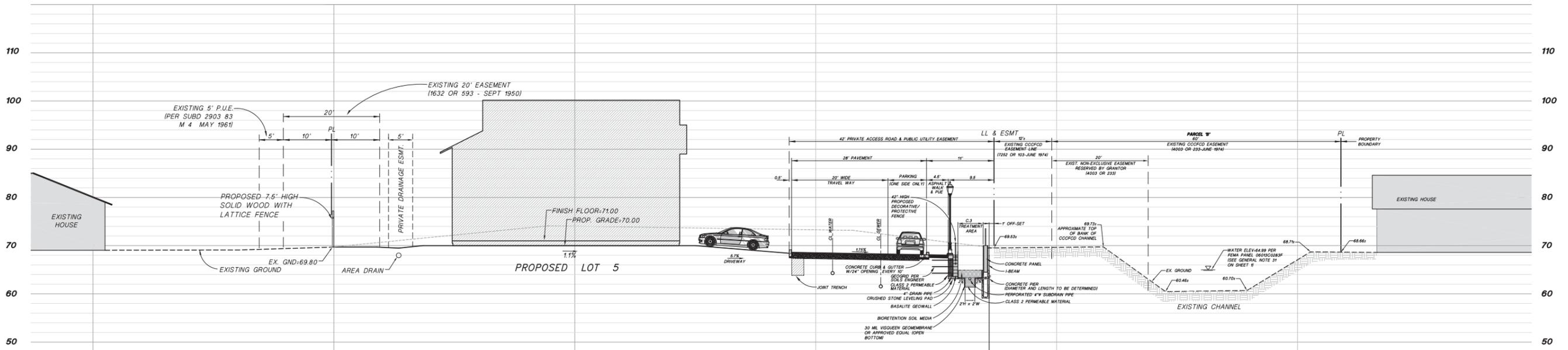
OF 20

AUTUMN BROOK

CONCORD, CALIFORNIA

"TRUE" CROSS - SECTIONS

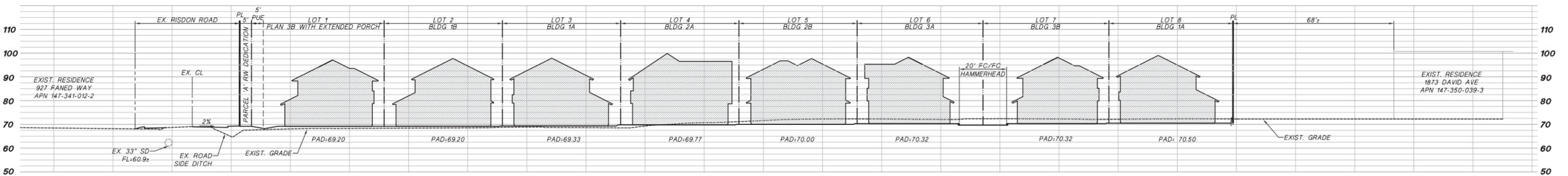
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 REVISED APRIL 8, 2015



"TRUE" CROSS SECTION A - A

LOOKING NORTH THRU LOT 5

HORIZ. & VERT. SCALE: 1"=10'
 (SEE SHEET 11 FOR LOCATION)



"TRUE" CROSS SECTION B - B

LOOKING EAST THRU PROPOSED HOUSES

HORIZ. & VERT. SCALE: 1"=20'
 (SEE SHEET 11 FOR LOCATION)



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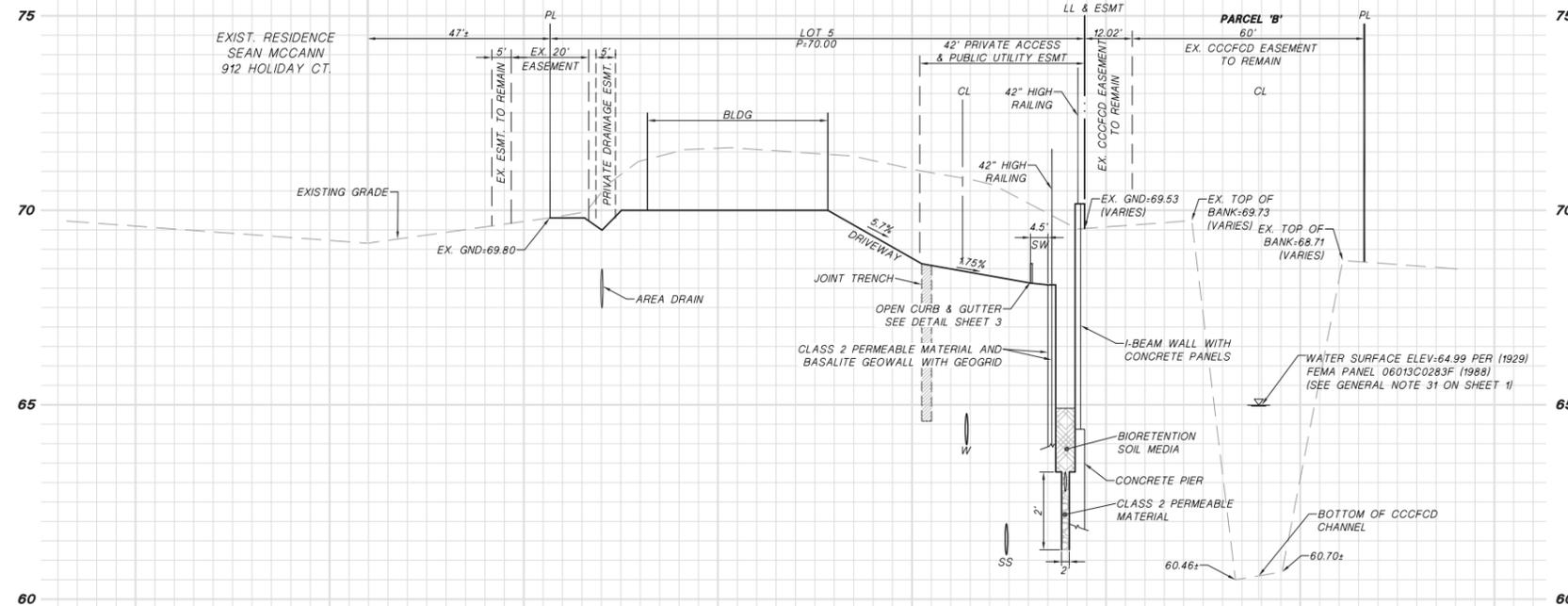
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"ENGINEERED" CROSS - SECTIONS

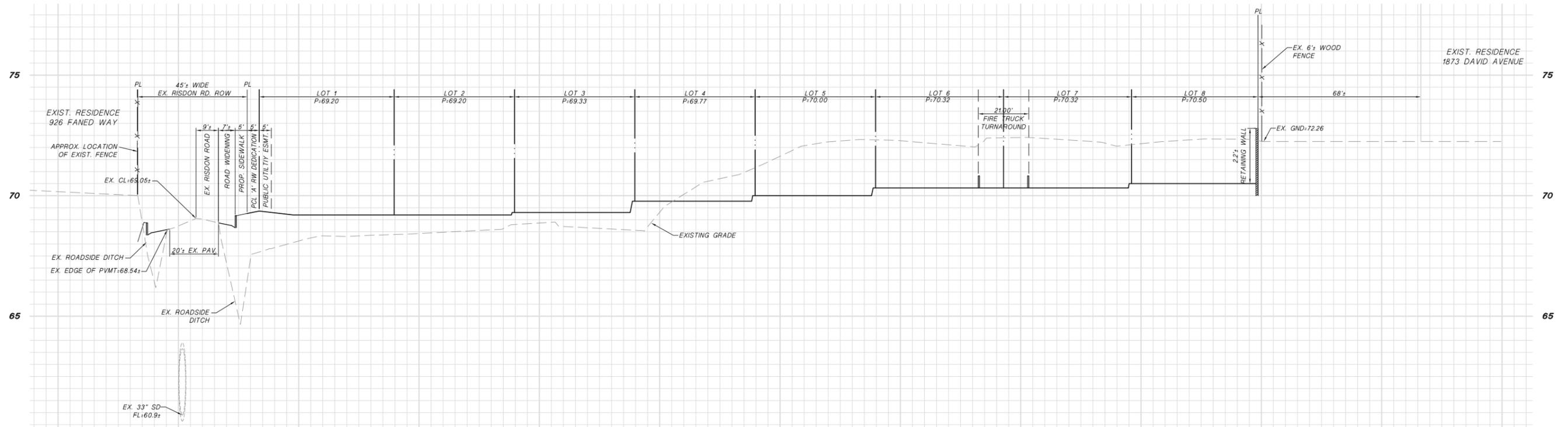
OCTOBER 8, 2014
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"ENGINEERED" CROSS SECTION A - A

LOOKING NORTH THRU LOT 5

SCALE: HORIZ. 1" = 20'; VERT. 1" = 2'
 (SEE SHEET 11 FOR LOCATION)



"ENGINEERED" CROSS SECTION B - B

LOOKING EAST THRU PROPOSED HOUSES

SCALE: HORIZ. 1" = 20'; VERT. 1" = 2'
 (SEE SHEET 11 FOR LOCATION)



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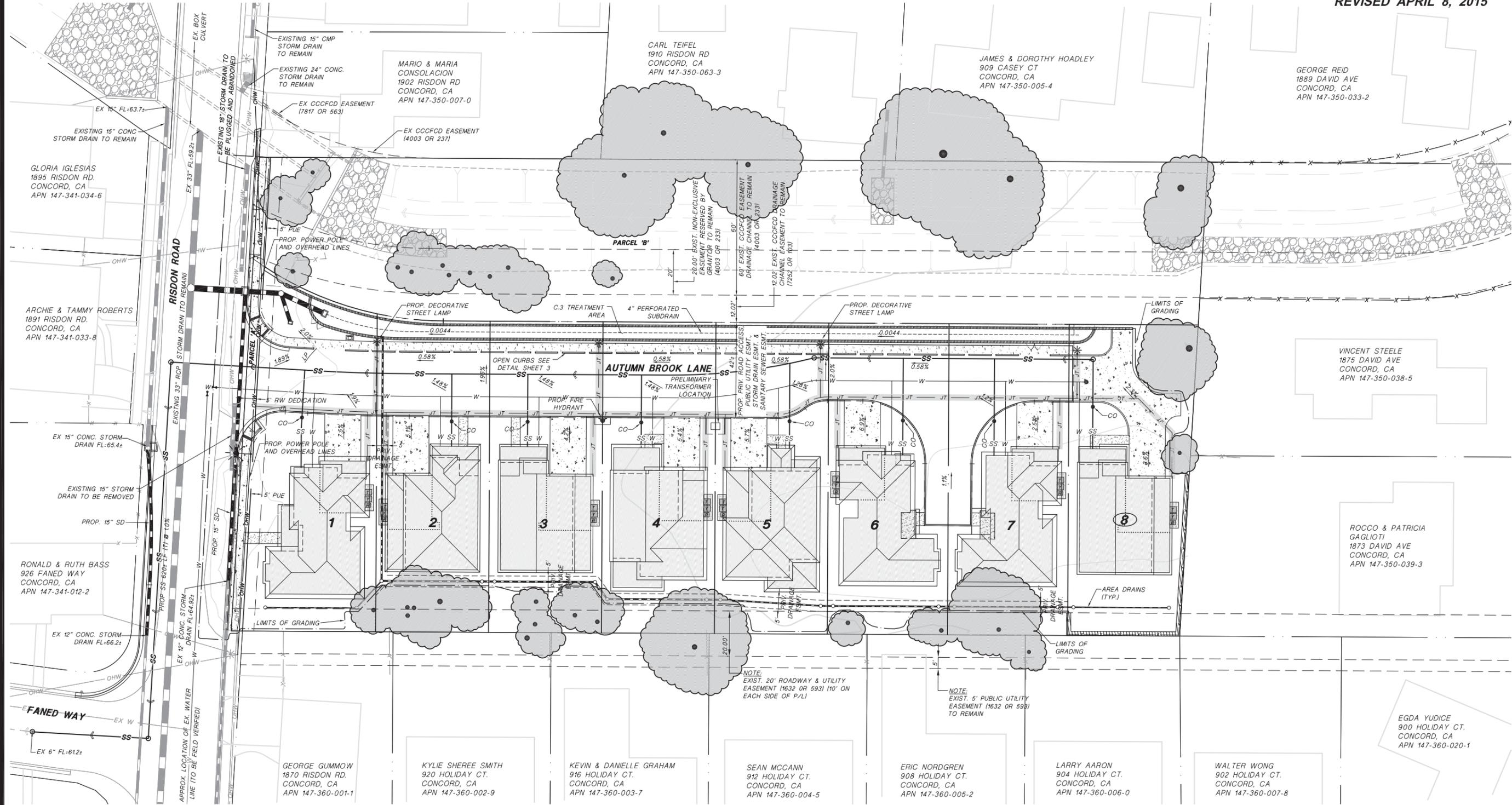
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 OF 20

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CONCORD, CALIFORNIA

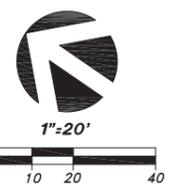
PRELIMINARY UTILITY PLAN

OCTOBER 8, 2014
 REVISED DECEMBER 23, 2014
 REVISED APRIL 8, 2015



IMPORTANT NOTE

UTILITY LATERALS NOTE
 FINAL LOCATION OF WATER AND SANITARY SEWER
 LATERALS WILL BE DETERMINED BY THE BUILDER.



NOTE:
 EXIST. 20' ROADWAY & UTILITY
 EASEMENT (1632 OR 593) (10' ON
 EACH SIDE OF P/L)

NOTE:
 EXIST. 5' PUBLIC UTILITY
 EASEMENT (1632 OR 593)
 TO REMAIN



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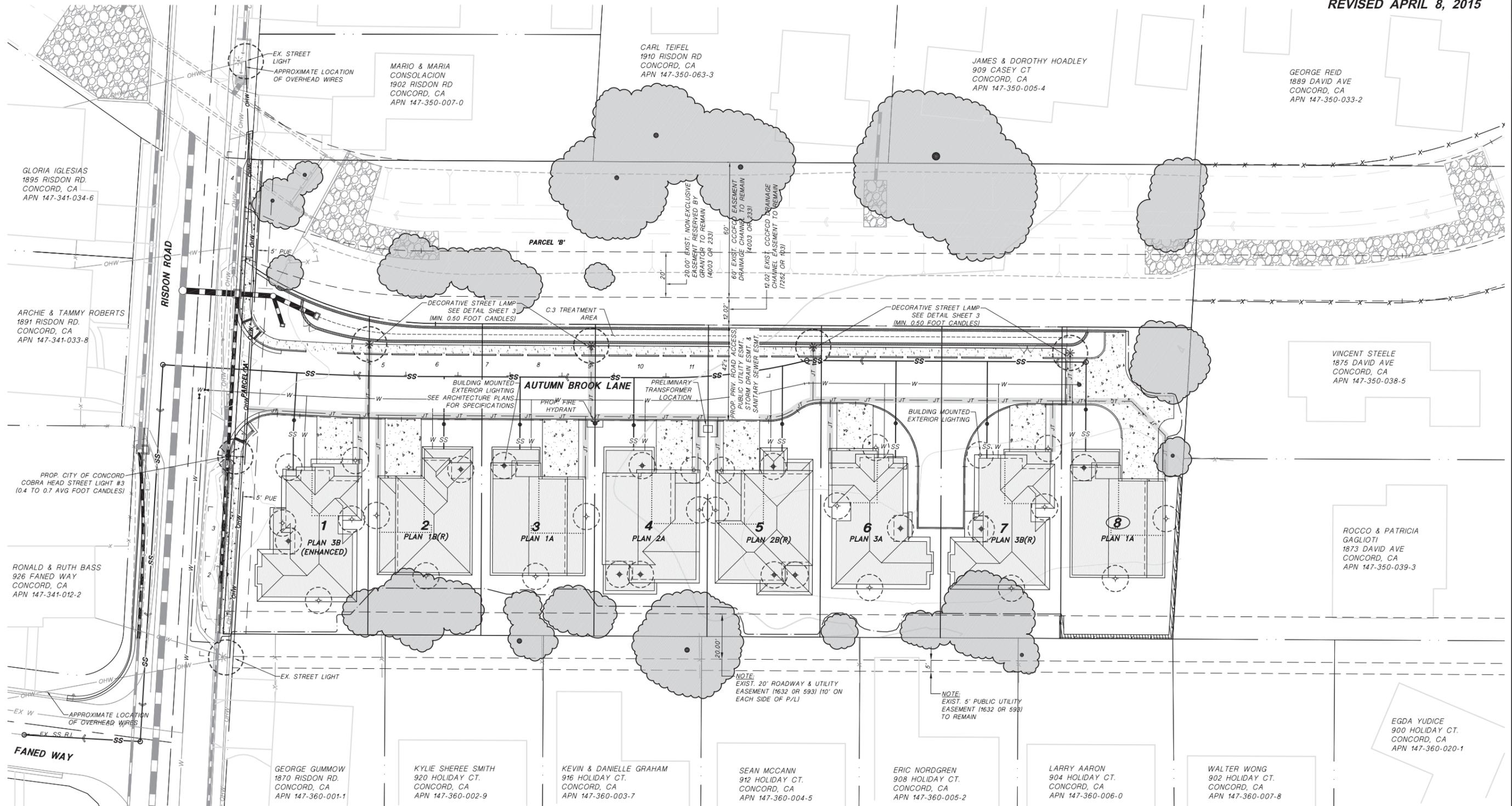
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 OF 20

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CONCORD, CALIFORNIA

LIGHTING PLAN

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NOTES

- SEE ARCHITECTURAL PLANS FOR LOCATION AND TYPE OF BUILDING MOUNTED EXTERIOR LIGHTING AND ILLUMINATED ADDRESS SIGNS.
- FOR PHOTOMETRIC PLAN REFER TO SEPARATE EXHIBIT PREPARED BY ALR (ASSOCIATED LIGHTING REPRESENTATIVES, INC.) DATED 3/26/2015 SHEET 1 OF 1.

LEGEND

- INDICATES EXISTING STREET LIGHT
- INDICATES PROPOSED STANDARD CITY OF CONCORD STREET LIGHT
- INDICATES APPROXIMATE LOCATOR OF BUILDING MOUNTED EXTERIOR LIGHTING



1"=20'



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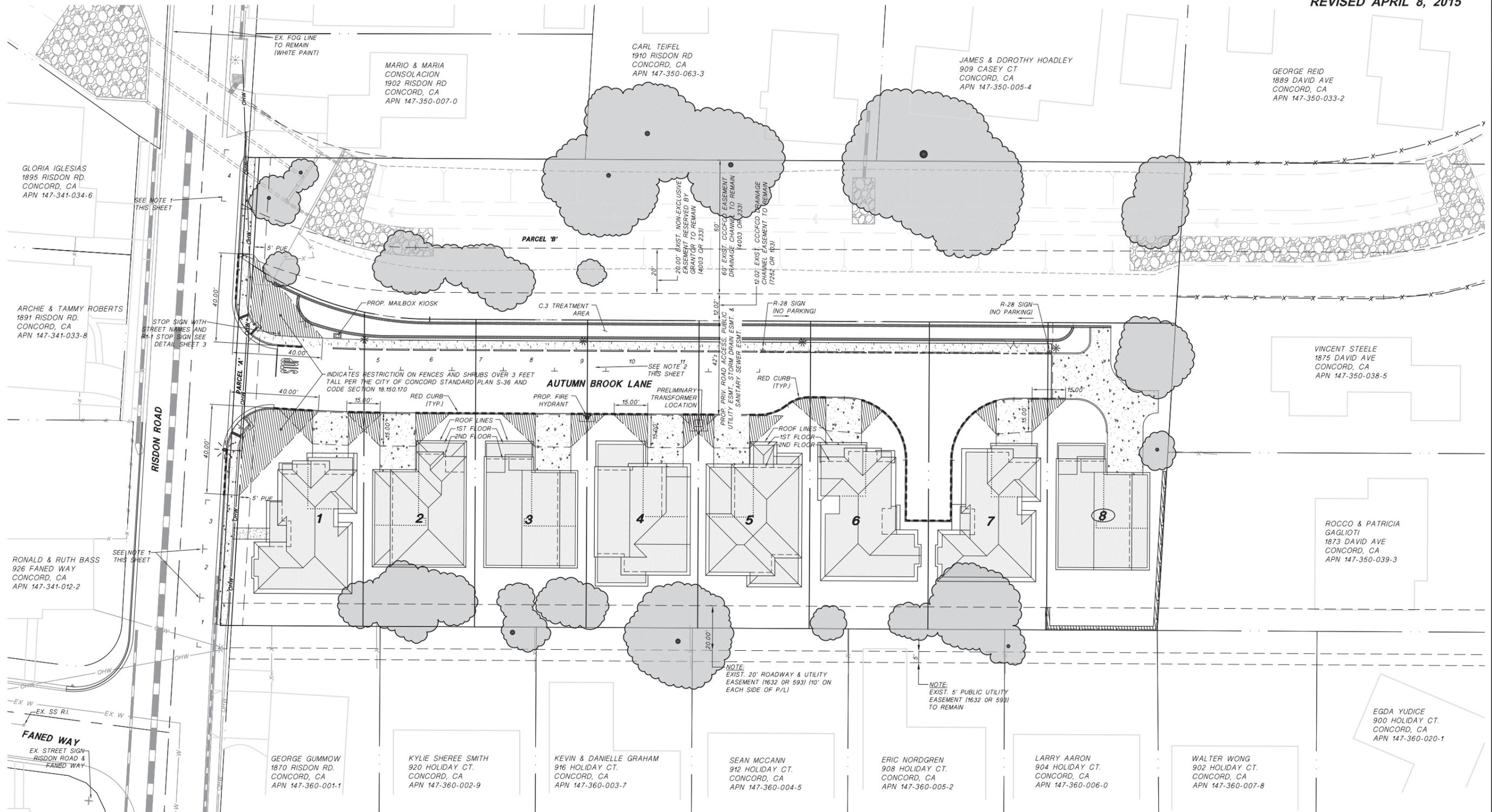
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TRAFFIC SIGNING / STRIPING / CORNER SETBACK PLAN

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LEGEND
 - - - - - INDICATES RED PAINTED CURB

NOTES:

1. PARKING INDICATED ON RISDON ROAD (SPACES 1 THROUGH 4) ARE FOR REFERENCE ONLY AND WILL NOT BE STRIPED.
2. PARKING INDICATED ON AUTUMN BROOK LANE (SPACES 5 THROUGH 12) WILL BE STRIPED.
3. THE VISIBILITY TRIANGLES AS SHOWN ARE PER THE CITY OF CONCORD STANDARD DETAIL S-36.



