City of Palo Alto (ID # 6422)

Planning & Transportation Commission Staff Report

Report Type: **Meeting Date: 1/27/2016**

Summary Title: Site and Design Review of Regional Water Quality Control Plant Sludge Facility

Title: 2501 Embarcadero Way [File 15-PLN-00371]: Request by Public Works for Site and Design Review of a New Two-Story, 7,500 Square Foot, 50-Foot Tall Building Designed to Handle Sludge De-watering and Truck Load-outs, with Adjacent Stand-by Generator, Outdoor Equipment Area and Landscaping Improvements to be Centrally Located on the Regional Water Quality Control Plant Site. A Draft Mitigated Negative Declaration Has Been Published and Circulated for a 30-day Public Review and Comment Period.

From: Amy French, Chief Planning Official

Lead Department: Planning & Community Environment

Recommendation

Staff recommends that the Planning and Transportation Commission (PTC):

1. Review the Draft Mitigated Negative Declaration (MND) and provide comments, and
2. Conduct the Site and Design Review application hearing and recommend approval to the City Council.

A Draft Record of Land Use Action (RLUA) is included as Attachment A.

Executive Summary

Public Works' Environmental Quality Division staff proposes a new dewatering facility at the center of the Regional Water Quality Control Plant (RWQCP) site, a 25-acre facility owned and operated by the City of Palo Alto. The plant treats wastewater from the East Palo Alto Sanitary District, Los Altos, Los Altos Hills, Mountain View, Palo Alto and Stanford University. The proposed facility is a two-story, 7,500 square foot (sf) building to be placed centrally and in an open area, with a separate standby generator and nearby equipment area. This project is part of a long term RWQCP plan to carry out the Biosolids Facility Plan (BFP).

The Site and Design Review process is intended to ensure that development in environmentally and ecologically sensitive areas will be harmonious with other uses in the general vicinity, compatible with environmental and ecological objectives, and in accord with the Palo Alto Comprehensive Plan. For major projects on sites zoned as a (D) overlay, the review process

begins with a PTC public hearing. The PTC is requested to review the draft MND and project and consider whether it meets the Site and Design Review objectives set forth in Palo Alto Municipal Code (PAMC) Chapter 18.30(G).060; the PTC is requested to recommend the project and draft MND to Council. Following PTC review, the project will be presented to the Architectural Review Board (ARB). The PTC meeting minutes and recommendation will be shared with the ARB with its formal review of this project, tentatively scheduled February 18, 2016. The ARB will be requested to recommend Council approval based on the findings for architectural review approval set forth in PAMC Chapter 18.76, Section 18.76.020.

The attached Initial Study/Draft Mitigated Negative Declaration (MND) was published December 15, 2015 for public review and comments, in accordance with the California Environmental Quality Act (CEQA). The comments received prior to publication of this report are provided herein (Attachment H). Responses to comments submitted during the 30-day initial review period are being prepared, and will be included in the MND documentation presented to Council. The plans and documents for this project, including the Draft Migitated Negative Declaration, are viewable on the City's website at http://www.cityofpaloalto.org/gov/boards/architectural/default.asp

Background

The dewatering facility is proposed on the RWQCP site, zoned 'Public Facilities' (PF) and designated 'Major Institutions/Special Facilities' on the City's Comprehensive Plan land use map. This project is part of a long term plan for the RWQCP indentified in the City's Biosolids Facility Plan (BFP) and companion document, the City of Palo Alto Long Range Facilities Plan Final Report of 2012. The BFP addresses the management and reuse of wastewater solids produced at the RWQCP through year 2045. The existing facility, built in 1934, provides treatment and disposal of wastewater for Palo Alto, Mountain View, Los Altos, Los Altos Hills, East Palo Alto and Stanford University. Over time, the facility was expanded to handle a dry weather flow capacity of 39 million gallons per day (MGD), and current average flow of 18 MGD. Palo Alto plans to decommission the existing furnaces (or Multiple Hearth Furnaces). The site is addressed in and is subject to policies of the 2008 Palo Alto Baylands Master Plan (Plan), viewable at thef ollowing link:
http://www.cityofpaloalto.org/civicax/filebank/documents/14882

All dewatering operations will occur within the new building, where continuous machinery operations will be isolated from the environment. No staff will permanently occupy the building; staff will perform routing operation and maintenance of the facility. The building will house belt filter presses, an interior truck loadout and other support areas, and will have a robust system for odor control. The project includes a stand-by deisel engine generator and fuel storage in a sub-base fuel tank.