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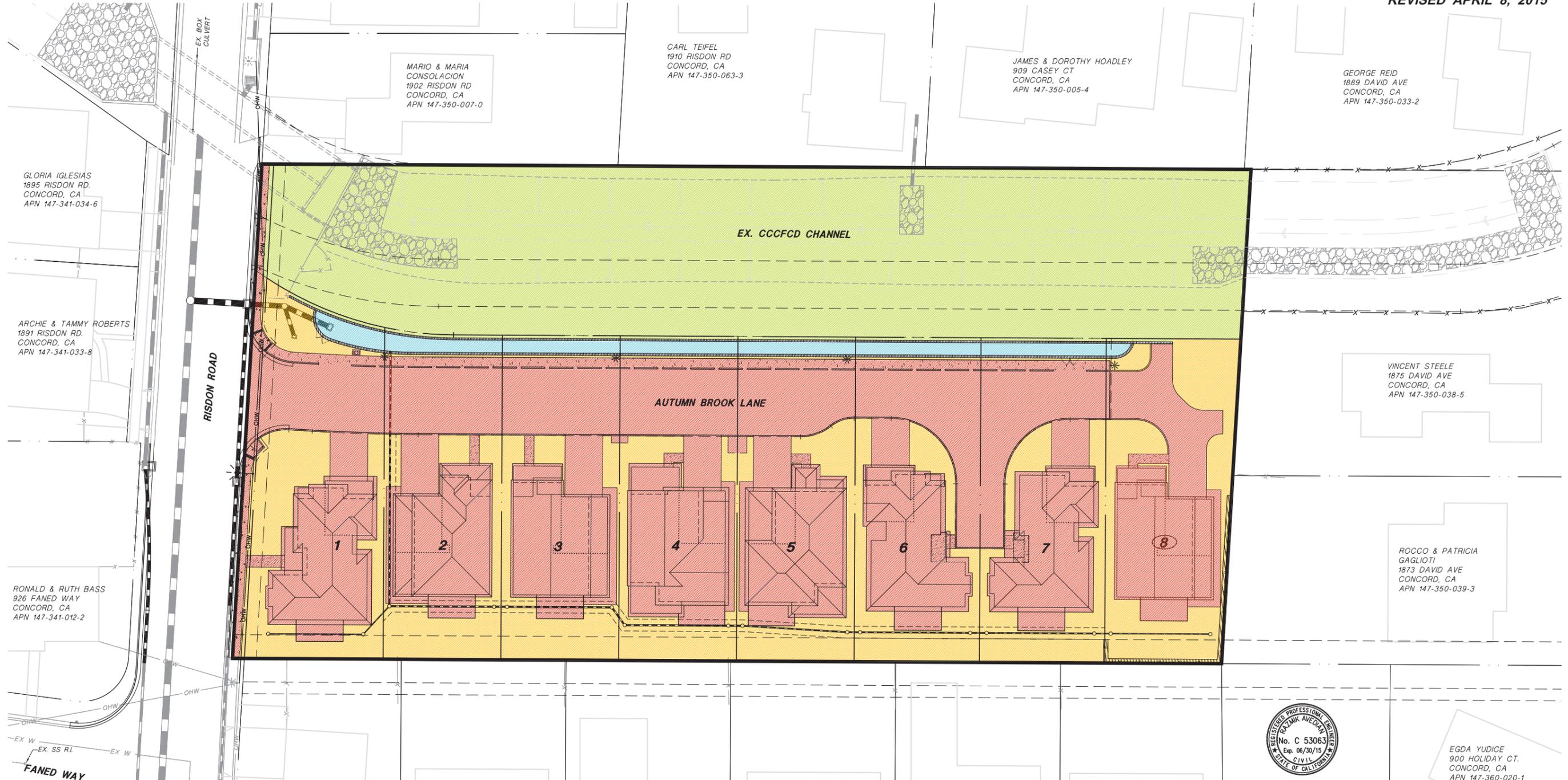
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AUTUMN BROOK

CONCORD, CALIFORNIA

PRELIMINARY STORMWATER CONTROL PLAN

OCTOBER 8, 2014
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LEGEND

	IMPERVIOUS AREAS DRAINING TO IMP	
	DMA 1 (BUILDING FOOTPRINT)	17,489± SF
	DMA 2 (DRIVEWAYS, WALKWAYS & PATIOS)	7,280± SF
	DMA 3 (PRIVATE LANE & SIDEWALK)	13,365± SF
	PERVIOUS AREAS DRAINING TO IMP	
	DMA 4 (LANDSCAPED AREAS)	17,361± SF
	BIORETENTION / BIOSWALE AREA (IMP)	
	DMA 5 (SIZED PER CCCWP REQUIREMENTS)	1,956± SF
	SELF-TREATING AREA	
	CONTRA COSTA COUNTY FLOOD CONTROL CHANNEL	

DMA NAME	AREA SF	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA x RUNOFF FACTOR	IMP SIZING			
					IMP SIZING FACTOR	RAIN ADJUSTMENT FACTOR	MINIMUM AREA OR VOLUME	PROPOSED AREA OR VOLUME
DMA 1	17,489	CONVENTIONAL ROOF	1.00	17,489				
DMA 2	7,280	CONCRETE OR ASPHALT	1.00	7,280				
DMA 3	13,365	CONCRETE OR ASPHALT	1.00	13,365				
DMA 4	17,361	LANDSCAPE	0.10	1,736				
DMA 5	1,956	LANDSCAPE	0.10	196				
TOTAL				40,066				
				AREA	0.0400	1.0000	1,603	1,956

IMPORTANT NOTE:
 EXISTING IMPERVIOUS SURFACE AREA OF EXISTING HOUSE AND CONCRETE DRIVEWAY IS APPROXIMATELY 2,731± SF, WHICH HAS NOT BEEN CONSIDERED IN THE CLEAN WATER CALCULATIONS.

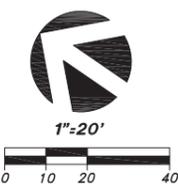
NOTE:
 BUILDING FOOTPRINTS, WALKWAYS AND PATIOS SHOWN ARE ILLUSTRATIVE ONLY FOR CALCULATING THE APPROXIMATE IMPERVIOUS AREA USED IN DETERMINING THE REQUIRED C.3 TREATMENT AREA AND MAY NOT REPRESENT THE FINAL CONFIGURATION.



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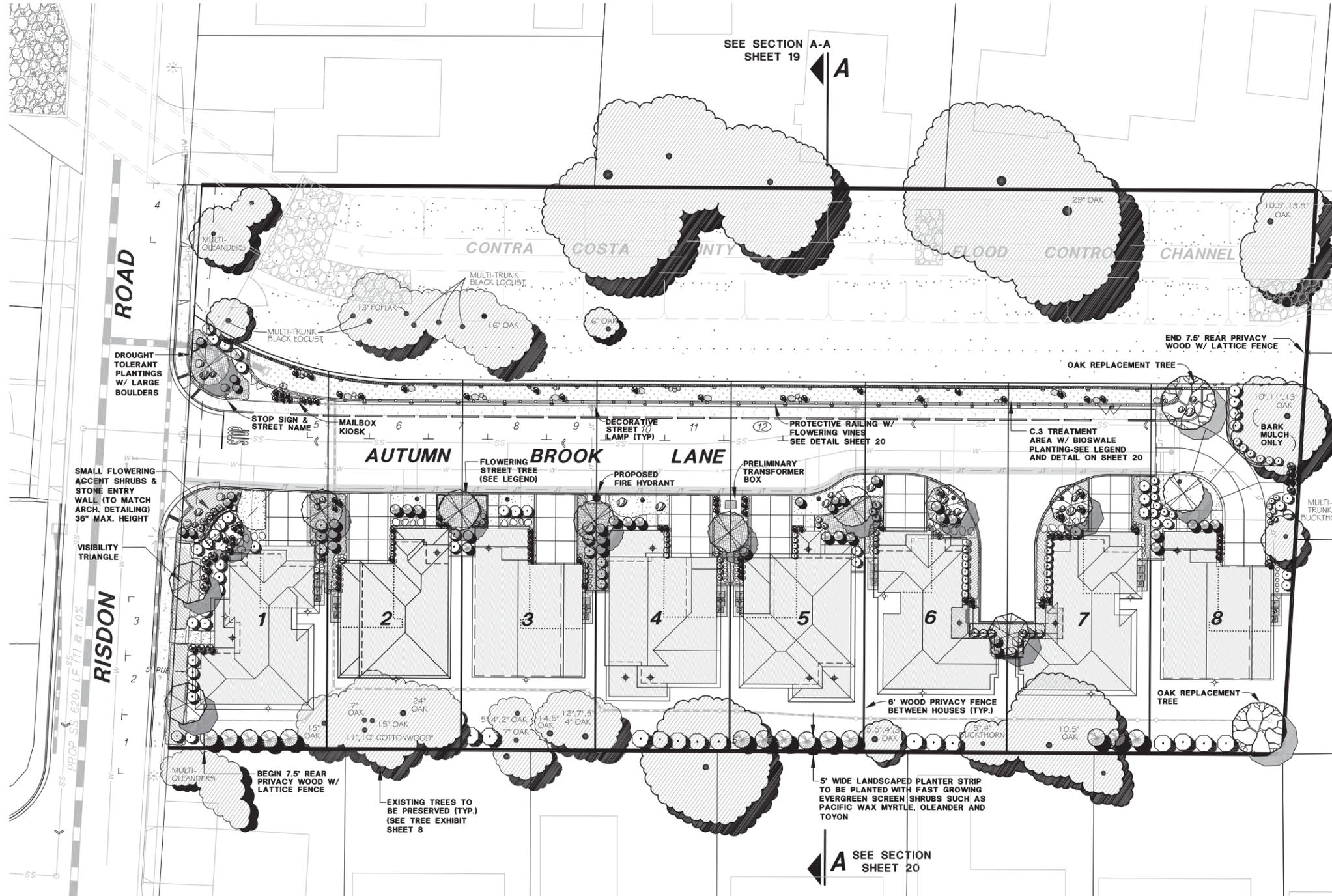


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PRELIMINARY LANDSCAPE PLAN

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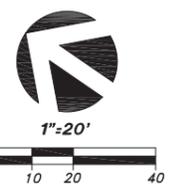


KEY PRELIMINARY PLANT PALETTE	
TREES	
	LAGERSTROEMIA I. 'DYNAMITE' ... RED CRAPE MYRTLE *
	PRUNUS C. 'KRAUTER VESUVIUS' ... PURPLE LEAF PLUM *
	QUERCUS AGRIFOLIA ... COAST LIVE OAK
	LAGERSTROEMIA I. 'NATCHEZ' ... WHITE CRAPE MYRTLE *
SHRUBS	
	AGAPANTHUS 'PETER PAN' ... DWARF LILY OF THE NILE
	BERBERIS T. 'CRIMSON PYGMY' ... RED JAPANESE BARBERRY
	CEANOTHUS M. 'VALLEY VIOLET' ... DWARF CALIFORNIA LILAC
	COLEONEMA P. 'SUNSET GOLD' ... DWARF OF HEAVEN
	DIETES VEGETA ... FORTNIGHT LILY
	FESTUCA G. 'ELIJAH BLUE' ... BLUE FESCUE
	HEMEROCALLIS H. 'YELLOW' ... EVERGREEN DAYLILY
	HETEROMELES ARBUTIFOLIA ... TOYON
	KNIPHOFIA UVARIA 'ECHO MANGO' ... TORCH LILY
	LIRIOPE MUSCARI 'BIG BLUE' ... BIG BLUE LILYTURF
	MYRICA CALIFORNICA ... PACIFIC WAX MYRTLE
	NANDINA D. 'COMPACTA' ... COMPACT HEAVENLY BAMBOO
	NERIUM OLEANDER 'WHITE' ... WHITE OLEANDER
	NERIUM OLEANDER 'PETITE PINK' ... DWARF OLEANDER
	PHORMIUM T. 'AMAZING RED' ... DWARF NEW ZEALAND FLAX
	PITOSPORUM T. 'VARIEGATA' ... VARIEGATED TOBIRA
	ROSA FLOWER CARPET 'PINK SUPREME' ... PINK CARPET ROSE
	SALVIA LEUCANTHA ... MEXICAN SAGE
	TULBAGHIA V. 'SILVER LACE' ... VARIEGATED SOCIETY GARLIC
GROUNDCOVERS	
	ARCTOSTAPHYLOS 'EMERALD CARPET' ... CARPET MANZANITA
	FRAGARIA CHILIOENSIS ... MOCK STRAWBERRY
	GAZANIA 'DAYBREAK ORANGE' ... ORANGE GAZANIA
	VINCA MINOR 'BOWLES' ... DWARF PERIWINKLE
	MYOPORUM PARVIFOLIUM 'PINK'
VINES	
	FICUS PUMILA ... CREEPING FIG
	SOLANUM JASMINOIDES ... WHITE POTATO VINE
	CLYTOSTOMA CALLISTEGIOIDES ... VIOLET TRUMPET VINE
BIOSWALE C.3 PLANTING	
	CAREX SPP. ... SEDGE
	JUNCUS SPP. ... RUSH
	IRIS DOUGLASIANA ... DOUGLAS IRIS
MOSS ROCK BOULDERS	
	1 1/2" - 3 1/2" DIAMETER
EXISTING TREE	
	EXISTING TREE TRUNK SURVEYED & IDENTIFIED TO BE SAVED IF POSSIBLE
FENCING LEGEND	
	6' HIGH WOOD PRIVACY FENCING (7.5' HIGH IN REARYARDS ADJACENT TO NEIGHBORS)
	42" BLACK TUBULAR STEEL FENCING (AROUND C.3 WATER QUALITY TREATMENT AREA)

* NOTES: 1. TREES COMPLY WITH PACIFIC GAS AND ELECTRIC'S PUBLICATION "A SELECTION & PLANTING GUIDE TO SMALL TREES NEAR DISTRIBUTION LINES FOR NORTHERN CALIFORNIA" DATED 2010
 2. NO TREES OR STRUCTURES SHALL BE PLANTED OVER UTILITY LINES.

NOTES:

- ALL FRONTYARD PLANTING AREAS, INCLUDING THE PRIVATE LANE AND C.3 EASEMENT, SHALL BE IRRIGATED AND MAINTAINED BY THE HOA. PLANTS SHALL BE IRRIGATED BY AN AUTOMATIC SPRINKLER SYSTEM UTILIZING MATCHED, LOW PRECIPITATION HEADS ALONG WITH DRIP IRRIGATION AND INCLUDE AN AUTOMATIC MULTI-PROGRAMMABLE CONTROLLER EQUIPPED WITH RAIN SENSORS AND AN AUTOMATIC SHUT-OFF DEVICE.
- ALL PLANTING AREAS SHALL RECEIVE A 3" LAYER OF 1/4 - 3/4 BARK MULCH. BARK TO BE KEPT CLEAR OF TRUNKS TO AVOID ROOT ROT.
- PLANTING SIZE: STREET TREES SHALL BE - 24" BOX, SHRUBS - 5 GALLON, ACCENT PERENNIALS GROUNDCOVERS AND VINES - 1 GALLON.
- PLANT MATERIAL AND IRRIGATION DESIGN SHALL COMPLY WITH THE CALIFORNIA WATER EFFICIENCY STANDARDS
- SEE SHEET 3 FOR MAILBOX KIOSK, DECORATIVE STREET LAMP AND COMBINATION STOP SIGN AND STREET SIGN DETAILS
- SEE SHEET 20 FOR FENCING DETAILS
- SEE SHEET 8 FOR THE LOCATION OF ALL EXISTING TREES ON THE SITE WITH A TRUNK DIAMETER OF 4" OR GREATER (MEASURED 4-1/2" ABOVE GRADE). TREES ARE IDENTIFIED BY SIZE AND SPECIES AND WHETHER THEY ARE TO BE REMOVED OR PRESERVED. FOR SPECIFIC CONDITION AND RECOMMENDATION OF INDIVIDUAL TREES SEE ARBORIST REPORTS.
- EXISTING AND PROPOSED UTILITIES ARE SHOWN AS SCREENED LINES FOR REFERENCE ONLY TO IDENTIFY AND AVOID POTENTIAL CONFLICT BETWEEN UTILITIES AND TREE PLANTINGS.
- TRASH RECEPTILES SHALL BE PLACED BEHIND A SOLID GATED WOOD FENCE ON CONCRETE PAVERS LOCATED ON THE SERVICE SIDE OF THE BUILDING.



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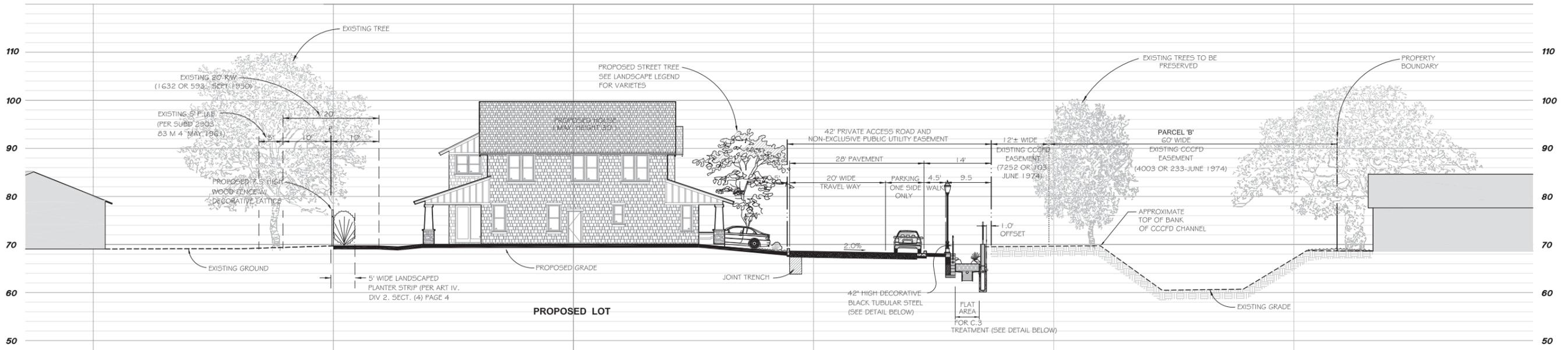
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AUTUMN BROOK

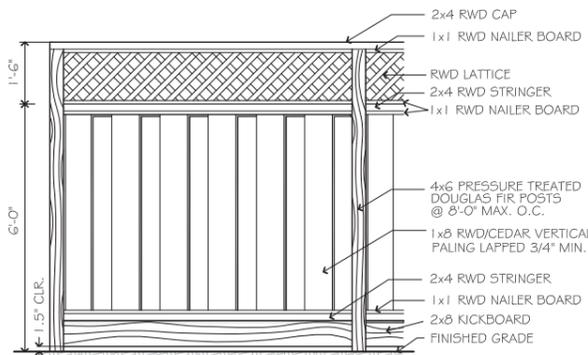
CONCORD, CALIFORNIA

PRELIMINARY LANDSCAPE SECTIONS & DETAILS

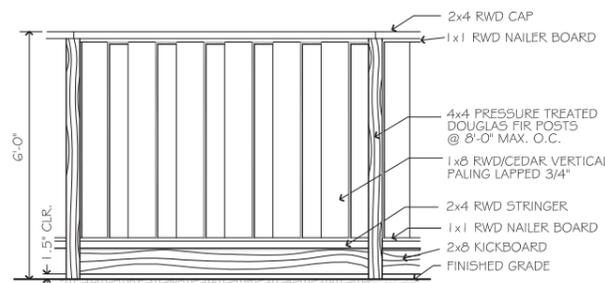
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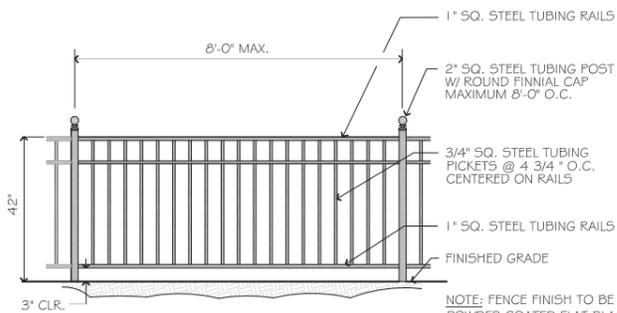
SECTION / ELEVATION A - A SCALE: 1" = 10'
 LOOKING NORTH THRU MIDDLE OF SITE TOWARD RISDON ROAD



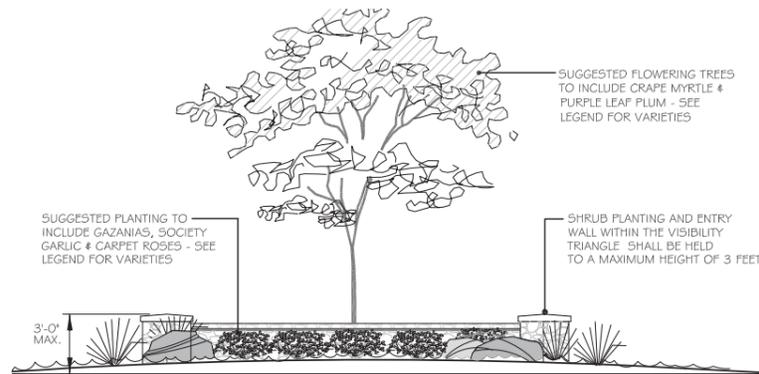
7.5' REAR PRIVACY FENCE DETAIL
 * MINOR EXCEPTION REQUESTED TO GIVE EXISTING NEIGHBORS ADDITIONAL PRIVACY



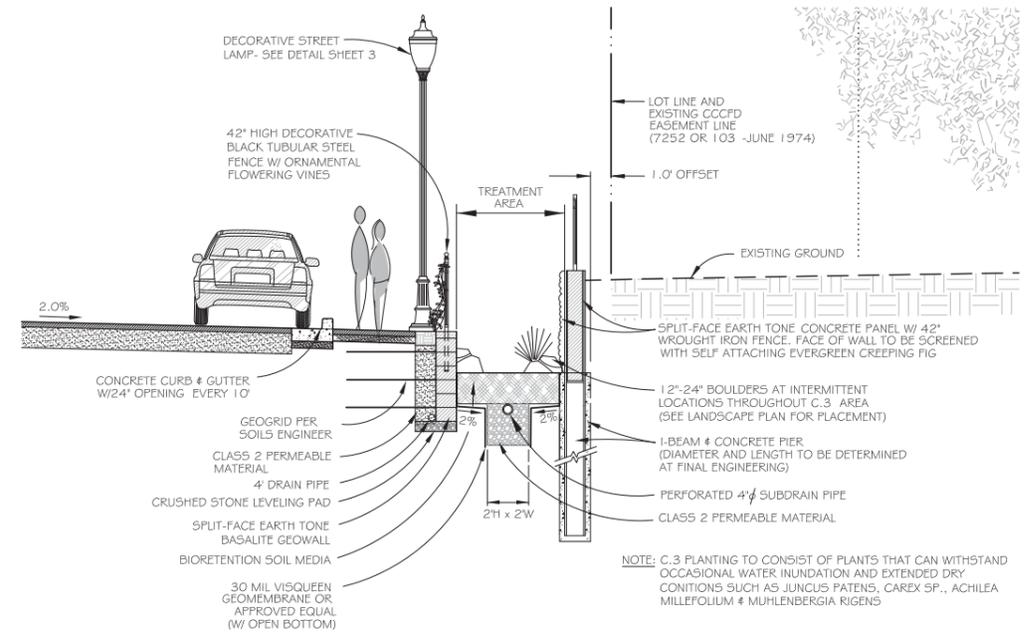
6' WOOD PRIVACY FENCE DETAIL
 N.T.S.