Simple site improvements are proposed to the landscaping, paving and drainage systems. Though the project site is within 500 feet of the Baylands preserve, it does not contain any native marshland or aquatic habitats, but it does contain significant mature vegetation. The

project description (Attachment B), statement of landscape design intent (Attachment C), project plans (Attachment F), and Initial Study/Mitigated Negative Declaration (Attachment G) documents provide greater detail about existing conditions on the site and the proposed project.

Embarcadero Road – Site Visibility

The Palo Alto Comprehensive Plan identifies Embarcadero Road as a "scenic route". The RWQCP has frontage along Embarcadero Road, Embarcadero Way, and Harbor Road. The closest building to Embarcadero Road is a one-story, Cor-Ten steel maintenance building. It is the rectangular building seen in the aerial; the below image is a view of it from Embarcadero Road.

The circular structure nearest Embarcadero Road is a recycled water storage tank that has a low profile and is barely visible from Embarcadero Road. The tallest building on the plant site, the Incinerator Building, is appropriately screened by existing mature and new vegetation located on the site along Embarcadero Road. This vegetation also screens minor buildings and appurtenance on the site. The height of the existing incinerator building is 45'9" to the top of the parapet, plus an additional five feet of height for rooftop equipment.

The above aerial indicates the proposed location of the sludge dewatering and loadout facility just southeast of the incinerator building. The new building and truck access route will be placed on land that is currently open with no permanent structures. Other on-site functions

and off-site views of the site are indicated on the aerials and in photos in the attached application materials, and found on the City's website at the link provided earlier in this report.

Surrounding Properties

The surrounding uses include the business park to the west, the capped landfill to the south that is undergoing a transition to parkland, the Palo Alto Airport to the north, and the Baylands Nature Preserve to the east. The Baylands Nature Preserve is a major migratory bird stopover on the Pacific Flyway, and supports trails for use by cyclists, runners, hikers and bird watchers. The non-City owned properties along Embarcadero Way are all developed and zoned ROLM(E)(D)(AD), which stands for 'Research, Office, and Limited Manufacturing' District Sub-District 'Embacadero' with 'Automobile Dealership' Combining District, and designated as Research/Office Park on the City's Comprehensive Plan land use map.

The boundaries of the preserve occur approximately 500 feet to the east and 800 feet to the south of the site. The tall, dense thicket of privet trees along the site's eastern boundary creates a natural barrier between the site, the adjacent roadways (Embarcadero Road and Harbor Road), and the preserve lands to the east. The southern portion of the RWQCP developed lands is lined with coast live oak trees. The images provided in the plans include simulations of the new building as would be viewed from the expanding Bixby park and from the Baylands Preserve.

New Building and Support Facilities

The building and support facilities are proposed to be located in the middle of the existing RWQCP site, where there are no existing structures or uses. The new 7,500 sf building will be a cast-in-place concrete structure, with painted structural steel, profiled Cor-Ten steel panels and removable skylights. The parapet would reach a height of 50 feet above grade. Above the parapet, Cor-Ten steel guardrails would extend two feet and one ventilation stack would extend 15 feet. The floor of the buidling would be placed one foot above the 100-year base flood elevation of 10.5'. This will become the tallest building on the site. Photos of the site with superimposed images of the existing structures and proposed building are provided below.

VIEW FROM ENTRY GATE

VIEW FROM BEHIND TRICKLING FILTERS

VIEW FROM JOGGING PATH

VIEW FROM FOOTBRIDGE

The design is intended to complement the existing architectural style at the treatment plant. The concrete walls will include vertical flutes, horizontal reveals and exposed form ties.