42" BLACK TUBULAR STEEL FENCE DETAIL @ C.3 TREATMENT AREA
 N.T.S.



ENTRY WALL PLANTING - ELEVATION
 N.T.S.



C.3 TREATMENT AREA DETAIL
 N.T.S.



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APPENDIX C

STORMWATER CONTROL PLAN

AUTUMN BROOK

Subdivision 9392

Single Family Residential Development

Stormwater Control Plan

**City of Concord
California**

October, 2014

**Prepared for:
Zheng Tan**

Prepared by:

*P/A Design Resources, Inc.
3021 Citrus Circle
Suite 150
Walnut Creek, California 94598*

Job No. 13019-10-0340

A report prepared for:

Mr. Zheng Tan
1233 Pine Creek Way, Unit A
Concord, California 94520-3642
Ph (530)-219-3486

**Stormwater Control Plan
Autumn Brook
Subdivision 9392
Single Family Residential Development
City of Concord, California**

P/A Design Resources, Inc. Job No. 13019-10-0340

Ross Avedian, PE
Principal/ Civil Engineer

David L. Perrings, PE
Civil Engineer

P/A Design Resources, Inc.
3021 Citrus Circle
Suite 150
Walnut Creek, California 94598
(925)-210-9300

October, 2014

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Stormwater Control Plan
Autumn Brook Single-Family Residential Development
Concord, California

I. Project Settings

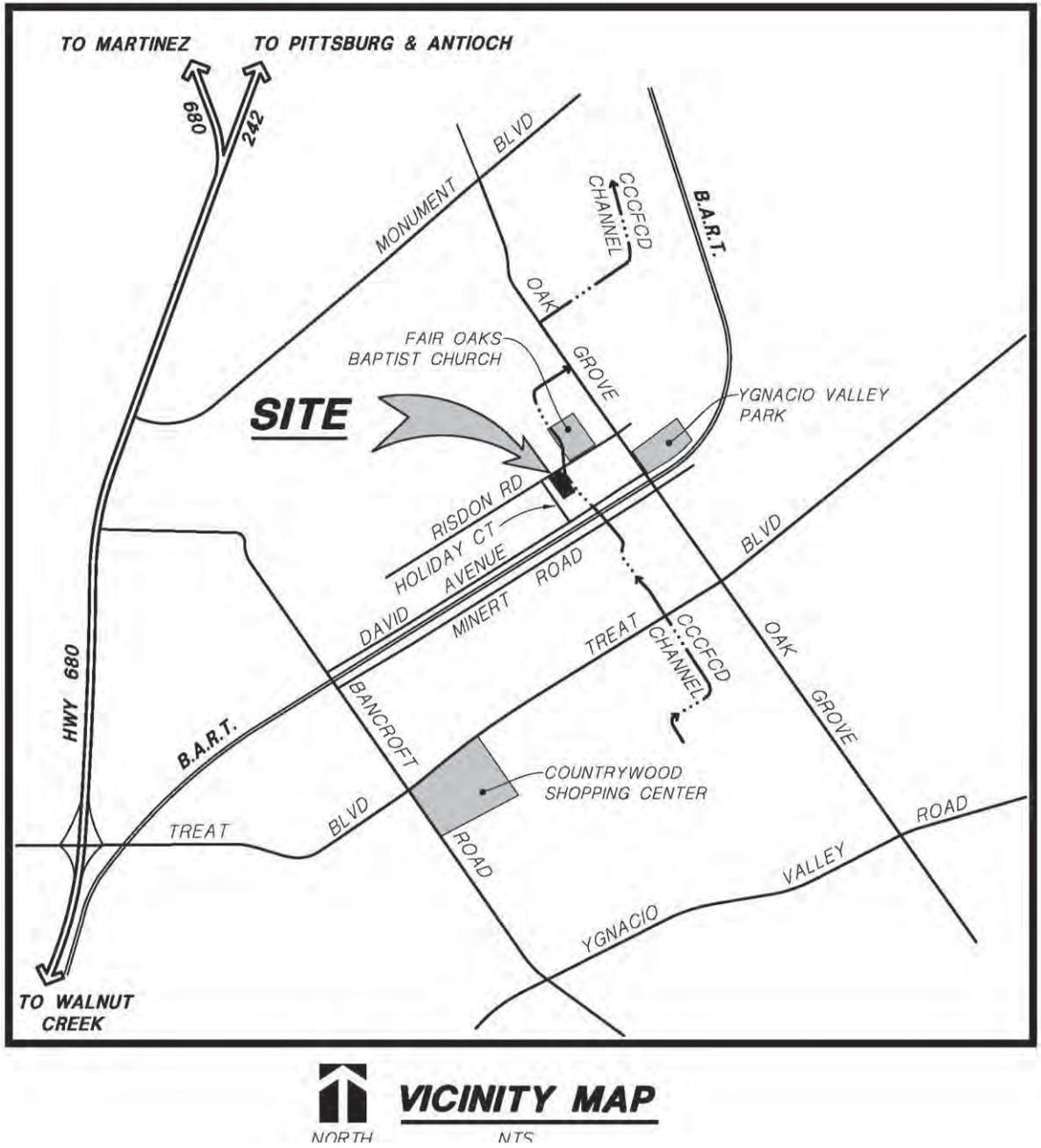
A. Project Name, Location, Description

This report has been prepared to comply with the requirements of Contra Costa Clean Water Program's Stormwater C.3.Program (**Reference 1**) and to meet the requirements of the City of Concord's Design Review Application Checklist, dated April 8th, 2013 (**Reference 2**).

The Autumn Brook site is located at 1890 Risdon Road (APN-147-350-003), Concord California as shown on **Figure 1, Vicinity Map**. The existing site area is approximately 2.02 acres as determined from County Assessor's records. Currently existing on the site is one currently unoccupied residential structure with a fence, gazebo, shed and existing well located in the North West portion of the site. A significant portion of the site is occupied by an existing Contra Costa County Flood Control Canal. The canal is an important drainage and flood control facility serving the surrounding area. This facility is to remain and currently occupy's 29,269 SF (0.67 acres) of the project site. The overall site is relatively flat with a cross slope of less than two percent.

A residential development of eight single family homes with a private lane with access off of Risdon Road is proposed to share the site with the existing flood control canal.

Figure 1: Vicinity Map



The primary facilities located on the project site (**See Figure 2**) will consist of the following (**Reference 3**):

- 8 detached single family homes.
- Paved street area for vehicular access to the houses.
- Standard fire department turnaround area
- Driveways.
- Parking stalls: 8 full size 8ft by 22 ft guest parking spaces on project's private lane and 4 public parking spaces along Risdon Road frontage.
- Landscape areas.
- One Bio swale for water quality.
- Closed conduit storm drainage system that ties into existing 33 inch storm drain in Risdon Road
- Existing flood control channel to be owned by the Home Owners Association (HOA) and maintained by the Contra Costa County Flood Control District subject to their existing easement.
-

Figure 2: Site Plan

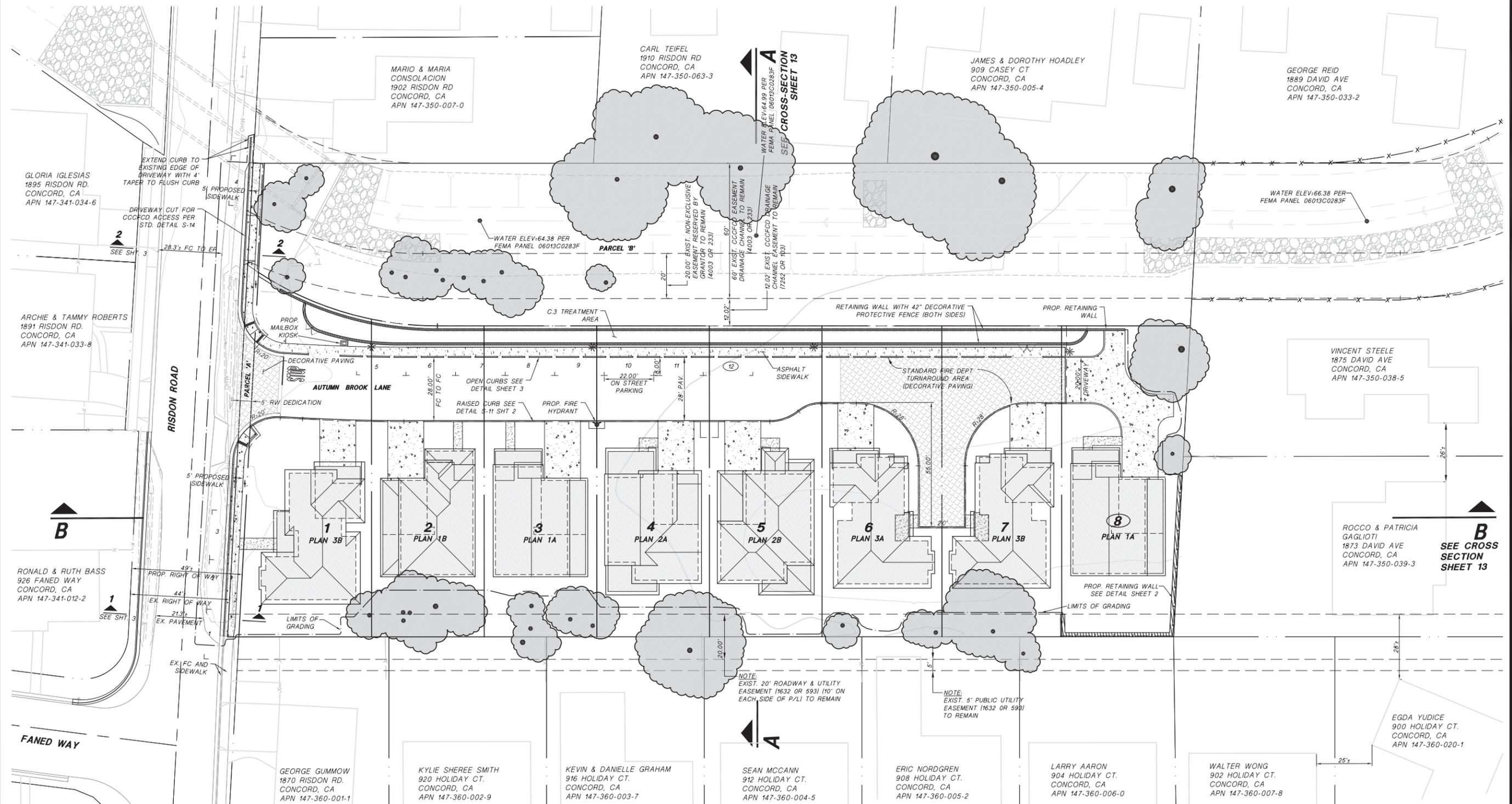
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AUTUMN BROOK

CONCORD, CALIFORNIA

SITE PLAN

OCTOBER 8, 2014



IMPORTANT NOTES

BOUNDARY NOTE

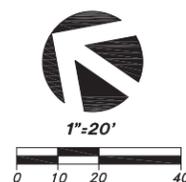
THE BOUNDARY SHOWN HEREON IS NOT BASED ON A BOUNDARY SURVEY BUT IS AN APPROXIMATE BOUNDARY COMPILED FROM AVAILABLE PUBLIC RECORD DATA.

TOPOGRAPHY NOTE

EXISTING TREE LOCATIONS AND TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD SURVEY CONDUCTED BY P/A DESIGN RESOURCES, INC. IN MAY 2014.

SETBACKS

SEE SHEET 9 FOR TYPICAL FRONT, SIDE AND REAR YARD SETBACKS. ALL DRIVEWAYS ARE A MINIMUM OF 20' DEEP FROM FACE OF CURB TO FACE OF GARAGE DOOR. ALL GARAGES ARE A MINIMUM OF 22 FEET DEEP.



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Figure 2

This project will conform to the storm water quality requirements of the City of Concord Design Review Application Checklist and the Contra Costa County Clean Water Program's Stormwater C.3. Guidebook.

The City of Concord Design Review Application Checklist requirement for Stormwater Quality states:

“If the project creates or replaces more than 10,000 sq. ft of impervious area, a Stormwater Control Plan is required.”

The total amount of impervious area (buildings and all other hardscape surfaces) being created and replaced is 36,373 sf therefore a Stormwater Control Plan is required.

According to the Contra Costa County Clean Water Program's Stormwater C.3. Guidebook this project falls within the threshold of Group 2 (greater than 10,000 Square Feet to less than 1 Acre) for replacement or creation of new impervious surfaces as shown on Table 1-1 in the Stormwater C.3 Guidebook (Reference 1). Therefore, the requirement for Treatment and Source Control Measures for stormwater runoff apply; but, the requirements for Hydromodification (HMP), or flow control is not applicable to this project since it is less than 1 acre.

B. Existing Site Features and Conditions

The existing residential structure is currently vacant and in an advanced stage of disrepair. The site is rectangular in shape. Existing residential developments abut both the southeast and southwest sides of the project site. The existing impervious surface area on the site is **2,731 sf**.

Figure 3: Existing Site Conditions and Topography

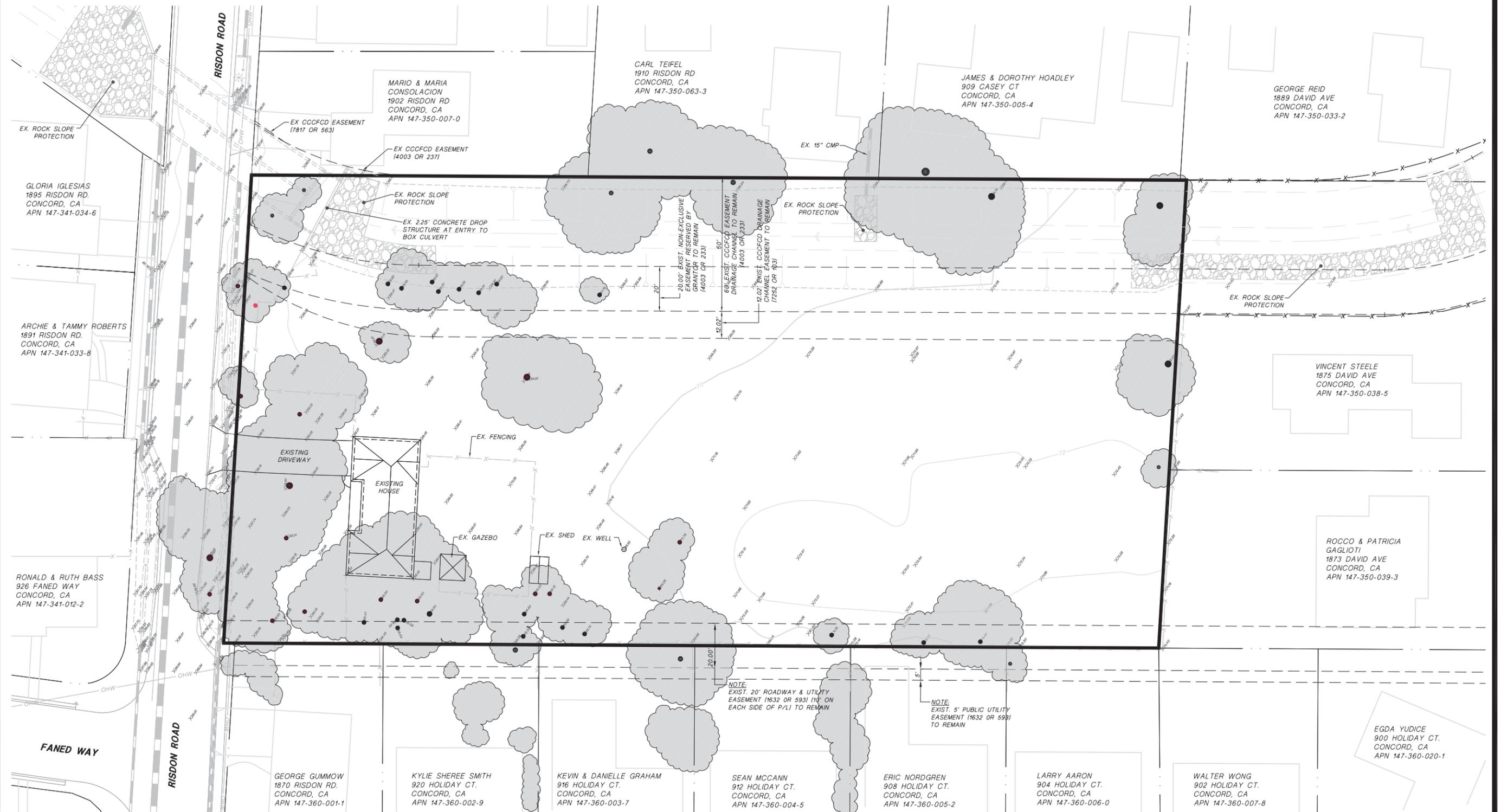
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AUTUMN BROOK

CONCORD, CALIFORNIA

EXISTING SITE TOPOGRAPHIC CONDITIONS

OCTOBER 8, 2014



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Figure

3

Existing Site Drainage

The current site drainage is presented on **Figure 3**. Excluding the existing flood control channel there is no offsite areas draining onto the project site. The site drains by overland flow either to the existing flood control canal or to the existing drainage ditch along the southeast side of Risdon Road.

The project site is not subject to inundation and can be found on the FEMA Flood Insurance Rate Map (FIRM), Community – Panel Number 06013C0283F and located in an area designated as ‘Zone AE within the canal and Zone X (500 yr floodplain) outside of the channel.’.

Existing Vegetative Cover and Impervious Areas

The portion of the project site outside of the limits of the CCCFC Channel is primarily vacant and fallow with the exception of the one existing residential structure and it’s couple of surrounding out buildings and existing trees. An Arborist Tree Report prepared by Tarverso Tree Service identified **42** trees in various states of health ranging from good, fair and poor. To be saved if possible are **25** trees and to be removed are **17** trees.

The existing impervious area on the site which consists of an existing residential structure gazebo and shed covers an area of **2,731 sf** and is shown on **Figure 3** Existing Site Conditions and Topography.

Existing Climate Characteristics

The climate in the vicinity of the site reflects the Mediterranean climates of the central interior regions of California and is characterized by cool, wet winters and hot, dry summers. Long term data shown on the Contra Costa County Public Works Department Mean Seasonal Isohyets Map B-166 dated December 1977 (**Reference 5**) indicates that rainfall at the site averages approximately 17.5 inches per year.

Existing Geology, Soils and Groundwater

A Geotechnical Investigation was prepared for the Autumn Brook site by Engeo, Incorporated, dated February 18th, 2014 (see **Reference 6**). Groundwater was encountered in several borings on the site at depths of **8.5 ft** and **13 ft**. The groundwater levels correspond to the levels observed within the channel. Engeo recommends that the proposed bio swale be lined.

Near surface soils that were tested indicate the site soils have a high expansion potential (**Plasticity Index (PI) of 30.**). The hydrologic soil classification for the soil is **Type D**.

The design of the water quality treatment bio-swale along the northeastern side of the development area will need to account for the anticipated high clay content and density of the underlying soils, the near-surface site soils are not expected to have adequate permeability values to handle stormwater infiltration. Therefore, best management practices should assume that little stormwater infiltration will occur at the site.

Although infiltration rates are expected to be low, clayey soils can be weakened by water infiltration and saturation, which can cause problems for adjacent improvements. The

bio-swale should be designed with impermeable liners, subdrains, and their excavations should be situated outside a 1:1 line of projection extending downwards from nearby improvements (such as curb, street, site wall, or house) unless retaining side walls are planned. Bioretention soil treatment mixes should be compacted to at least 85 percent relative compaction.

Biological Resources Analysis

A Biological Resources Analysis Report was prepared for the project site by Marylee Guinon LLC, OLBERDING Environmental, Inc. in April of 2014 (**Reference 7**). The purpose of the report was to identify sensitive plant and wildlife species, sensitive habitats, and biological constraints potentially occurring on the Property and to provide an assessment of the potential need for jurisdictional governmental permits.

The Reports recommendations are as follows:

Wetlands/Waters—The project as proposed is devoid of any impact (fill or storm drain outfall) to the channel, therefore authorization under Section 404 and 401 of the Clean Water Act (CWA) and authorization under Section 1600 of the Fish and Game Code is not required.

Pre-Construction Bird Survey—If project construction activities are to occur during the months of February thru August preconstruction surveys for nesting passerine birds within the project site and the surrounding area of influence should be conducted.

Pre-Construction Bat Survey—To avoid “take” of special-status bats, mitigation measures shall be implemented prior to the removal of any existing trees or demolition of structures on the project site.

Erosion Control—Appropriate mitigation measures shall be implemented to avoid or minimize the impacts to aquatic organisms. These measures may include best management practices (BMP’s) such as hay bales, silt fencing, placement of straw mulch and hydro seeding of exposed soils after construction as identified in the Storm Water Pollution Prevention Plan (SWPPP).

C. Opportunities and Constraints for Stormwater Control

1. Opportunities

The site is relatively flat. The site is divided into a total of five Drainage Management Areas, DMA’s for water quality treatment purposes. The DMA’s will drain to the Integrated Management Practice, **IMP** for treatment. The IMP for the site is a bio-swale covering an area of **1,956 sf**. The bio-swale outlets into the on-site storm drain located at the northwest side of the bio-swale continuing to and connecting into the existing 33 inch storm drain line in Risdon Road. The bio-swale is designed to treat the low flows from the project site in accordance with C.3 requirements. The swale is designed to pass thru higher storm flows that do not require treatment into the storm drain line.

2. Constraints

The small size of the project area results in limited space to consider the use of multiple IMP measures to treat the storm water runoff.

Constraints include low-permeability soils (NRCS Hydrologic Soil Group D). Disposal of runoff to deep infiltration is not feasible due to the low permeability of the clay soils.

There is no run-on from adjacent sites so only onsite flows, excluding the flood control channel area needs to be treated.

3. Maximum Extent Practicable

Stormwater controls are being proposed on the site to the maximum extent practicable. The total hardscape area being treated is 36,373 sf (0.835 acres) which is 63% of the total developed project area. The bio-swale is located out in the open and is accessible for inspection and maintenance purposes.

II. Measures to Limit Imperviousness

The opportunity to limit imperviousness is constrained by the size of the project as previously mentioned. The proposed zoning designation for the project site is RL, low density residential which is in conformance with the City of Concord's current General Plan.

A. Measures Used to Limit Directly Connected Impervious Area

1. Site Design Features

The bio-swale will have the effect of causing a break in the flow from the impervious areas for the low flows which are to be treated. The higher storm flows will bypass the bio retention pond and flow directly into the storm drain system.

2. Pervious Pavements

Pervious pavement is not being purposed for this project site. Conventional pavement will be used.

3. Drainage Design

A closed conduit pipe system designed to drain the 10 yr design storm will drain the project site. The bio-swale will also drain into this system. The project will also provide for overland release for drainage of the 100 year storm.

III. Selection and Preliminary Design of Treatment BMP/IMPs

A. Selection of Appropriate BMP/IMPs

Runoff from roofs, parking stalls, driveways, pavement areas as well as lawn areas from each DMA will be collected and drained thru the bioretention areas.

The BMP/IMP bio-swale will be accessible for inspection and maintenance purposes. There is ample elevation relief across the site to provide sufficient hydraulic head to pass the water quality treatment and storm flows via gravity flow.

The requirements mentioned in the C.3 Manual to provide BMP/IMPs to mitigate peak flows and storm duration (hydro modification) is not considered in the design of this project since the project falls in the Group 2 category, less than one acre, which does not require Hydrograph Modification Management.

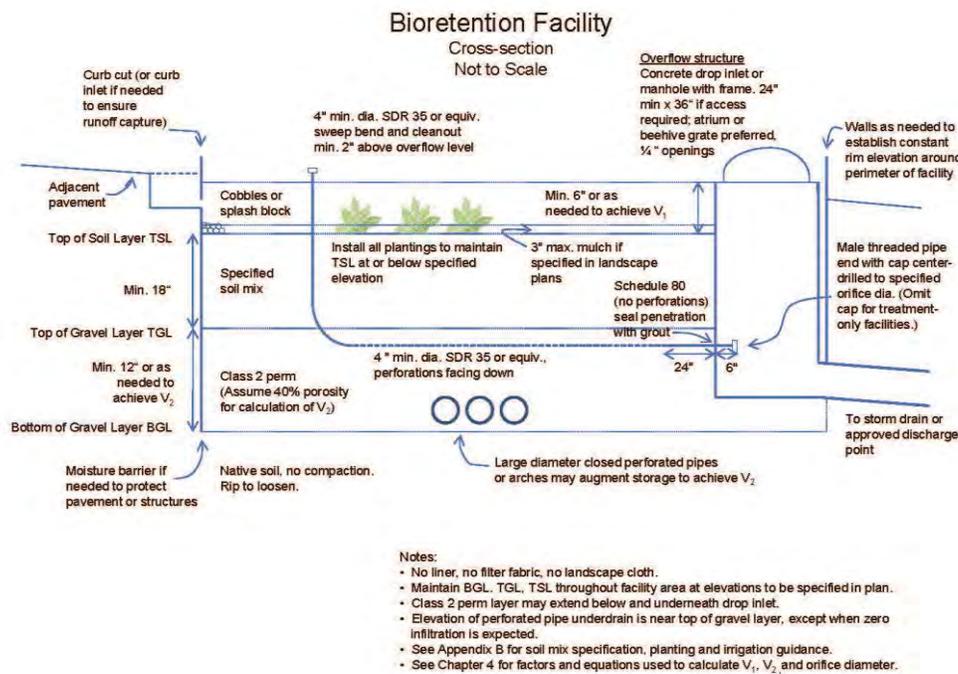
1. Consideration of Infiltration BMP/IMPs

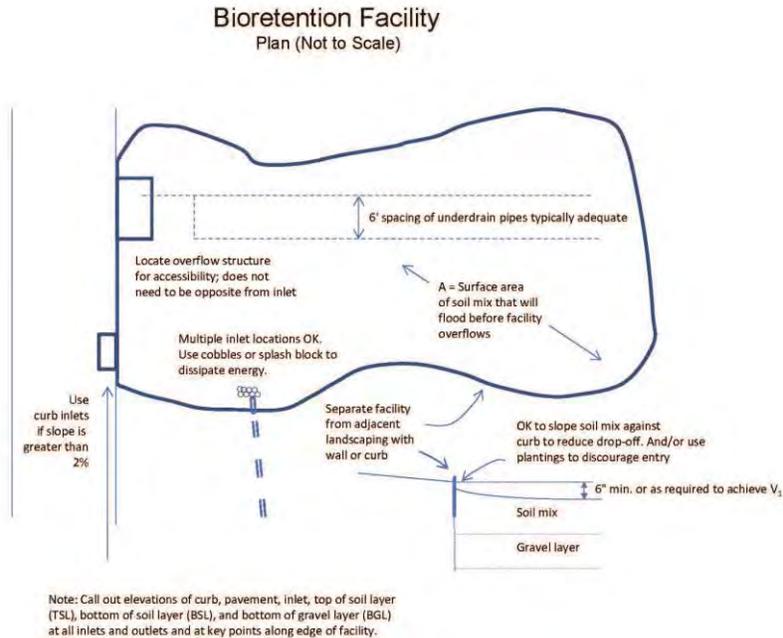
The existing site soil classification is D, rendering the use of direct infiltration BMP/IMP's impracticable.

2. Treatment BMP/IMPs

The primary treatment facility proposed is the bio-swale for treatment of all the on-site area. This facility will incorporate sub-drains and overflow outlet piping to insure positive drainage from the site. The ultimate outlet for both storm drainage and water quality treatment is into the existing 33 inch diameter storm drainage line that is located just to the north west of the site in Risdon Road (see **Figure 4: IMP- Bioretention Detail and Reference 1**).

Figure 4: IMP - Bioretention Detail





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3. Treatment Chain

The water quality treatment chain for the project site is designed to treat runoff from the impervious areas and the pervious areas. The treatment BMP/IMP is sized in accordance with criteria in the Contra Costa Clean Water Program *Stormwater C.3 Guidebook*.

4. Description of Drainage Areas and BMP/IMPs

The following Table provides a description of each of the treatment areas on the project site. This description augments what is shown on **Figures 5: The Preliminary Storm Water Control Plan and Figure 6: The Preliminary Grading and Drainage Plan which follows on the next two pages**. The area is designed to treat at low flows the stormwater runoff with a BMP/IMP. The areas are also designed to allow the storm water flood flows to pass thru the system without treatment of these larger flows. The Drainage Area ID's (example: DMA1) are also referred to as Drainage Maintenance Areas (DMA) see Table 1 on the following page.

Table 1: Description of BMP/IMP Treatment by Drainage Area

Drainage Area ID	Description of Surface to be Treated	BMP/IMP ID	Description of BMP/IMP
DMA1	Roof Area = 15,728 sf	IMP1	Bio-swale Area =1,956 sf
DMA2	Driveways, walkways and Patios = 7,280 sf	IMP1	“ditto”
DMA3	Private Lane and sidewalk = 13,365 sf	IMP1	“ditto”
DMA4	Landscape Area = 19,224 sf	IMP1	“ditto”
DMA5	Bio-swale Area = 1,956 sf	IMP1	“ditto”

The existing flood channel is considered a “self treating area”.

Figure 5 and Figure 6.

(See Foldout on next Two Pages)

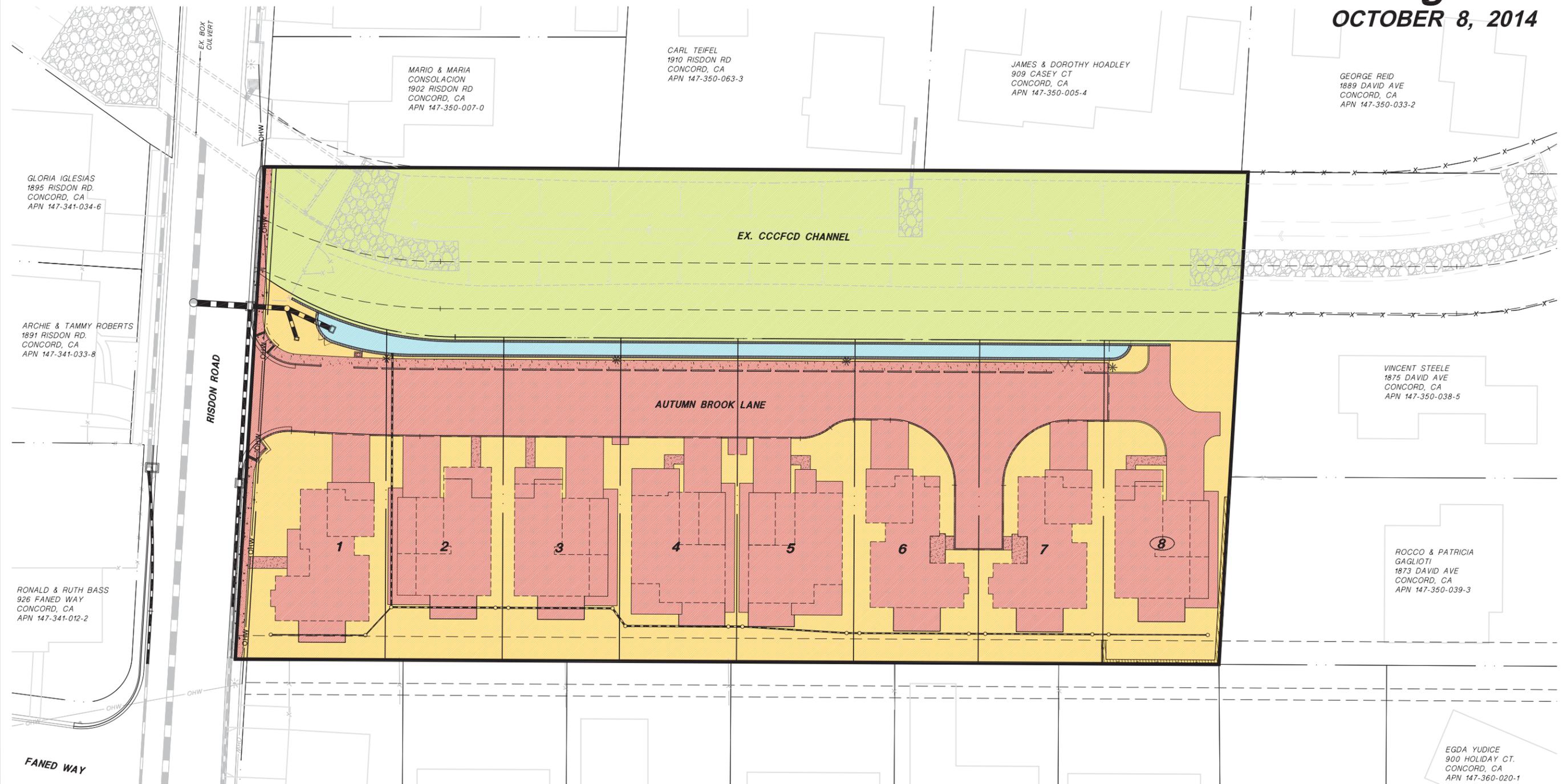
AUTUMN BROOK

CONCORD, CALIFORNIA

PRELIMINARY STORMWATER CONTROL PLAN

Figure 5

OCTOBER 8, 2014



LEGEND

- IMPERVIOUS AREAS DRAINING TO IMP**
DMA 1 (BUILDING FOOTPRINT) 15,728± SF
DMA 2 (DRIVEWAYS, WALKWAYS & PATIOS) 7,280± SF
DMA 3 (PRIVATE LANE & SIDEWALK) 13,365± SF
- PERVIOUS AREAS DRAINING TO IMP**
DMA 4 (LANDSCAPED AREAS) 19,224± SF
- BIORETENTION / BIOSWALE AREA (IMP)**
DMA 5 (SIZED PER CCCWP REQUIREMENTS) 1,956± SF
- SELF-TREATING AREA**
CONTRA COSTA COUNTY FLOOD CONTROL CHANNEL

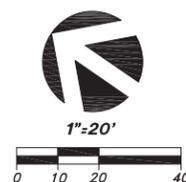
DMA NAME	AREA SF	POST PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA x RUNOFF FACTOR	IMP SIZING			
					IMP SIZING FACTOR	RAIN ADJUSTMENT FACTOR	MINIMUM AREA OR VOLUME	PROPOSED AREA OR VOLUME
DMA 1	15,728	CONVENTIONAL ROOF	1.00	15,728				
DMA 2	7,280	CONCRETE OR ASPHALT	1.00	7,280				
DMA 3	13,365	CONCRETE OR ASPHALT	1.00	13,365				
DMA 4	19,224	LANDSCAPE	0.10	1,922				
DMA 5	1,956	LANDSCAPE	0.10	196				
TOTAL				38,491				
				AREA	0.0400	1.0000	1,540	1,956

NOTE:

EXISTING IMPERVIOUS SURFACE AREA OF EXISTING HOUSE AND CONCRETE DRIVEWAY IS APPROXIMATELY 2,731± SF, WHICH HAS NOT BEEN CONSIDERED IN THE CLEAN WATER CALCULATIONS.

NOTE:

BUILDING FOOTPRINTS, WALKWAYS AND PATIOS SHOWN ARE ILLUSTRATIVE ONLY FOR CALCULATING THE APPROXIMATE IMPERVIOUS AREA USED IN DETERMINING THE REQUIRED C.3 TREATMENT AREA AND MAY NOT REPRESENT THE FINAL CONFIGURATION.



PA Design Resources, Inc.
Planning ■ Engineering ■ Surveying

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B. Locations and Elevations

The projects BMP/IMP treatment device will be gravity based and pumping will not be required. The BMP/IMP has been incorporated into the overall landscaping design for aesthetics, ease of maintenance and accessibility purposes.

C. Sizing Calculations and Table Summarizing Impervious Areas and BMP/IMPs

The sizing requirements for water quality treatment were determined using the Contra Costa Clean Water Program's IMP Sizing Calculator. IMP sizing results are presented in **Table 2** listed below. For each Drainage Management Area (DMA), the planned size of the IMP meets or exceeds the minimum size required for treatment

Table 2: Treatment BMP/IMP Sizing Worksheets

Project Name: 1890 Risdon Road
 Project Type: Treatment Only
 APN:
 Drainage Area: 57,553
 Mean Annual Precipitation: 17.5

IV. Areas Draining to IMPs

IMP Name: IMP1
 IMP Type: Bioretention Facility
 Soil Group: IMP1

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor	IMP Sizing Factor	Rain Adjustment Factor	Minimum Area or Volume	Proposed Area or Volume
DMA1	15,728	Conventional Roof	1.00	15,728				
DMA2	7,280	Concrete or Asphalt	1.00	7,280				
DMA3	13,365	Concrete or Asphalt	1.00	13,365				
DMA4	19,224	Landscape	0.10	1,922				
DMA5	1,956	Landscape	0.10	196				
Total				38,491	0.040	1.000	1,540	1,956

Report generated on 10/16/2014 12:00:00 AM by the Contra Costa Clean Water Program IMP Sizing Tool software (version 1.3.1.0).

D. BMP/IMP Measures on Project Site Plan and General Information

The existing site is shown on **Figure 3** while the proposed developed site plan with BMP/IMP's and drainage features is shown on **Figures 5 and 6**.

With the exception of any corrective grading as required by the geotechnical engineer the site is expected to balance. The compaction of on-site soils during construction will be performed per the specification and requirements of the Geotechnical Engineer.

The project civil, landscape and architecture plans will be designed to provide adequate reveal (drop) between hardscape areas and vegetated areas to allow for positive flow without ponding along the edge of hardscape areas. The runoff from paved areas will sheet flow onto vegetated areas. The occurrence of concentrated flow from paved areas on to vegetated areas will be minimized to the maximum extent practicable.

On site soils will be compacted as specified on the improvement plans in such a manner as to maximize infiltration to the maximum extent practical. Measure will be taken to prevent over compaction due to on-site construction practices.

The drainage improvements include a conventional storm drain system with the bio-retention ponds. The storm drainage improvements for the project will drain the 10 year storm drainage flows through the project site as well as provide overland release for up to the 100 year storm. These drainage facilities are laid out so as not to interfere with the operation of the BMP/IMP's. Preliminary sizing calculations using the modified rational method and flood routing techniques have been performed for this storm drainage and bio-retention system to insure that adequate space is reserved on the site for these facilities.

Other specific information such as on-site plant selection, access and periodic maintenance requirements will be provided as part of the project design drawings.

IV. Source Control Measures

A. Description of Site Activities and Potential Sources of Pollutants

The proposed site use is single-family housing. Source Controls shall be used as part of the SWCP for the prevention of, or limitation of, pollutants being released into surface water as a result of storm water runoff. This is the preferred method of pollution control since it is aimed at keeping pollutant out of the storm water (**References 8 and 9**).

This project has the following potential sources of stormwater pollutants:

- Pesticides used for indoor or structural pest control;
- Fertilizers, pesticides and herbicides used for residential landscape maintenance;
- Nutrient loading from household pets;
- Vehicle washing;
- Other vehicle related pollutants such as heavy metals, oil and grease.

B. List of Operational Source Control BMP/IMPs

The source controls are discussed in the following table.

C. Table of Permanent and Operational Source Control Measures

The following table demonstrates that both types of source control measures have been considered to the maximum extent practicable.

Table 3: Permanent and Operational Source Control Measures

Potential Source	Permanent BMPs	Operational BMPs
Indoor and structural pest control		Provide Integrated Pest Management (IPM) information to homeowners, lessees and operators
Landscape and outdoor pesticides, herbicides, rodenticides, fungicides and fertilizers	Final Landscape Plans will: 1)Minimize irrigation and runoff and promote infiltration where appropriate 2)Minimize use of fertilizers and pesticides 3)Use pest-resistant plants, especially adjacent to hardscape when possible 4)Use plantings appropriate for the site soils, slopes, climate, sun, wind, land use, ecological consistency and plant interactions	Landscape will be maintained using minimum or no pesticides Landscape will be maintained using minimum fertilizer application especially adjacent to hardscape IPM information will be provided to homeowners
Vehicle washing		Stormwater pollution prevention information will be distributed to homeowners
On-Site drain Inlets	Stencil the storm drain inlets at the bio retention pond with “No Dumping, Drains to Creek” using thermoplastic tape	
Interior floor drains	Interior floor drains will be plumbed to sanitary sewer	

Potential Source	Permanent BMPs	Operational BMPs
Need for future indoor and structural pest control	Obtain a letter from the Project Architect regarding the type of pest control that will be required for the type of building construction on the site.	