Landscaping

The landscape design intent is to blend the new building into the existing landscaped site. Plant material will be drought tolerant, local and non-local California native species selected to tolerate the facility's recycled water. Plantings are intended to interrupt views of the new building from off-site locations. The intent statement (Attachment C) includes design objectives and plant materials to be used. The areas proposed for new planting treatments include the 'sharps' pharmaceutical drop-off area, truck bay loading drive, building perimeter, public tour gathering area, and Embarcadero Way exit driveway.

Landscape development zones for the project and a legend are shown on the following page, as are plans showing proposed screen landscaping to limit views of the building from the Baylands Nature Preserve, a photo simulation of screen landscaping at 10 years adjacent to the proposed building, and concepts for new landscaping to be installed in the area leading up to the new building along the driveway from Embarcadero Way. Refinements to the planting plans are underway and will be presented to the Architectural Review Board for its formal review.

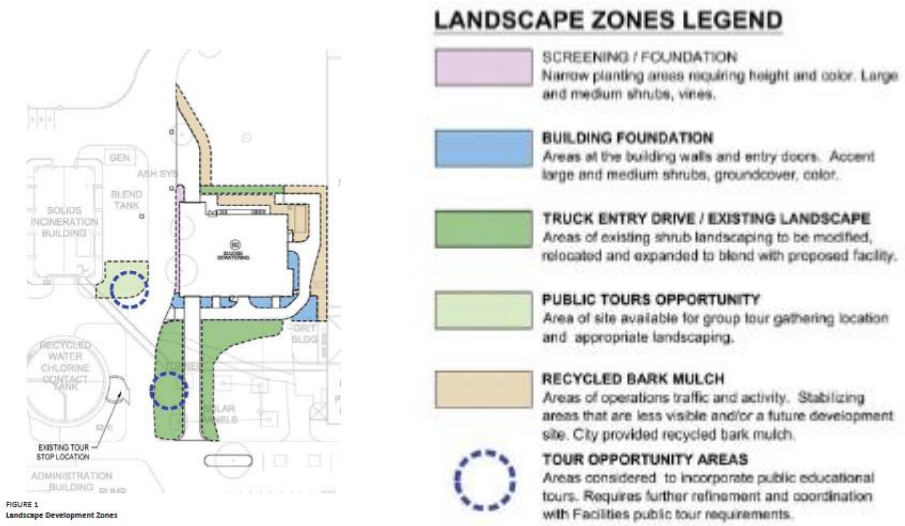
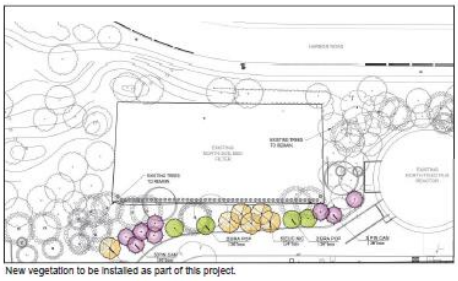
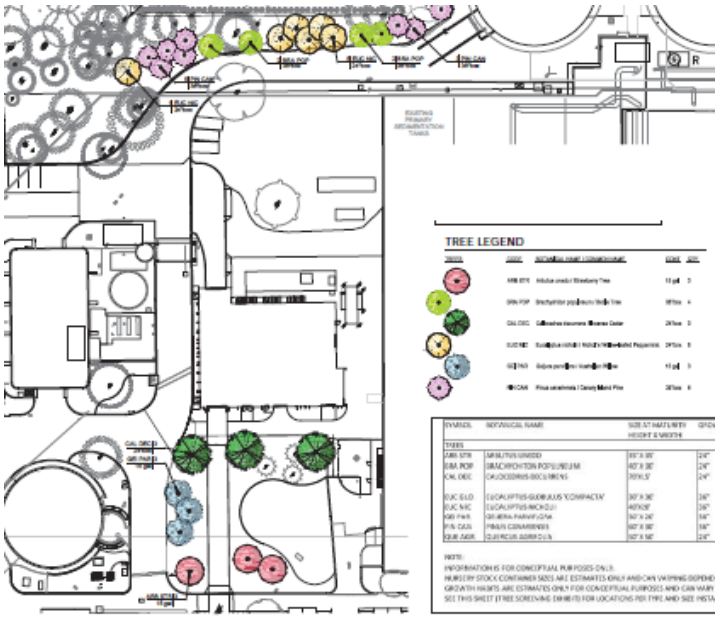