V. Summary of Permitting and Code Compliance Issues

The stormwater BMP/IMP’s are consistent with Contra Costa County codes and development requirements.

VI. BMP/IMP Operation and Maintenance Requirements

A. Ownership and Responsibility for Maintenance in Perpetuity.

1. Commitment to Execute any Necessary Agreements.

The project owner agrees to provide City of Concord the necessary easements or rights of entry for the purpose of access and inspection of the stormwater BMP/IMP’s.

2. Statement Accepting Responsibility for Operation and Maintenance of BMP/IMPs Until that Responsibility is Formally Transferred.

The project owner and applicant, accepts responsibility for maintenance and operation of the storm water BMP/IMP’s associated with this Stormwater Control Plan until the responsibility is transferred to the site owners. The owner and applicant also agrees to annex into an appropriate Assessment District that may be established to help fund the ongoing inspection and/or maintenance costs if the City of Concord were to take over these responsibilities in the future.

B. Summary of Maintenance Requirements for BMP/IMP.

The detailed maintenance requirements for the BMP/IMP’s will be presented in an Operations and Maintenance Plan and Schedule which will be submitted to City of Concord with the project’s application for building permits.

The general maintenance requirements for the proposed project IMP’s are listed below. More specific requirements will be presented in the O&M Plan when it is submitted in the future.

Bioretention

These BMP/IMPs remove pollutants primarily by filtering runoff slowly through an active layer of soil. Routine maintenance is needed to ensure that flow is unobstructed, that erosion is prevented, and that plant roots hold soils together and are biologically active. Typical maintenance consists of the following:

- Inspect inlets for channels, exposure of soils, or other evidence of erosion. Clear any obstructions and remove any accumulation of sediment. Examine rock or other material used as a splash pad and replenish if necessary.
- Inspect outlets for erosion or plugging.
- Inspect side slopes for evidence of instability or erosion and correct as necessary.
- Observe soil at the bottom of the swale or filter for uniform percolation throughout. If portions of the swale or filter do not drain within 48 hours after the end of a storm, the soil should be tilled and replanted. Remove any debris or accumulations of sediment.
- Examine the vegetation to ensure that it is healthy and dense enough to provide filtering and to protect soils from erosion. Replenish mulch as necessary, remove fallen leaves and debris, prune large shrubs or trees, and mow turf areas. When mowing, remove no more than 1/3 height of grasses. Confirm that irrigation is adequate and not excessive. Replace dead plants and remove noxious and invasive vegetation.
- Abate any potential vectors by filling holes in the ground in and around the swales and bioretention and by insuring that there are no areas where water stands longer than 48 hours following a storm. If mosquito larvae are present and persistent, contact the Contra Costa Mosquito and Vector Control District for information and advice. Mosquito larvicides should be applied only when absolutely necessary and then only by a licensed individual or contractor.

VII. Construction Plan C.3 Checklist

A construction plan checklist listed below will be added at the time of improvement plans for the project. The last column which is intentionally left blank will be filled in when the table is added to the improvement plans. The checklist will also include the following note: The final grading plan shall conform to the delineation of the drainage areas in the Final SWCP.

Table 4: Construction Plan C.3. Checklist

Stormwater Control Plan Figure # Or Page #	BMP/IMP ID &Description	See Plan Sheet #s
Fig. 2	IMP1- Bioretention Area	

VIII. Certification

The selections, size and preliminary design of treatment BMP's and other control measures in this plan meet the requirements of Regional Water Quality Control Board Order R2-2003-0022 and subsequent amendments.

References

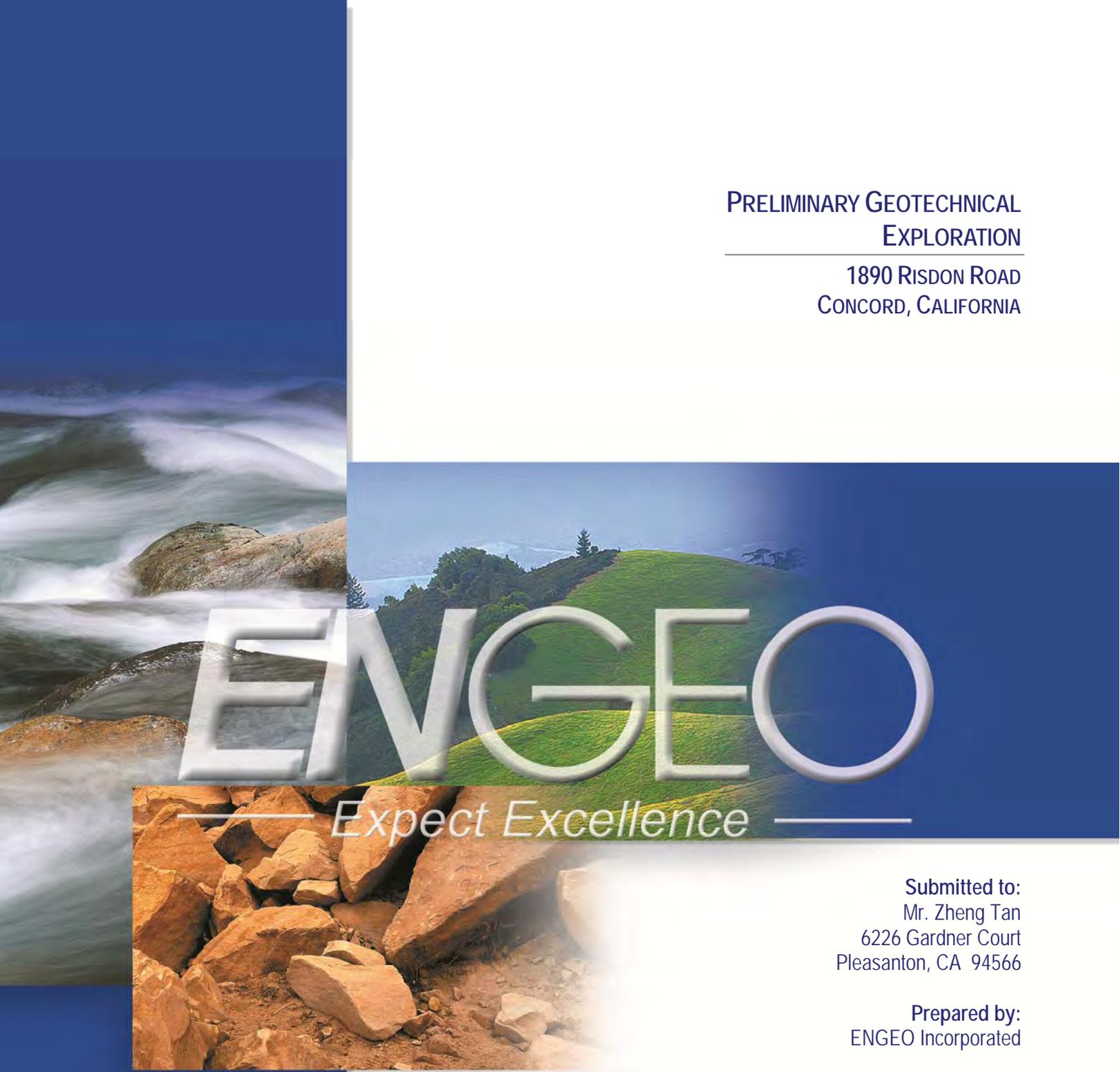
1. Stormwater C.3 Guidebook, Contra Contra Costa Clean Water Program, 6th Edition, February 15, 2012.
2. Design Review Application Checklist, City of Concord, California, form dated April 8th, 2013.
3. Autumn Brook, Subdivision 9392, A Quality Single-Family Detached Residential Project, City of Concord, California; Re-zoning, Planned Development Use Permit, Minor Use Permit, Major Subdivision/Tentative Map, Tree Removal and Minor Exception, P/A Design Resources, Inc., October 8th, 2014. .
4. Tree Inventory and Preliminary Assessment for 1890 Risdon Road. Traverso Tree Service, Walnut Creek, California, April 14, 2014.
5. Contra Costa County Public Works Department, Mean Seasonal Isohyets, Drawing Number B-166, dated December 1977.
6. Preliminary Geotechnical Exploration, 1890 Risdon Road, Concord, California; Prepared by Engeo Incorporated, Project Number 10873.000.000, Submitted to Mr. Zheng Tan, 6226 Garden Court, Pleasanton, California 94566, February 18, 2014.
7. Biological Resources Analysis Report for the Risdon Road Property (APN 147-350-003), Concord, Contra Costa County, California; Prepared for Mr. Zheng Tan, 1233 Pine Creek Way, Unit A, Concord, California 94520-3642, Prepared by Marylee Guinon LLC OLBERDING Environmental, Inc. Wetland Regulatory Consultants, 3170 Crow Canyon Place, Suite 260, San Ramon, California, 94583; April 2014.
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9. BASMAA. 1999. Bay Area Stormwater Management Agencies Association. Start at the Source: Design Guidance Manual for Stormwater Quality. Tom Richman and Associates. 154 pp. plus appendix.
www.cccleanwater.org/construction/nd.php#SATS

APPENDIX D

GEO TECHNICAL SURVEY

PRELIMINARY GEOTECHNICAL
EXPLORATION

1890 RISDON ROAD
CONCORD, CALIFORNIA



ENGEO

Expect Excellence

Submitted to:
Mr. Zheng Tan
6226 Gardner Court
Pleasanton, CA 94566

Prepared by:
ENGEO Incorporated

February 18, 2014

Project No:
10873.000.000

Project No.
10873.000.000

February 18, 2014

Mr. Zheng Tan
6226 Gardner Court
Pleasanton, CA 94566

Subject: 1890 Risdon Road
Concord, California

PRELIMINARY GEOTECHNICAL EXPLORATION

Dear Mr. Tan:

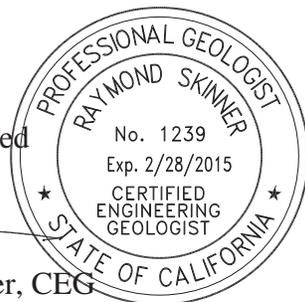
With your authorization, we have completed this preliminary geotechnical report for your property located at 1890 Risdon Road in Concord, California. The accompanying report presents our field exploration and limited laboratory testing together with our conclusions and preliminary recommendations regarding residential development at the site.

Our findings indicate that the project site is suitable for the proposed development provided the preliminary recommendations contained in this report are implemented during project planning. Additional design-level exploration services will be required in order to present grading, drainage, and foundation design recommendations. We are pleased to have been of service to you on this project and are prepared to consult further with you and your design team as the project progresses.

Sincerely

ENGEO Incorporated


Raymond P. Skinner, CEG
rps/mt/jf:pgex



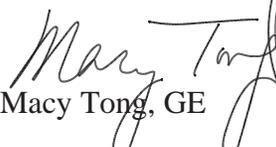

Macy Tong, GE



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INTRODUCTION

1.1 PURPOSE AND SCOPE

The purpose of this preliminary geotechnical exploration has been to identify geologic hazards within the project site and provide planning level recommendations for the proposed residential development. This study included the following scope of services:

- Review of published geologic maps and literature pertinent to the site.
- Performing a geologic reconnaissance by an ENGEO geologist.
- Examination of aerial photographs.
- Drilling two exploratory borings to characterize the site soils.
- Limited laboratory testing.
- Preparation of this preliminary geotechnical report summarizing our findings, conclusions and preliminary recommendations to assist in site planning.

We prepared this report exclusively for Mr. Zheng Tan and his design team consultants. ENGEO should review any changes made in the character, design or layout of the development to modify the conclusions and recommendations contained in this report, as necessary. This document may not be reproduced in whole or in part by any means whatsoever, nor may it be quoted or excerpted without the express written consent of ENGEO.

1.2 SITE LOCATION AND DESCRIPTION

The project site comprises approximately 2.02 acres of land located on the southeast side of Risdon Road as shown on the attached Vicinity Map, Figure 1. The northern portion of the site is currently occupied by a residential structure and various outbuildings with mature trees. An existing well was observed on the south side of the existing house at the location shown on the Site Plan, Figure 2. It is not known if there is an existing onsite septic system at the site.

The site is relatively flat although the southern portion of the site appears to be elevated by 2 to 3 feet with fill. A Contra Costa County Water District canal is located along the northeast side of the property and existing residential development is located along the southeast and southwest sides of the property.

1.3 PROPOSED DEVELOPMENT

We understand that the proposed development is in the early planning stage at this time. Based on discussions with the project team, we understand that the project may consist of 8 to 10 residential lots. Grading for the project is expected to involve cuts and fills of 1 to 3 feet in

order to create properly draining building pads and an access road. We understand that the project may include a bio-swale along the northeast side of the project adjacent to the canal.

2.0 REGIONAL GEOLOGY

2.1 GEOLOGIC SETTING

The study area is located in the Coast Ranges geomorphic province of California. The Coast Ranges are characterized by a series of northwest-trending valleys and mountain ranges. The bedrock in this region has been folded and faulted in a tectonic setting that is experiencing translational and compressional deformations of the earth's crust.

As depicted on Figure 3, regional geologic mapping by Graymer et al. (1994), the site is located in a broad valley underlain by thick alluvial deposits. Mapping by Witter et al. (2006) indicates that the site is underlain by late Pleistocene alluvial fan deposits and has a low liquefaction susceptibility.

2.2 FAULTING

The site is not located within a State of California Earthquake Fault Zone (EFZ) for known active faults. No faults are shown crossing the site on other regional geologic maps including maps prepared by Graymer (1994), Dibblee (1980) or Crane (1988).

2.3 SEISMICITY

The nearest known active fault is the Concord fault located approximately 1 mile northeast of the site. The Calaveras, Hayward and San Andreas faults are located approximately 3 miles, 16 miles and 40 miles, respectively, to the southwest. The Greenville-Marsh Creek fault is located about 5 miles to the northeast.

Because of the presence of nearby active faults, including the San Andreas Fault Zone, the region is considered seismically active. Numerous small earthquakes occur every year in the region, and large (>M7) earthquakes have been recorded and can be expected to occur in the future.

3.0 AERIAL PHOTOGRAPH INTERPRETATION

Several sets of aerial photographs (see list of references) were examined to study geomorphic features that could be associated with drainage and previous grading in the vicinity of the site. In Google imagery dated 1939, we observed indications of a subtle drainage swale crossing the central portion of the site with a curved alignment. The swale was grass lined and the flow line of the swale did not appear to be more than 1 to 2 feet below adjacent grades. The approximate location of this former drainage swale is shown on the attached Figure 2.

4.0 FIELD EXPLORATION

The field exploration for this study was conducted on February 4, 2014, and consisted of drilling two exploratory borings at the approximate locations shown on Figure 2. The field exploration locations were obtained by taping or pacing from existing features; therefore, they should be considered accurately located only to the degree implied by the method used.

The borings were drilled to depths of about 21.5 to 51.5 feet below existing grades, using a truck-mounted drilling rig equipped with 6-inch-diameter solid flight augers. An ENGEO Engineer logged the boreholes in the field and collected soil samples using a 3-inch O.D. California-type split-spoon sampler fitted with 6-inch-long brass liners or 2-inch O.D. split-spoon sampler. The split-spoon sampler was advanced by a 140-pound hammer with a 30-inch drop. The penetration of the sampler into the native materials is field recorded as the number of blows needed to drive the sampler 18 inches in 6-inch increments. Results on the boring logs are recorded as the number of blows required for the last one foot of penetration. No correction factors have been applied to field blow counts presented on the borelogs.

The field logs were used to develop the report borelogs (Appendix A). The logs depict subsurface conditions within the borings for the date of drilling; however, subsurface conditions may vary with time. The boreholes were backfilled to the ground surface with cement grout on the day of the field exploration.

4.1 LABORATORY TESTING

We performed the following laboratory tests on select near-surface samples recovered during our field exploration activities:

TABLE 4.1-1

Soil Characteristic	Testing Method	Location of Results
Atterberg Limits	ASTM D-4318	Appendix B
Moisture Content/Dry Density	ASTM D-2216	Boring Logs

The individual test results are presented in Appendix B.

4.2 SUBSURFACE CONDITIONS

Alluvial deposits were encountered in the borings to the terminal depths. The alluvium encountered generally consists of brown and gray silty clay. The clayey deposits are generally very stiff to hard above the groundwater table and become stiff to very stiff below groundwater table. Laboratory testing indicates that the near-surface alluvial soils have high plasticity (Plasticity Index of 30).

In the southern portion of the site, the alluvial deposits are covered with a layer of fill material. Based on the findings of Boring 1-B1, the existing fill appears to range up to about 4 feet thick.

The existing fill encountered consists of clay with some sand and gravel. No debris or deleterious material was observed within the existing fill. It appears that the existing fill was derived from excavation of the canal along the northeast side of the site.

4.3 GROUNDWATER

Groundwater was encountered in Borings 1-B1 and 1-B2 at depths of about 13 feet and 8½ feet, respectively, below the existing ground surface at end of drilling. This groundwater level is close to the level of water observed in the adjacent canal. Fluctuations in groundwater levels occur seasonally and over a period of years because of variations in precipitation, temperature, irrigation, or other factors.

5.0 CONCLUSIONS

From a geologic and geotechnical standpoint, the study area is generally suitable for the proposed residential development. The preliminary recommendations in this report should be considered in the initial planning for the project. Design-level explorations will be required to develop recommendations for site grading and foundations.

Potential geologic hazards in the study area include expansive near-surface soils, existing fill and seismic shaking. These potential hazards and other geotechnical issues relevant to the site are discussed below.

5.1 SEISMIC HAZARDS

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is ground rupture, also called surface faulting. The common secondary seismic hazards include ground shaking, ground lurching, soil liquefaction, lateral spreading and landsliding. The following sections present a discussion of these hazards as they apply to the site.

Based on topographic setting, the risk from earthquake-induced landsliding, tsunamis and seiches is considered low to negligible at the site.

5.1.1 Ground Rupture

The site is not located within a State of California Earthquake Fault Hazard Zone and no known active faults cross the site. The risk of surface fault rupture at the site is considered low.

5.1.2 Ground Shaking

An earthquake of moderate to high magnitude generated within the San Francisco Bay Region could cause considerable ground shaking at the site, similar to that which has occurred in the past. To mitigate the shaking effects, all structures should be designed using sound engineering judgment and the latest California Building Code (CBC) requirements, as a minimum.

Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code-prescribed lateral forces are generally considered to be substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake; however, it is reasonable to expect that a well-designed and well-constructed structure will not collapse or cause loss of life in a major earthquake (SEAOC, 1996).

5.1.3 Ground Lurching

Ground lurching is a result of the rolling motion imparted to the ground surface during energy released by an earthquake. Such rolling motion can cause ground cracks to form in weaker soils. The potential for the formation of these cracks is considered greater at contacts between deep alluvium and bedrock. Such an occurrence is possible at the site as in other locations in the Bay Area, but based on the site location, it is our opinion that the offset is expected to be minor. Recommendations for site preparation and grading will be provided that are intended to reduce the potential for lurch cracking.

5.1.4 Liquefaction

Liquefaction is a phenomenon in which saturated, loose or medium dense, cohesionless soils are subject to a temporary, but essentially total, loss of shear strength because of pore pressure build-up under the reversing cyclic shear stresses associated with earthquakes. Alluvial deposits consisting of stiff clay were encountered in our exploration to depths of about 52 feet that are not considered susceptible to liquefaction. On this basis, the potential for liquefaction at the site appears to be low.

5.1.5 Lateral Spreading

Lateral spreading is a failure within a weaker soils (possibly due to liquefaction) that causes the overlying soil mass to move toward a free face or down a gentle slope. Generally, effects of lateral spreading are most significant at the free face or the crest of a slope and diminish with distance from the slope. Alluvial deposits consisting of stiff clay were encountered in our preliminary exploration that are not considered susceptible to liquefaction or lateral spreading. On this basis, the potential for lateral spreading at the site appears to be low.

5.2 EXPANSIVE SOILS

Near-surface soil samples tested indicate the site soils have a high expansion potential (PI of 30). Expansive soils shrink and swell as a result of moisture changes. This can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. Structures

can be supported on structural reinforced mat foundations that are designed to accommodate shrinking and swelling subgrade soils.

Successful construction on expansive soils requires special attention during grading. It is imperative to keep exposed soils moist by occasional sprinkling. If the soils dry, it is extremely difficult to remoisturize the soils (because of their clayey nature) without excavation, moisture conditioning, and recompaction.

Conventional grading operations, incorporating fill placement specifications tailored to the expansive characteristics of the soil, and use of a mat foundation (either post-tensioned or conventionally reinforced) are common, generally cost-effective measures to address the expansive potential of the foundation soils. Based upon our initial findings, the effects of expansive soils are expected to pose a low impact when properly mitigated.

5.3 CANAL BANK STABILITY

As noted above, a canal is located along the northeast side of the property. The flow line of the canal is typically about 8 to 10 feet below the adjacent grades. Where the canal crosses Risdon Road and David Avenue, concrete structures limit the potential for vertical and horizontal erosion of the canal. The canal banks are currently vegetated with grasses and scattered trees. It appears that some sections of the canal bank are underlain by riprap revetment.

Although the canal slopes do not appear to be experiencing bank erosion or instability, we do recommend that a setback for improvements be maintained to allow for canal maintenance. For planning purposes, we recommend that all improvements associated with the project be set back at least 15 feet from the top of canal bank. However, it should be noted that the County/City requirements for canal bank setback may have more stringent setback specifications.

5.4 EXISTING FILLS

The southern portion of the site is covered with a layer of existing fill that appears to range up to about 4 feet thick. The existing fill is not documented as engineered fill and its content and engineering properties could vary across the fill area. The existing fill could undergo vertical movement that is not easily characterized and could ultimately be inadequate for support of the proposed building loads. We recommend that the existing fill be removed during grading activities and replaced as engineered fill with appropriate moisture conditioning and compaction.

The extent and quality of existing fills should be further evaluated at the time of design-level study.

5.5 EXISTING WELL

As indicated on the attached Site Plan, an existing well was observed onsite. The well should be abandoned in accordance with City and/or County requirements.

5.6 CORROSION POTENTIAL

Sampling and testing for corrosion potential on foundation concrete and buried metal was not included in this preliminary study. Baseline sampling/testing is recommended during our design-level study to determine the corrosion potential.

6.0 PRELIMINARY RECOMMENDATIONS

The following recommendations are for initial land planning and preliminary estimating purposes. Final recommendations regarding site grading and foundation construction will be provided after additional site-specific exploration has been undertaken.

6.1 DEMOLITION AND STRIPPING

Site development would commence with the removal of existing foundations, utilities, vegetation, and surface and subsurface improvements. All debris or soft compressible soils should be removed from any location to be graded, from areas to receive fill or structures, or those areas to serve as borrow. The depth of removal of such materials should be determined by the Geotechnical Engineer in the field at the time of grading.

Existing vegetation should be removed from areas to receive fill or structures, or those areas to serve for borrow. Tree roots should be removed down to a depth of at least 3 feet below finished grade. The actual depths of tree root removal should be determined by the Geotechnical Engineer's representative in the field. Subject to approval by the Landscape Architect, strippings and organically contaminated soils can be used in landscape areas. Otherwise, such soils should be removed from the project site. Any topsoil that will be retained for future use in landscape areas should be stockpiled in areas where it will not interfere with grading operations.

6.2 EXISTING FILL

Existing fill, utility trench backfill, and existing foundation backfill are considered undocumented and may not have been placed in accordance with current engineering standards. Depending upon the limits of grading and planned civil cuts, existing fills should be subexcavated to expose underlying competent native soils that are approved by the Geotechnical Engineer.

6.3 SELECTION OF MATERIALS

With the exception of construction debris (wood, brick, asphalt, concrete, metal, etc.), organically contaminated materials (soil which contains more than 2 percent organic content by weight), and environmentally impacted soils (if any), we anticipate the site soils are suitable for use as engineered fill provided they are broken down to 6 inches or less in size. Other materials and debris, including trees with their root balls, should be removed from the project site.

6.4 GRADED SLOPES

It is anticipated that graded slopes will be limited to relatively small steps between the lots. In general, graded slopes should be planned at gradients that are no steeper than 2:1 (horizontal:vertical).

6.5 BUILDING PAD TREATMENT

For preliminary purposes, based on the expansive characteristics of the soils tested, the upper 3 feet of pad subgrades (cut, fill, and cut-fill transition) should consist of uniform engineered fill. Depending on the planned pad grades, this pad treatment may necessitate removal and replacement of material below existing grades.

6.6 FILL PLACEMENT

For land planning and cost estimating purposes, the following compaction requirements should be anticipated:

General fill areas:

Test Procedures:	ASTM D-1557.
Required Moisture Content:	Not less than 4 percentage points above optimum moisture content.
Minimum Relative Compaction:	Not less than 90 percent.

Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material.

Additional compaction requirements may be required for near-surface building pad foundation soils and retaining wall backfill soils. These additional requirements will be developed during design-level exploration.

6.7 RESIDENTIAL FOUNDATION DESIGN

In order to reduce the effects of the potentially expansive soils, the foundations should be sufficiently stiff to move as rigid units with minimum differential movements. This can be accomplished with construction of relatively rigid mat foundations, such as post-tensioned mats. Other types of foundation systems may also be considered during design-level study if desired.

For preliminary purposes, a minimum mat thickness of 10 to 12 inches should be anticipated. A tough, water vapor retarding membrane should also be considered below the mats to reduce moisture condensation under floor coverings. The vapor retarder should meet ASTM E 1745 – 11 Class A requirements for water vapor permeance, tensile strength, and puncture resistance. Vapor transmission through the mat foundations can also be reduced by using high strength concrete with a low water-cement ratio.

6.8 STORMWATER TREATMENT

We understand that a bio-swale is being considered along the northeastern side of the development area. Due to the anticipated high clay content and density of the underlying soils, the near-surface site soils are not expected to have adequate permeability values to handle stormwater infiltration. Therefore, best management practices should assume that little stormwater infiltration will occur at the site.

Although infiltration rates are expected to be low, clayey soils can be weakened by water infiltration and saturation, which can cause problems for adjacent improvements. Bioretention cells or bioswales should be designed with impermeable liners, subdrains, and their excavations (even temporary) should be situated outside a 1:1 line of projection extending downwards from nearby improvements (such as curb, street, site wall, or house) unless retaining side walls are planned. Bioretention soil treatment mixes should be compacted to at least 85 percent relative compaction.

7.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This preliminary report is issued with the understanding that it is the responsibility of the owner to transmit the information and recommendations of this preliminary report to developers, owners, buyers, architects, engineers, and designers for the project so that the necessary steps can be taken by the contractors and subcontractors to carry out such recommendations in the field. The conclusions and recommendations contained in this preliminary report are solely professional opinions.

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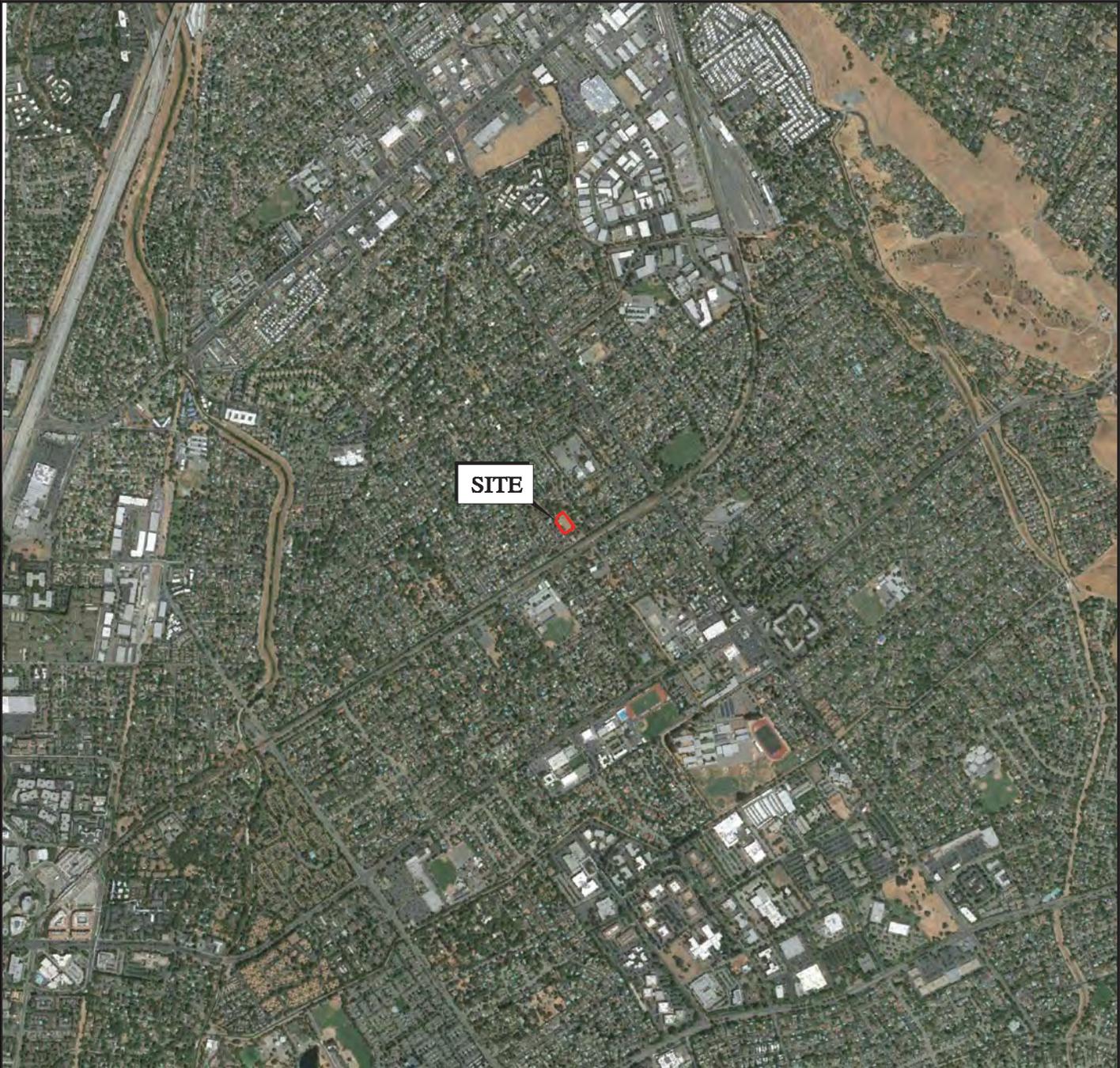
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LIST OF FIGURES

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- Figure 2 Site Plan
- Figure 3 Regional Geologic Map



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BASE MAP SOURCE: GOOGLE EARTH PRO



VICINITY MAP
1890 RISDON ROAD
CONCORD, CALIFORNIA

PROJECT NO.: 10873.000.000
SCALE: AS SHOWN
DRAWN BY: SRP CHECKED BY: MT

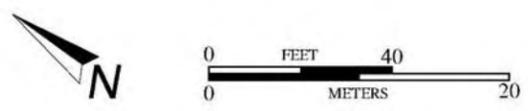
FIGURE NO.
1

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EXPLANATION

- 1-B2** APPROXIMATE LOCATION OF BORING
- APPROXIMATE LOCATION OF HISTORIC SWALE
- APPROXIMATE LOCATION OF EXISTING WELL
- APPROXIMATE LOCATION OF AREA FILL.

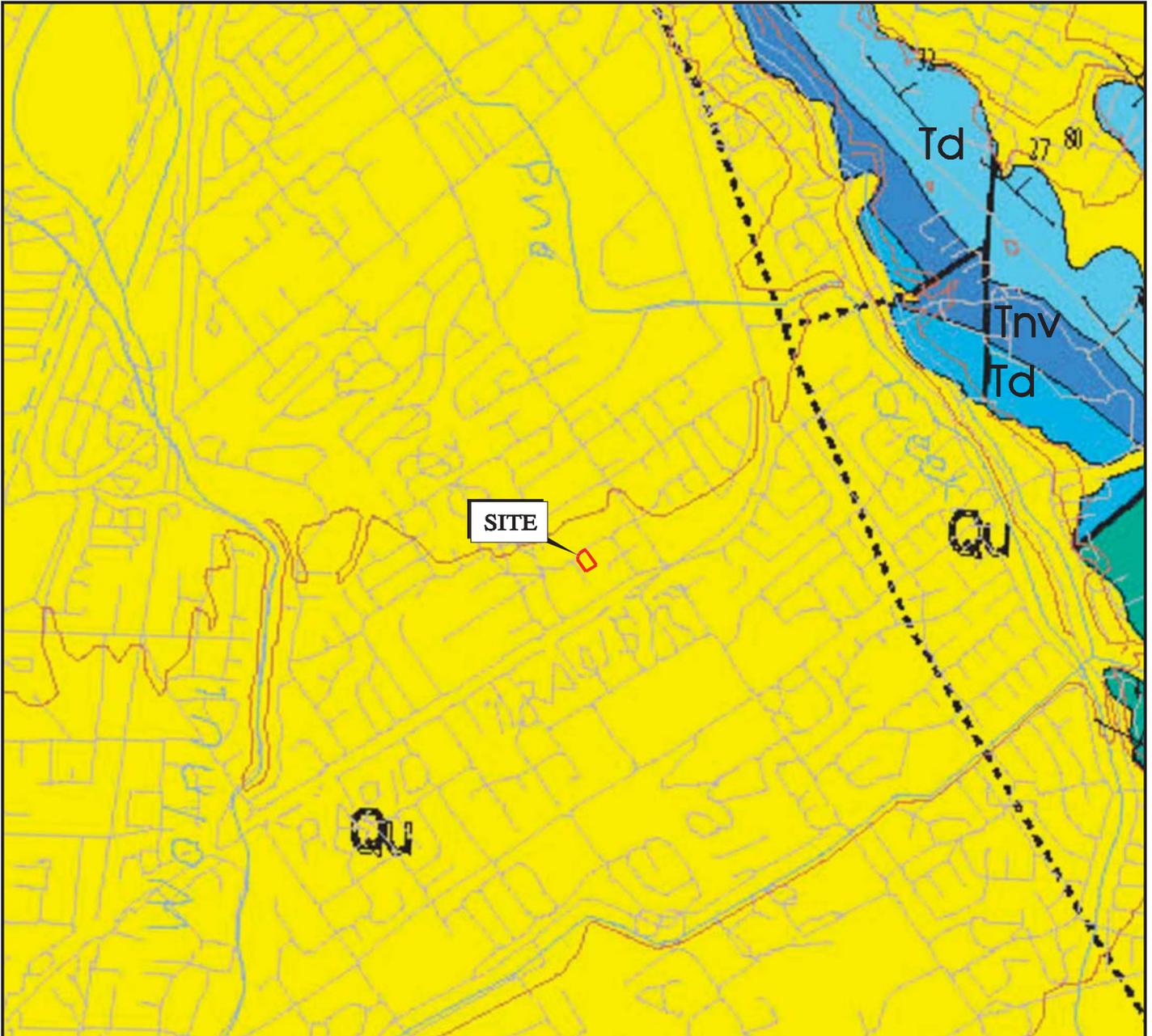


BASE MAP SOURCE: GOOGLE EARTH PRO, P/A DESIGN RESOURCES



SITE PLAN
1890 RISDON ROAD
CONCORD, CALIFORNIA

PROJECT NO.: 10873.000.000	FIGURE NO.
SCALE: AS SHOWN	2
DRAWN BY: SRP	CHECKED BY: MT



EXPLANATION


 FAULT-DASHED WHERE APPROXIMATELY LOCATED, SHORT DASHED WHERE INFERRED, DOTTED WHERE CONCEALED, QUERIED WHERE LOCATION IS UNCERTAIN

 STRIKE-SLIP MOVEMENT

STRIKE AND DIP OF STRATA


 INCLINED

Qu UNDIVIDED QUATERNARY DEPOSITS

Tnv NORTONVILLE FORMATION

Td DOMINGENE FORMATION



BASE MAP SOURCE: GRAYMER, 1994



REGIONAL GEOLOGIC MAP
 1890 RISDON ROAD
 CONCORD, CALIFORNIA

PROJECT NO.: 10873.000.000

SCALE: AS SHOWN

DRAWN BY: SRP

CHECKED BY: MT

FIGURE NO.

3

**A
P
P
E
N
D
I
X

A**

APPENDIX A

Boring Logs



KEY TO BORING LOGS

MAJOR TYPES		DESCRIPTION	
COARSE-GRAINED SOILS MORE THAN HALF OF MAT'L LARGER THAN #200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LESS THAN 5% FINES	GW - Well graded gravels or gravel-sand mixtures GP - Poorly graded gravels or gravel-sand mixtures
		GRAVELS WITH OVER 12 % FINES	GM - Silty gravels, gravel-sand and silt mixtures GC - Clayey gravels, gravel-sand and clay mixtures
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LESS THAN 5% FINES	SW - Well graded sands, or gravelly sand mixtures SP - Poorly graded sands or gravelly sand mixtures
		SANDS WITH OVER 12 % FINES	SM - Silty sand, sand-silt mixtures SC - Clayey sand, sand-clay mixtures
FINE-GRAINED SOILS MORE THAN HALF OF MAT'L SMALLER THAN #200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50 % OR LESS		ML - Inorganic silt with low to medium plasticity CL - Inorganic clay with low to medium plasticity OL - Low plasticity organic silts and clays
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50 %		MH - Elastic silt with high plasticity CH - Fat clay with high plasticity OH - Highly plastic organic silts and clays
	HIGHLY ORGANIC SOILS		PT - Peat and other highly organic soils

For fine-grained soils with 15 to 29% retained on the #200 sieve, the words "with sand" or "with gravel" (whichever is predominant) are added to the group name.

For fine-grained soil with >30% retained on the #200 sieve, the words "sandy" or "gravelly" (whichever is predominant) are added to the group name.

GRAIN SIZES

U.S. STANDARD SERIES SIEVE SIZE				CLEAR SQUARE SIEVE OPENINGS				
	200	40	10	4	3/4 "	3"	12"	
SILTS AND CLAYS	SAND				GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE			

RELATIVE DENSITY

<u>SANDS AND GRAVELS</u>	BLOWS/FOOT (S.P.T.)
VERY LOOSE	0-4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	OVER 50

CONSISTENCY

<u>SILTS AND CLAYS</u>	<u>STRENGTH*</u>
VERY SOFT	0-1/4
SOFT	1/4-1/2
MEDIUM STIFF	1/2-1
STIFF	1-2
VERY STIFF	2-4
HARD	OVER 4

MOISTURE CONDITION

DRY	Dusty, dry to touch
MOIST	Damp but no visible water
WET	Visible freewater

LINE TYPES

—————	Solid - Layer Break
-----	Dashed - Gradational or approximate layer break

GROUND-WATER SYMBOLS

	Groundwater level during drilling
	Stabilized groundwater level

SAMPLER SYMBOLS

	Modified California (3" O.D.) sampler
	California (2.5" O.D.) sampler
	S.P.T. - Split spoon sampler
	Shelby Tube
	Continuous Core
	Bag Samples
	Grab Samples
NR	No Recovery

(S.P.T.) Number of blows of 140 lb. hammer falling 30" to drive a 2-inch O.D. (1-3/8 inch I.D.) sampler

* Unconfined compressive strength in tons/sq. ft., asterisk on log means determined by pocket penetrometer



LOG OF BORING 1-B1

Geotechnical Feasibility
1890 Risdon Road
Concord, CA
10873.000.000

DATE DRILLED: 2/4/2014
HOLE DEPTH: Approx. 51½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV' ('): Approx. 75 ft.

LOGGED / REVIEWED BY: D. Bernardi / MT
DRILLING CONTRACTOR: West Coast Exploration
DRILLING METHOD: Solid Flight Auger
HAMMER TYPE: 140 lb. Rope and Cathead

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx	Well Construction
0	0		LEAN CLAY WITH SAND AND GRAVEL (CL), brown, hard, moist, 15 to 30 % fine to coarse grained sand, 10 to 20 % fine gravel, angular (FILL)			34			> 4.5*	
1	0.3									
5	1.5		LEAN CLAY WITH SAND AND GRAVEL (CL), dark brown, hard, moist, rootlets, 5 to 20 % fine to coarse grained sand, 5 to 20 % fine gravel, subrounded to subangular (NATIVE)			33			> 4.5*	
2	0.6					67	12.6	113	> 4.5*	
3	0.9		LEAN CLAY WITH SAND AND GRAVEL (CL), light brown, very stiff, dry to moist, 5 to 20 % fine to coarse grained sand, 5 to 20 % fine gravel, subrounded to subangular			31				
10	3.0		LEAN CLAY (CL), brown, very stiff, moist, <5% coarse angular sand.			37	19.7	109	4*	
4	1.2									
15	4.5		SANDY LEAN CLAY WITH SILT (CL), brown and olive brown, very stiff, moist, 20 to 40 % fine grained sand.			48			3*	
5	1.5									
20	6.0		Sand Grades Out							

LOG - GEOTECHNICAL + WELL 1890 RISDON ROAD.GPJ ENGEO INC.GDT 2/14/14



LOG OF BORING 1-B1

Geotechnical Feasibility
1890 Risdon Road
Concord, CA
10873.000.000

DATE DRILLED: 2/4/2014
HOLE DEPTH: Approx. 51½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV' ('): Approx. 75 ft.

LOGGED / REVIEWED BY: D. Bernardi / MT
DRILLING CONTRACTOR: West Coast Exploration
DRILLING METHOD: Solid Flight Auger
HAMMER TYPE: 140 lb. Rope and Cathead

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx	Well Construction
7			FAT CLAY (CH), brown and olive brown, stiff, moist.			30			1.25*	
25			LEAN CLAY (CL), brown and olive brown, very stiff, moist, carbonates and iron oxide staining.			38			3.0*	
30			SANDY LEAN CLAY (CL), brown and olive brown, stiff, wet, carbonates, 20 to 40 % fine grained sand			24			1.25*	
35			LEAN CLAY (CL), brown and olive brown, very stiff, moist			28				
40			LEAN CLAY, brownish gray and gray, stiff, moist			18				

LOG - GEOTECHNICAL + WELL 1890 RISDON ROAD.GPJ ENGEO INC.GDT 2/14/14



LOG OF BORING 1-B1

Geotechnical Feasibility
1890 Risdon Road
Concord, CA
10873.000.000

DATE DRILLED: 2/4/2014
HOLE DEPTH: Approx. 51½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV' ('): Approx. 75 ft.