FIGURE 1
Landscape Development Zones



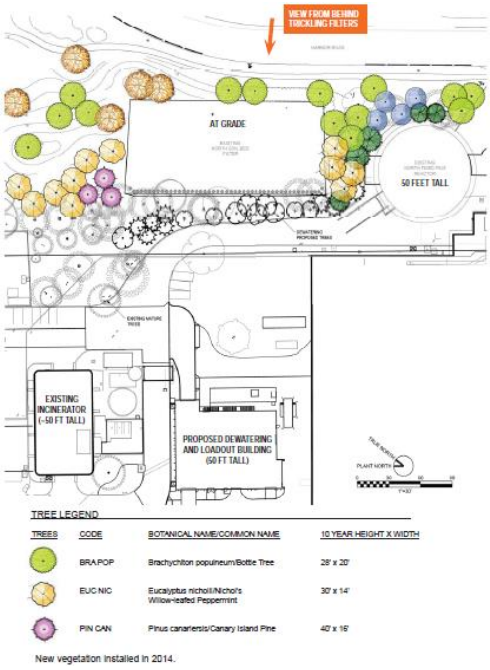
New vegetation to be installed as part of this project.

View from behind trickling filters. (Anticipated tree screening at 10 years)



New plantings with this project include trees that will be seen from Embarcadero Way (3 24"-box sized trees and 6 15-gallon sized trees), and from Harbor Road (18 36"-box sized trees). The new trees in front of the new building include three Strawberry trees, three Incense Cedars, three Australian Willows; new trees between the building and existing north soil bed filter include Strawberry trees, Bottle trees, Incense Cedars, Willow-leafed Peppermint Eucalyptus trees, Australian Willows and Canary Island Pines. Two sides of the new building will be partially screened with new vine plantings using a free standing mesh fence.

Landscape plantings, shown in color in the following images, were installed along the perimeter of the site adjacent to the Baylands Nature Preserve in 2014.



The recently planted screen plantings along the roadways (including the landscaping shown in color in the above image) implemented a past permit approval condition requiring the installation and maintenance of landscaping around the site's perimeter to provide visual screening for visitors to the surrounding Baylands Preserve. The perimeter landscaping project area extended along a portion of Embarcadero Road, Harbor Road and the southern portion of the RWQCP. A PTC study session had been held on August 31, 2011 to alert the community to the landscape project that was handled as a staff level review. The design followed input from an advisory committee's input of representatives that included Canopy, Audubon, California Native Plant Society and residents concerned with Baylands preservation. The perimeter landscaping goals were to:

(1) screen the RWQCP from the Baylands,
(2) define a path system at Embarcadero and Harbor Road for safer pedestrian travel,
(3) use a plant palette that is beneficial to native wildlife,
(4) irrigate with recycled water,
(5) use interpretive signage in the project areas illustrating how the RWQCP helps protect the Baylands from pollution, and
(6) enhance the southern portion of the Plant landscaping to serve as a habitat corridor linking San Francisco Bay and Emily Renzel Marsh.

In addition to the perimeter landscaping, the prior approved project included interior landscaping intended to improve the aesthetics within the RWQCP campus, create meeting areas and safer way finding for the RWQCP tours provided to the public, showcase recycled water use, demonstrate sustainable landscape design; and become certified as a Bay-Friendly Gardening Landscape and incorporate related topics into the RWQCP tour discussion.

Architectural Review Board Study Session

The ARB conducted a Study Session review of the project on December 17, 2015. There was one public speaker who noted he had not yet seen the public notice regarding publication of the environmental document; he noted concerns about the building height and the need for odor control following the decommissioning of the incinerator, and later provided written comments on the MND (Attachment H). The ARB members provided input on the ways the drawings could be improved for accuracy, expressed its appreciation of the selected materials, and noted a need to enhance landscaping and fencing at the Embarcadero Way driveway to continue the level of landscaping recently implemented along Embarcadero Road. The ARB asked that the architect improve the most public elevation – the elevation facing Embarcadero Way – and de-clutter the entry gate area. The project will return to the ARB following the PTC's review and recommendation.