LOGGED / REVIEWED BY: D. Bernardi / MT
DRILLING CONTRACTOR: West Coast Exploration
DRILLING METHOD: Solid Flight Auger
HAMMER TYPE: 140 lb. Rope and Cathead

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx	Well Construction
			LEAN CLAY, brownish gray and gray, stiff, moist			20				
13										
	45		SANDY LEAN CLAY (CL), brown and gray, stiff, wet, 20 to 40 % fine grained sand			38			1.25*	
14										
	50		LEAN CLAY (CL), brown, very stiff, moist			74			2.5*	
15										
50			Bottom of boring at 51.5 feet bgs Groundwater encountered at 12 feet during drilling Groundwater measured at 13 feet after drilling							

LOG - GEOTECHNICAL + WELL 1890 RISDON ROAD.GPJ ENGEO INC.GDT 2/14/14



LOG OF BORING 1-B2

Geotechnical Feasibility
1890 Risdon Road
Concord, CA
10873.000.000

DATE DRILLED: 2/4/2014
HOLE DEPTH: Approx. 21½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV' ('): Approx. 71 ft.

LOGGED / REVIEWED BY: D. Bernardi / MT
DRILLING CONTRACTOR: West Coast Exploration
DRILLING METHOD: Solid Flight Auger
HAMMER TYPE: 140 lb. Rope and Cathead

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx	Well Construction
			LEAN CLAY (CL), dark brown, hard, moist, contains roots (TOPSOIL)			73			> 4.5*	
			LEAN CLAY WITH SAND AND GRAVEL (CL), dark brown, hard, moist, contains rootlets, 10 to 20 % fine to coarse grained sand, 10 to 20 % fine gravel, subrounded			47				
1										
5			Becomes brown			53	14.9	116	> 4.5*	
2						51				
			LEAN CLAY (CL), brown, very stiff, moist		▼	60	21	106	3.0*	
10			LEAN CLAY WITH SAND (CL), brown and olive brown, very stiff, moist, 5 to 20 % fine grained sand			24				
					▽					
4										
15			LEAN CLAY WITH SILT (CL), brown and olive brown, medium stiff to stiff, moist			21			1.0*	
5										
20										

LOG - GEOTECHNICAL + WELL, 1890 RISDON ROAD.GPJ ENGEO INC.GDT 2/14/14



LOG OF BORING 1-B2

Geotechnical Feasibility
1890 Risdon Road
Concord, CA
10873.000.000

DATE DRILLED: 2/4/2014
HOLE DEPTH: Approx. 21½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV' ('): Approx. 71 ft.

LOGGED / REVIEWED BY: D. Bernardi / MT
DRILLING CONTRACTOR: West Coast Exploration
DRILLING METHOD: Solid Flight Auger
HAMMER TYPE: 140 lb. Rope and Cathead

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx	Well Construction
			LEAN CLAY (CL), brown and olive brown, stiff to very stiff, moist			35			2.0*	
			Bottom of boring at 21.5 feet bgs Groundwater encountered at 12.5 feet during drilling Groundwater measured at 8.5 feet after drilling							

**A
P
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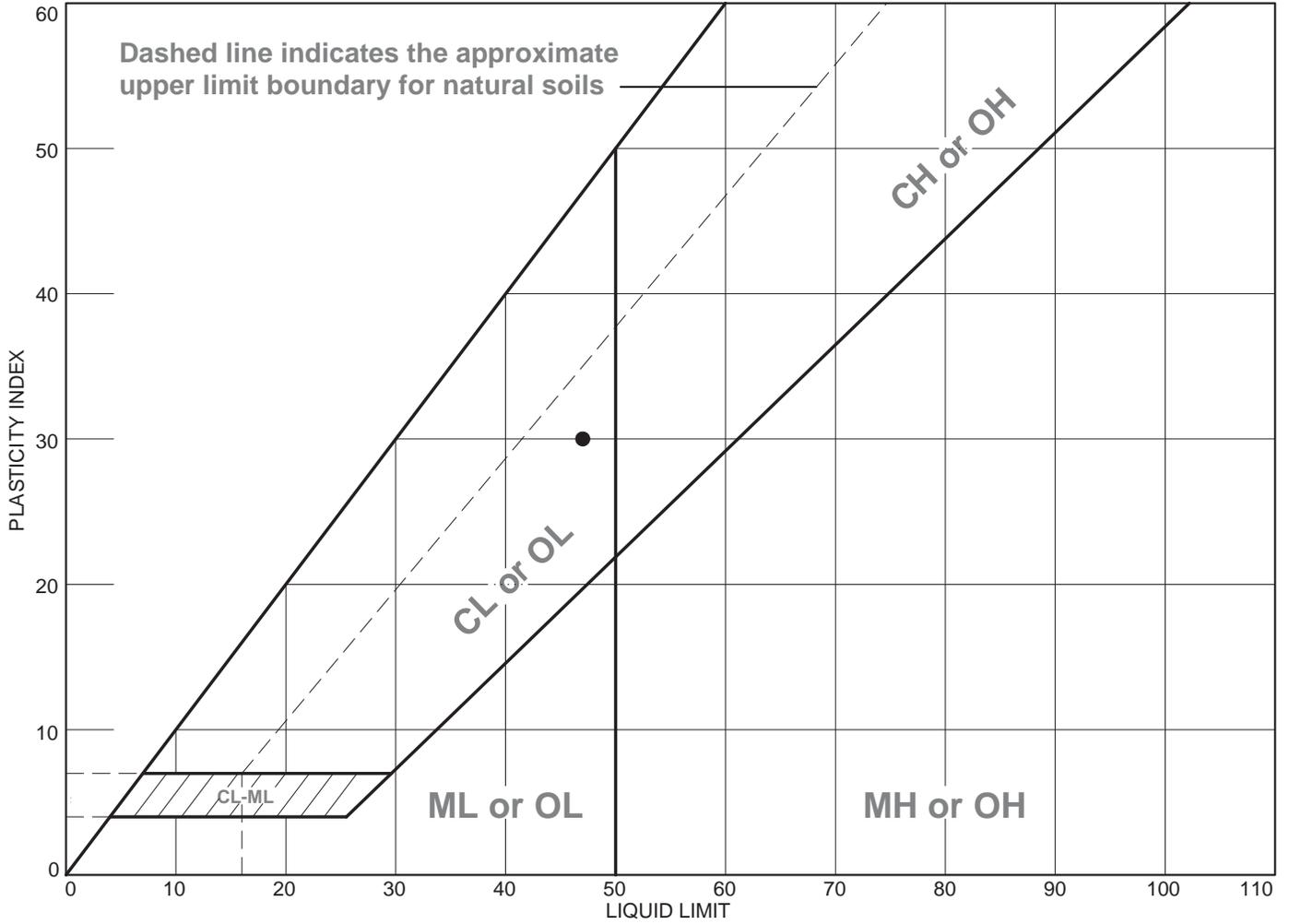
B**

APPENDIX B

Laboratory Test Data



LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	See exploration logs	47	17	30			

Project No. 10873.000.000 **Client:** Zheng Tan
Project: 1890 Risdon Road
Depth: 3-4 feet **Sample Number:** 1-B2 @ 3-4

Remarks:
 ●PI: ASTM D4318



APPENDIX E

TRUST RESOURCES REPORT

My project

IPaC Trust Resource Report

Generated May 01, 2015 01:25 PM MDT



US Fish & Wildlife Service

IPaC Trust Resource Report



Project Description

NAME

My project

PROJECT CODE

BIKTD-EDRWN-FRJFP-N6O3Z-C65E5M

LOCATION

Contra Costa County, California

DESCRIPTION

No description provided



U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

Sacramento Fish And Wildlife Office

Federal Building

2800 COTTAGE WAY, ROOM W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

Amphibians

California Red-legged Frog

Threatened

DESCRIPTION

This subspecies of red-legged frog occurs from sea level to elevations of about 1,500 meters (5,200 feet). It has been extirpated from 70 percent of its former range and now is found primarily in coastal drainages of central California, from Marin County, California, south to northern Baja California, Mexico. Potential threats to the species include elimination or degradation of habitat from land development and land use activities and habitat invasion by non-native aquatic species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=D02D>

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

California Tiger Salamander (sonoma) U.S.A. (CA - Sonoma County)

Endangered

DESCRIPTION

It is a large, stocky, terrestrial salamander with a broad, rounded snout. Adults males are about 8 inches long, females a little less than 7. Coloration consists of white or pale yellow spots or bars on a black background on the back and sides. The belly varies from almost uniform white or pale yellow to a variegated pattern of white or pale yellow and black. The salamander's small eyes protrude from their heads. They have black irises.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=D01T>

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

Birds

California Clapper Rail

Endangered

DESCRIPTION

The California clapper rail (*Rallus longirostris obsoletus*) is one of the largest rails (family Rallidae), measuring 13-19 inches from bill to tail. It is characterized by its hen-like appearance, a long, slightly downward-curving bill, olive-brown upper parts, a cinnamon-buff colored breast, dark flanks crossed by white bars and white undertail coverts which are often exposed when the bird is agitated.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B04A>

CRITICAL HABITAT

No critical habitat has been designated for this species.

California Least Tern

Endangered

DESCRIPTION

Long, narrow wings and a broad, forked tail identify the California least tern. Also have black-capped head and black-tipped, pale gray wings of the least tern contrast with its white body. It bears a white blaze across its forehead, dark forewings, black-tipped yellow bill, and yellowish feet. Is less the 25 cm when full grown and has 75 cm wingspan.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B03X>

CRITICAL HABITAT

No critical habitat has been designated for this species.

Crustaceans

Vernal Pool Fairy Shrimp

Threatened

DESCRIPTION

No description available

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=K03G>

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

Fishes

Delta Smelt

Threatened**DESCRIPTION**

No description available

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=E070>

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

Steelhead Northern California DPS - See 50 CFR 223.102

Threatened**DESCRIPTION**

Steelhead trout (*Oncorhynchus mykiss*) belong to the family Salmonidae which includes all salmon, trout, and chars. Steelhead are similar to some Pacific salmon in their life cycle and ecological requirements. They are born in fresh water streams, where they spend their first 1-3 years of life. They then emigrate to the ocean where most of their growth occurs. After spending between one to four growing seasons in the ocean, steelhead return to their native fresh water stream to spawn. Unlike Pac...

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=E08D>

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

Flowering Plants

Antioch Dunes Evening-primrose

Endangered**DESCRIPTION**

No description available

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=Q1ZN>

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

Contra Costa Wallflower

Endangered**DESCRIPTION**

No description available

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=Q1WA>

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

Insects

Callippe Silverspot Butterfly

Endangered**DESCRIPTION**

No description available

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=I019>

CRITICAL HABITAT

No critical habitat has been designated for this species.

Reptiles

Alameda Whipsnake (=striped Racer)

Threatened

DESCRIPTION

Adults reach a length of 3 to 4 feet (91 to 122 centimeters). Their back is colored sooty black or dark brown with a distinct yellow-orange stripe down each side. The front part of their underside is orange-rufous colored. The midsection is cream colored. The rear section and tail are pinkish.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=C04A>

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

Giant Garter Snake

Threatened

DESCRIPTION

Dorsal background coloration (the basic color on the snake's back) varies from brownish to olive with a checkered pattern of black spots, separated by a yellow dorsal stripe and two light colored lateral stripes. Background coloration and prominence of a black checkered pattern and the three light stripes are geographically and individually variable. The ventral surface (the snake's underside) is cream to olive or brown and sometimes infused with orange, especially in northern populations.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=C057>

CRITICAL HABITAT

No critical habitat has been designated for this species.

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

Allen's Hummingbird

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Breeding

DESCRIPTION

No description available

Bald Eagle

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Year-round

DESCRIPTION

A large raptor, the bald eagle has a wingspread of about 7 feet. Adults have a dark brown body and wings, white head and tail, and a yellow beak. Juveniles are mostly brown with white mottling on the body, tail, and undersides of wings. Adult plumage usually is obtained by the 6th year. In flight, the bald eagle often soars or glides with the wings held at a right angle to the body.

Bell's Sparrow

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Year-round

DESCRIPTION

The Sage Sparrow is a medium-sized bird ranging from 12-15 cm in length. It is generally brownish-gray in color with a grayer head and a more brown-colored back and wings. Some distinctive features of the Sage Sparrow include a white eye ring, a white spot in front of the eye, white streaks along the side of the lower jaw, and sometimes a white streak in the middle of its forehead. The Sage Sparrows under parts are mostly white with a contrasting much darker blackish, brown tail. The Sage Sp...

Black Oystercatcher

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Year-round

DESCRIPTION

No description available

Black Rail

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON
Breeding

DESCRIPTION
No description available

Burrowing Owl

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON
Year-round

DESCRIPTION
No description available

Common Yellowthroat

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON
Breeding

DESCRIPTION
No description available

Costa's Hummingbird

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON
Breeding

DESCRIPTION
No description available

Fox Sparrow

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON
Wintering

DESCRIPTION
No description available

Lawrence's Goldfinch

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON
Breeding

DESCRIPTION
No description available

Least Bittern

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Breeding

DESCRIPTION

No description available

Lesser Yellowlegs

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

No description available

Lewis's Woodpecker

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

No description available

Loggerhead Shrike

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

No description available

Long-billed Curlew

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

The Long-billed Curlew is a very large shorebird of about 50-65 cm in length. Its distinctive features include a very long bill (11-22 cm) and long legs. Its plumage is a rich pale brown color intermingled with cinnamon and pink. Its flight feathers are a contrasting orange-brown color. Female and male plumage is similar, but females are slightly larger with a longer bill. Juveniles have similar, but slightly different coloring than adults, including less distinct streaking on their undersides, ...

Marbled Godwit

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

No description available

Mountain Plover

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

The Mountain Plover is a fairly large bird of about 21-23 cm. Breeding birds have sandy brown coloring with white on the forehead throat and chest, bright white under the wings, a black crown, black bill, and a distinctive black stripe extending from the back of the bill to the eye. Non-breeders look similar to breeders, but the black coloring on the crown and face is replaced by pale brown coloring with some slight variation in coloring on the rest of the body. Juvenile birds are similar to no...

Nuttall's Woodpecker

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Year-round

DESCRIPTION

No description available

Oak Titmouse

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Year-round

DESCRIPTION

No description available

Peregrine Falcon

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Year-round

DESCRIPTION

No description available

Short-billed Dowitcher

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

No description available

Short-eared Owl

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

The short-eared owl is an owl of about 0.7 to 0.8 lbs with females slightly larger in size than males. Plumage is brown, buff, white and rust colors. Patches of brown and buff occur mostly on the back side, while the underside is colored more lightly, being mostly white. Females and males have similar plumage. Some distinguishing characteristics of this owl are its gray white fascial disk, and black coloring around yellow eyes. Juveniles have similar plumage to adults, but upper parts and head a...

Swainson's Hawk

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

Swainsons Hawks are broad-winged Buteos of between 48 and 56 cm in length with females slightly larger than males. Males and females have similar plumage. Swainsons Hawks are polymorphic with pale, light and intermediate morph plumage ranging from dark to light or rufous in color. Most Swainsons Hawks have a sharp contrast between the wing linings and flight feathers. However, some of the darkest Swainsons Hawks do not have this distinction. Swainsons Hawks are distinguishable from other Bu...

Tricolored Blackbird

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Year-round

DESCRIPTION

The Tricolored Blackbird is a medium-sized (18-24cm total length), sexually dimorphic North American passerine (Beedy, Edward, and Hamilton III 1999). Adult males are typically larger than females, and are black with bright red and white plumage on the wing shoulder. Adult females have sooty brown-black plumage with distinct grayish streaks, a relatively white chin and throat, and a smaller reddish shoulder-patch. Banding studies indicate a lifespan of 12-13 years (DeHaven and Neff 1973, Kenn...

Yellow Rail

This is a **bird of conservation concern** and has the highest priority for conservation

SEASON

Wintering

DESCRIPTION

No description available

Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

APPENDIX F

HISTORIC RECORDS SEARCH (CONFIDENTIAL)

THE HISTORICAL RECORDS SEARCH CONTAINS SENSITIVE AND CONFIDENTIAL INFORMATION AND IS RETAINED AT THE CITY OF CONCORD OFFICES UNDER SEPARATE COVER. THE RELEVANT HISTORICAL INFORMATION CONTAINED WITHIN THE RESULTS OF THE HISTORIC RECORDS SEARCH WILL BE PRESENTED TO THE APPROPRIATE REGULATORY AGENCIES IN ACCORDANCE WITH FEDERAL AND STATE REQUIREMENTS AS APPLICABLE TO THE PROPOSED PROJECT.

APPENDIX G

SCREENING CRITERIA TABLE 3-1



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

California Environmental Quality Act Air Quality Guidelines



May 2010



California Environmental Quality Act
Air Quality Guidelines

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

Project Manager:
Greg Tholen
Principal Environmental Planner
(415) 749-4954



Land Use Type	Operational Criteria Pollutant Screening Size	Operational GHG Screening Size	Construction-Related Screening Size
Single-family	325 du (NOX)	56 du	114 du (ROG)
Apartment, low-rise	451 du (ROG)	78 du	240 du (ROG)
Apartment, mid-rise	494 du (ROG)	87 du	240 du (ROG)
Apartment, high-rise	510 du (ROG)	91 du	249 du (ROG)
Condo/townhouse, general	451 du (ROG)	78 du	240 du (ROG)
Condo/townhouse, high-rise	511 du (ROG)	92 du	252 du (ROG)
Mobile home park	450 du (ROG)	82 du	114 du (ROG)
Retirement community	487 du (ROG)	94 du	114 du (ROG)
Congregate care facility	657 du (ROG)	143 du	240 du (ROG)
Day-care center	53 ksf (NOX)	11 ksf	277 ksf (ROG)
Elementary school	271 ksf (NOX)	44 ksf	277 ksf (ROG)
Elementary school	2747 students (ROG)	-	3904 students (ROG)
Junior high school	285 ksf (NOX)	-	277 ksf (ROG)
Junior high school	2460 students (NOX)	46 ksf	3261 students (ROG)
High school	311 ksf (NOX)	49 ksf	277 ksf (ROG)
High school	2390 students (NOX)	-	3012 students (ROG)
Junior college (2 years)	152 ksf (NOX)	28 ksf	277 ksf (ROG)
Junior college (2 years)	2865 students (ROG)	-	3012 students (ROG)
University/college (4 years)	1760 students (NOX)	320 students	3012 students (ROG)
Library	78 ksf (NOX)	15 ksf	277 ksf (ROG)
Place of worship	439 ksf (NOX)	61 ksf	277 ksf (ROG)
City park	2613 acres (ROG)	600 acres	67 acres (PM10)
Racquet club	291 ksf (NOX)	46 ksf	277 ksf (ROG)
Racquetball/health	128 ksf (NOX)	24 ksf	277 ksf (ROG)
Quality restaurant	47 ksf (NOX)	9 ksf	277 ksf (ROG)
High turnover restaurant	33 ksf (NOX)	7 ksf	277 ksf (ROG)
Fast food rest. w/ drive thru	6 ksf (NOX)	1 ksf	277 ksf (ROG)
Fast food rest. w/o drive thru	8 ksf (NOX)	1 ksf	277 ksf (ROG)
Hotel	489 rooms (NOX)	83 rooms	554 rooms (ROG)
Motel	688 rooms (NOX)	106 rooms	554 rooms (ROG)
Free-standing discount store	76 ksf (NOX)	15 ksf	277 ksf (ROG)
Free-standing discount superstore	87 ksf (NOX)	17 ksf	277 ksf (ROG)
Discount club	102 ksf (NOX)	20 ksf	277 ksf (ROG)
Regional shopping center	99 ksf (NOX)	19 ksf	277 ksf (ROG)
Electronic Superstore	95 ksf (NOX)	18 ksf	277 ksf (ROG)
Home improvement superstore	142 ksf (NOX)	26 ksf	277 ksf (ROG)
Strip mall	99 ksf (NOX)	19 ksf	277 ksf (ROG)
Hardware/paint store	83 ksf (NOX)	16 ksf	277 ksf (ROG)
Supermarket	42 ksf (NOX)	8 ksf	277 ksf (ROG)
Convenience market (24 hour)	5 ksf (NOX)	1 ksf	277 ksf (ROG)
Convenience market with gas pumps	4 ksf (NOX)	1 ksf	277 ksf (ROG)
Bank (with drive-through)	17 ksf (NOX)	3 ksf	277 ksf (ROG)



**Table 3-1
Operational-Related Criteria Air Pollutant and Precursor Screening Level Sizes**

Land Use Type	Operational Criteria Pollutant Screening Size	Operational GHG Screening Size	Construction-Related Screening Size
General office building	346 ksf (NOX)	53 ksf	277 ksf (ROG)
Office park	323 ksf (NOX)	50 ksf	277 ksf (ROG)
Government office building	61 ksf (NOX)	12 ksf	277 ksf (ROG)
Government (civic center)	149 ksf (NOX)	27 ksf	277 ksf (ROG)
Pharmacy/drugstore w/ drive through	49 ksf (NOX)	10 ksf	277 ksf (ROG)
Pharmacy/drugstore w/o drive through	48 ksf (NOX)	10 ksf	277 ksf (ROG)
Medical office building	117 ksf (NOX)	22 ksf	277 ksf (ROG)
Hospital	226 ksf (NOX)	39 ksf	277 ksf (ROG)
Hospital	334 beds (NOX)	84 ksf	337 beds (ROG)
Warehouse	864 ksf (NOX)	64 ksf	259 ksf (NOX)
General light industry	541 ksf (NOX)	121 ksf	259 ksf (NOX)
General light industry	72 acres (NOX)	-	11 acres (NOX)
General light industry	1249 employees (NOX)	-	540 employees (NOX)
General heavy industry	1899 ksf (ROG)	-	259 ksf (NOX)
General heavy industry	281 acres (ROG)	-	11 acres (NOX)
Industrial park	553 ksf (NOX)	65 ksf	259 ksf (NOX)
Industrial park	61 acres (NOX)	-	11 acres (NOX)
Industrial park	1154 employees (NOX)	-	577 employees (NOX)
Manufacturing	992 ksf (NOX)	89 ksf	259 ksf (NOX)

Notes: du = dwelling units; ksf = thousand square feet; NO_x = oxides of nitrogen; ROG = reactive organic gases. Screening levels include indirect and area source emissions. Emissions from engines (e.g., back-up generators) and industrial sources subject to Air District Rules and Regulations embedded in the land uses are not included in the screening estimates and must be added to the above land uses. Refer to Appendix D for support documentation. Source: Modeled by EDAW 2009.

3.2. COMMUNITY RISK AND HAZARD IMPACTS

Please refer to Chapter 5 for discussion of screening criteria for local community risk and hazard impacts.

3.3. CARBON MONOXIDE IMPACTS

This preliminary screening methodology provides the Lead Agency with a conservative indication of whether the implementation of the proposed project would result in CO emissions that exceed the *Thresholds of Significance* shown in Table 2-3.

The proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria is met:

APPENDIX H

FEMA MAPPING

Autumn Brook

*1890 Risdon Road
Concord, Ca.*

*FEMA Panel, corresponding Summary of Discharges and
accompanying flood profile for Ditch #2*

Table 6 – Summary of Discharges

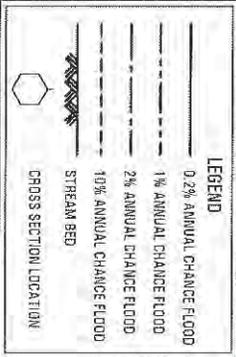
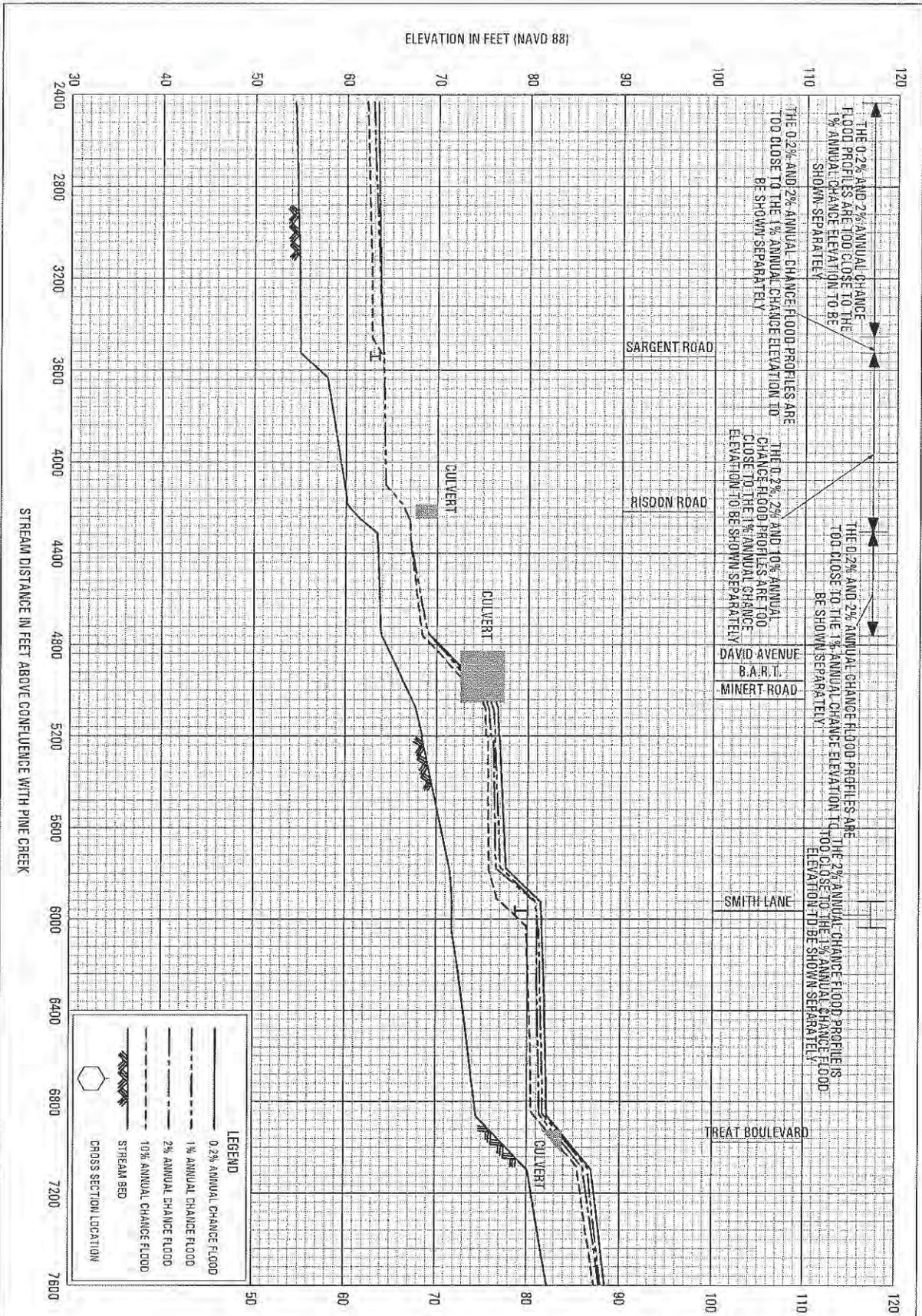
Flooding Source and Location	Drainage Area (sq mi)	Peak Discharges (cfs)			
		10-Percent Annual Chance	2-Percent Annual Chance	1-Percent Annual Chance	0.2-Percent Annual Chance
APPIAN CREEK					
Approximately 1,950 feet upstream of Appian Way	0.60	320	450	490	580
At Appian Way	0.86	430	600	660	780
At confluence with San Pablo Creek	0.98	450	640	710	840
ARROYO DEL HAMBRA CREEK					
At John Muir Parkway	8.97	1,788 ¹	2,413 ¹	2,660 ¹	2,903 ¹
At Jose Lane	7.10	2,240	3,290	3,660	4,380
BROOKSIDE ROAD TRIBUTARY	0.95	²	²	925	²
CASCADE CREEK					
At San Pablo Creek confluence	0.60	185	325	360	470
CLAYTON VALLEY DRAIN					
1,135 feet upstream of Salvio Street	2.10	480	790	930	1,200
At confluence with Walnut Creek	4.40	1,200	1,800	2,100	2,400
CORLISS DRIVE TRIBUTARY					
At confluence with Laguna Creek	0.40	160	250	280	300
DEER CREEK					
At Marsh Creek confluence	6.40	170 ³	880	1,200	1,800
11,320 feet upstream of confluence	5.43	²	²	571	²
14,100 feet upstream of confluence	4.88	²	²	317	²
DITCH NO. 2					
At Bart Culvert	2.10	900	1,300	1,450	1,650
At confluence with Pine Creek	3.30	1,100	1,500	1,700	2,000
DONNER CREEK					
At confluence with Mount Diablo Creek	2.90	845	1,250	1,390	1,680
At Marsh Creek Road	2.90	380	740	880	1,400
DOW CHANNEL	⁴	470	1,020	1,120	1,120

¹Increase in area with decrease in flow is result of spill

²Data not computed

³Flows reduced by reservoir routing

⁴Peaks reduced due to bypassing and/or nonreturning overbank spills



THE 0.2% AND 2% ANNUAL CHANCE FLOOD PROFILES ARE TOO CLOSE TO THE 1% ANNUAL CHANCE FLOOD ELEVATION TO BE SHOWN SEPARATELY

THE 0.2% AND 2% ANNUAL CHANCE FLOOD PROFILES ARE TOO CLOSE TO THE 1% ANNUAL CHANCE FLOOD ELEVATION TO BE SHOWN SEPARATELY

THE 0.2% AND 2% ANNUAL CHANCE FLOOD PROFILES ARE TOO CLOSE TO THE 1% ANNUAL CHANCE FLOOD ELEVATION TO BE SHOWN SEPARATELY

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SARGENT ROAD

RISDON ROAD

DAVID AVENUE
B.A.R.T.
MINERT ROAD

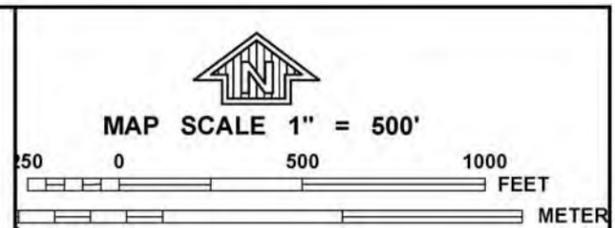
SMITH LANE

TREAT BOULEVARD

CULVERT

CULVERT

CULVERT



1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CULVERT

ROCKNE DRIVE

1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CULVERT

42°00'00"N

1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CULVERT

GRENOLA DRIVE

NFIP PANEL 0283F

FIRM
FLOOD INSURANCE RATE MAP
CONTRA COSTA COUNTY,
CALIFORNIA
AND INCORPORATED AREAS

PANEL 283 OF 602
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CONCORD, CITY OF	065022	0283	F
CONTRA COSTA COUNTY	065025	0283	F
PLEASANT HILL, CITY OF	065034	0283	F
WALNUT CREEK, CITY OF	065070	0283	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
06013C0283F

EFFECTIVE DATE
JUNE 16, 2009

Federal Emergency Management Agency

JOINS PANEL 0291

84°00'00"E

ARGONNE DRIVE

85°00'00"E

122°01'52.5"

37°56'15"

County Areas

City of Walnut Creek
065070

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

APPENDIX I

ENGEO REPORT

Project No.
10873.000.000

October 14, 2014

Mr. Zheng Tan
1233 Pine Creek Way, Unit A
Concord, CA 94520

Subject: 1890 Risdon Road
Concord, California

CONSULTATION REGARDING EXISTING CANAL STABILITY

Dear Mr. Tan:

In accordance with your request, we have evaluated the existing slopes along a portion of the Contra Costa County Flood Control District (CCCFCD) canal adjacent to your project located at 1890 Risdon Road. We previously performed a subsurface geotechnical exploration at the site and presented the exploratory borings and results of that study in a report dated February 18, 2014.

Our scope of services for this evaluation included a recent reconnaissance of the site by an engineering geologist from our office, review of the findings of our exploratory borings on the site, review of historical aerial photographs of the site, and review of the latest proposed development plans for the project.

SITE RECONNAISSANCE

As noted above, a canal is located along the northeast side of the property as shown on Figure 1. The flow line of the canal is typically about 9 feet below the adjacent grades. The side slopes of the canal have a slope gradient of about 2:1 (horizontal:vertical). Where the canal crosses under Risdon Road and under David Avenue, existing concrete drop structures limit the potential for vertical and horizontal erosion of the canal. The canal banks are currently vegetated with grasses and scattered trees. At the approach to the drop structures, the existing slopes are protected by about 20 horizontal feet of grouted riprap for the full height of the bank, and it appears that some sections of the canal bank itself are underlain by riprap revetment. An un-paved 22-foot-wide service road (located within the CCCFCD easement) is situated along the entire southwest side of the canal from Risdon Road to David Avenue.

EXPLORATORY BORINGS

Boring 1-B1 was drilled in an area of existing fill located on the southwest side of the canal outside the CCCFCD easement. In Boring 1-B1, about 4 feet of fill was encountered over native soil and alluvium. Boring 1-B2 was drilled about 20 feet from the canal top of bank. Native soil and alluvium was encountered in Boring 1-B2 at the existing ground surface.

The conditions encountered in Borings 1-B1 and 1-B2 indicate that the adjacent canal was constructed in a cut configuration. The conditions encountered in the borings and the topography of the canal are depicted on the attached Geologic Cross Section A-A', Figure 2.

AERIAL PHOTOGRAPHS

Historical aerial photographs of the site covering the time period from 1939 to 2012 were examined on Google Earth and HistoricAerials.com web sites. Based on this review, we observed that the subject canal was constructed sometime between 1958 and 1968 along an existing natural drainage swale that traversed the property. Numerous photographs taken after 1968 were examined and no indications of previous instability or erosion problems were evident on the canal banks in this area.

PROPOSED DEVELOPMENT

The latest plans for the project have been prepared by P/A Design Resources, dated October 8, 2014. The plans indicate that the existing 22-foot-wide service road will remain along the southwest side of the canal and further to the southwest, and the project improvements will include a bioswale and private lane to serve the proposed homes. The proposed improvements are depicted relative to the canal on the attached Geologic Cross Section A-A'. The proposed retaining wall for the bioswale shall be designed for a surcharge from heavy equipment that may work on the 22-foot-wide service road maintaining the canal.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this evaluation, the canal was constructed by an excavation into the native soils and alluvium. There is no indication of fill placement on the service road or the existence of a levee along the subject canal. Based on observation of current and historic conditions, we found no indications of canal slope instability or erosion problems. It appears that the canal has performed acceptably for over 50 years.

As previously recommended in our geotechnical report, all improvements associated with the project be set back a minimum of 15 feet from the top of canal bank. Current plans prepared by P/A Design Resources indicate all improvements are setback 22 feet from the top of the canal bank and therefore conform with this recommendation.

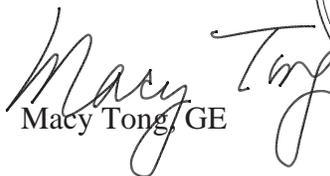
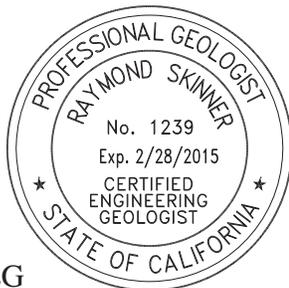
We are pleased to have been of service to you on this project and are prepared to consult further with you and your design team as the project progresses.

Sincerely,

ENGEO Incorporated



Raymond P. Skinner, CEG

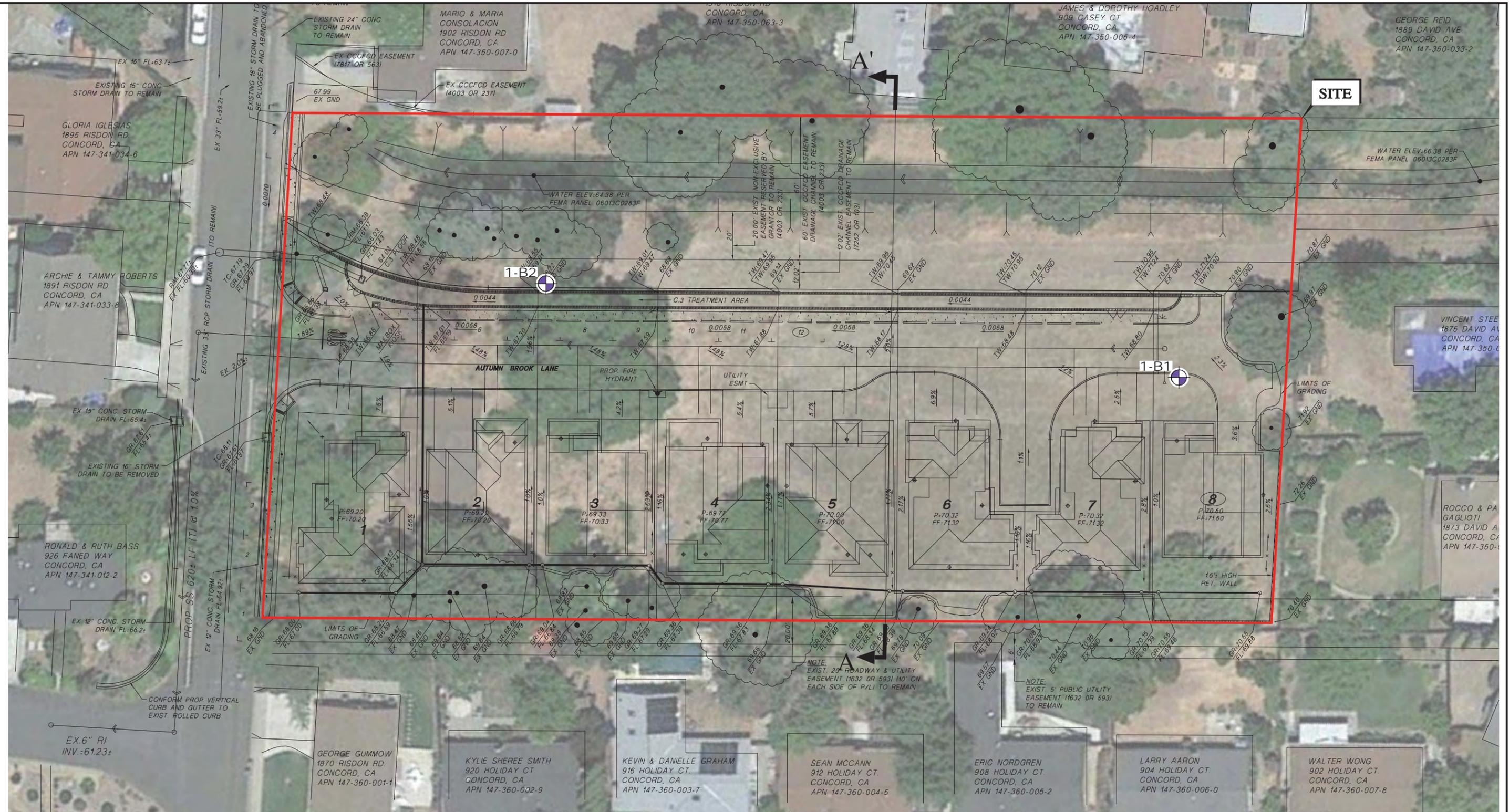


Macy Tong, GE



Attachment: Figures 1 and 2

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EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

1-B2  BORING LOCATION

A  A' CROSS SECTION LOCATION

BASE MAP SOURCE: GOOGLE EARTH PRO, P/A DESIGN RESOURCES



SITE PLAN
1890 RISDON ROAD
CONCORD, CALIFORNIA

PROJECT NO.: 10873.000.000

SCALE: AS SHOWN

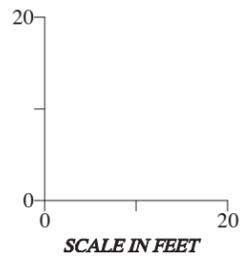
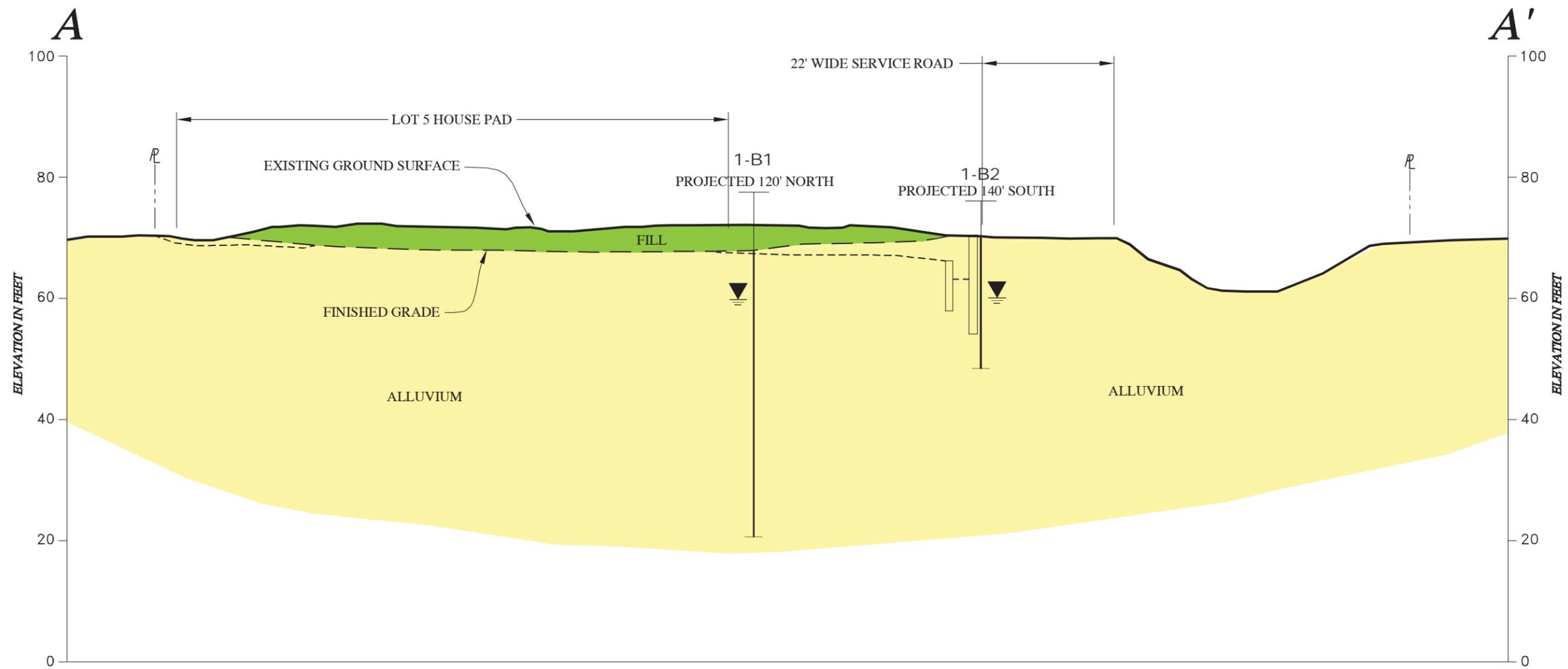
DRAWN BY: SRP

CHECKED BY: MT

FIGURE NO.

1

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EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- 1-B2 BORING LOCATION
- GROUNDWATER LEVEL

	CROSS SECTION A-A' 1890 RISDON ROAD CONCORD, CALIFORNIA		PROJECT NO.: 10873.000.000	FIGURE NO. 2
			SCALE: AS SHOWN	
	DRAWN BY: SRP	CHECKED BY: MT		