Summary of Land Use Action

Mitigated Negative Declaration

- The Notice of Intent (to adopt an MND, Attachment D) and Notice of Availability (of the Initial Study/MND for Review and Comments, Attachment E) were filed at the County of Santa Clara at the start of the review period, December 15, 2015 and availability notice was published in the San Jose Mercury News.
- The PTC is requested to review and comment on the Initial Study/MND (Attachment G) and review and adjust, if necessary, the Site and Design Review findings contained in the Draft Record of Land Use Action (RLUA) to forward the application to the ARB and Council. Responses to the January 13, 2016 comments (Attachment H) on the MND are being prepared.
- The ARB may provide comments on the MND in conjunction with its assessment of the project with respect to Aesthetics and the Architectural Review approval findings contained in the RLUA.

Site and Design Review Objectives

The Planning and Transportation Commission's purview is to recommend approval and/or such changes as it may deem necessary to accomplish key objectives are set forth in PAMC 18.30(G).060, 'Action by Commission'. Recommendation of approval or changes to the project should relate to these objectives:

(a) To ensure construction and operation of the use in a manner that will be orderly, harmonious, and compatible with existing or potential uses of adjoining or nearby sites.

(b) To ensure the desirability of investment, or the conduct of business, research, or educational activities, or other authorized occupations, in the same or adjacent areas.

(c) To ensure that sound principles of environmental design and ecological balance shall be observed.

(d) To ensure that the use will be in accord with the Palo Alto Comprehensive Plan.

Summary of Key Issues

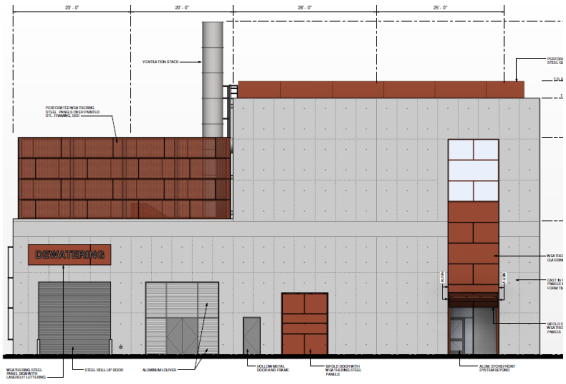
This report section includes analysis of the project's compliance with development standards for the Public Facilities (PF) zone district, policies and programs of the Comprehensive Plan and Baylands Master Plan, and an overview of several CEQA topics addressed in the MND.

PF Development Standards and Project Visibility

The PF public facilities district is designed to accommodate governmental, public utility, educational, and community service or recreational facilities. Public Facilities Development Standards contained in PAMC Chapter 18.28 limit buildings to a maximum height of 50 feet, lot coverage to 30% of the site's area, and Floor Area Ratio (FAR) to 1:1. The project meets these maximums, and the building placement is such that setbacks from property lines are much greater than the minimum standards.

Building Height

The building parapet height of 50 feet meets the height standard. The ventilation stack is shown as reaching a height of 65 feet or 15 feet above the height limit in the PF zone district. PAMC Chapter 18.40 Section 18.40.090 'Height Exceptions' allows exhaust fans to exceed the height limit of any zone district by 15 feet. There is no special process or findings for this exception beyond the Site and Design Review and Architectural Review process and findings.



Views from Embarcadero Road Scenic Corridor

The proposed sludge dewatering building would located be southeast of the Incinerator Building and the parapet would be 4'3" taller than the Incinerator building. Views from Embarcadero Road would be screened by the existing vegetation and Incinerator Building. However, following decommissioning of the incinerator's furnace, the incinerator building would be removed. The future replacement building(s) to handle this process (anaerobic digesters, for instance) would also be approximately 50 feet tall and would likely be located between the new building and Embarcadero Road.

Views from Baylands Preserve and Bixby Park

Views of the new sludge dewatering building from the Baylands Nature Preserve would be

increasingly interrupted as the proposed plantings and recently planted vegetation mature. The plans include views of the proposed building and existing buildings with trees at 10-year growth; these views are taken from the jogging path, footbridge, and from behind the trickling filters, and from the Future Bixby Park (three different points – A, B, and C). The existing trickling filters, the closest structures to the Baylands Preserve on two sides of the site, are also 50 feet tall and visible from these vantage points as well. The new parkland south of the site has been hydro-seeded and trails have been installed; by June 2016, Community Services staff anticipates completion of the remaining components (vegetation islands, benches and interpretive signs) to open the facility. The Attachment H comments about "high points" from the new park have been forwarded to Community Services staff and the applicant and responses are being prepared to address these comments.

Comprehensive Plan

The following policies are relevant to the proposed project and are included in the RLUA:

- POLICY L-5: Maintain the scale and character of the City. Avoid land uses that are overwhelming and unacceptable due to their size and scale.
- POLICY L-48: Promote high quality, creative design and site planning that is compatible with surrounding development and public spaces.
- POLICY N-29: All potential sources of odor and/or toxic air contaminants should be adequately buffered, or mechanically or otherwise mitigated to avoid odor and toxic impacts that violate relevant human health standards.
- POLICY N-37: Ensure the environmentally sound disposal of solid waste.

As noted, the proposed building is of a similar scale and materials to the tallest and most visible structures on the project site, and the proposed central placement on the site and new vegetation (at maturity) will help mitigate views of the new building from off site. The building is designed with a "robust" odor control system to meet regional air quality standards. The facility's purpose is to "de-water" and "load out" waste.

2008 Baylands Master Plan and 2005 Design Guidelines

The 1998 Comprehensive Plan refers to the 1987 *Baylands Master Plan*; the Plan was updated in 2008 (for which the link was provided early in this report) and addresses the RWQCP on pages 181-194. Policies that can be applied to the site are also found in other Plan chapters ("Overall" on page 65, "Flood Control" on page 257, and "Access & Circulation" on page 242).

The 2005 *Site Assessment and Design Guidelines, Palo Alto Baylands Nature Preserve* document was prepared to help implement the Baylands Master Plan and the Baylands-related Comprehensive Plan policies and programs. The link to these guidelines is as follows: http://www.cityofpaloalto.org/civicax/filebank/documents/13318. The guidelines document is intended to be used when designing or reviewing projects located in any part of the Baylands. The Baylands Master Plan notes, "While the more specific guidelines are primarily applicable to the dedicated parkland, the design principles and concepts should also be applied in the service and commercial areas when designing or reviewing projects for compatibility with the special

aesthetic qualities and environmental conditions unique to the Baylands."

The design principles contained in the guidelines are as follows:

- **Use only muted natural colors.** Choose materials and finishes that will weather without degrading. Avoid bright, reflective colors, including white. Allow wood to weather to gray, allow metals to rust to dark brown. Confine bright colors to small areas where necessary for safety. For example, it is preferred to use a small, low mounted "No Parking" sign rather than paint extensive red curbs. The landscape is exposed to constant salt-laden winds. Select materials that will weather well, last a long time, and require little to no maintenance. Cor-ten or mild steel which weathers to dark brown is preferable to galvanized steel which does not weather to a dark color.
- **Preserve the horizon line with low and horizontal elements.** The dominant landscape feature of the Baylands is the horizon line of the open, treeless landscape and the flat water of the bay. Vertical elements that puncture this line have a large impact on the view. Therefore, keep elements low and horizontal. Preserve an unobstructed view of the horizon line.
- **Mount fences, enclosures, and identity signs low to the ground.** Posts should not protrude above the sign panel or fence fabric, no finials or decorative post tops should puncture the horizon line.
- **Reduce the size and mounting heights of regulatory signs.** Urban standards for regulatory signs, such as stop signs (typically 7' mounting height, 36" diameter sign), should be relaxed in recognition of the low traffic volumes and speeds in the Preserve.
- **Design for practicality.** Maintenance and improvement budgets are tight. Ensure that all improvements are practical, easily maintained and have low life-cycle costs.

The proposed materials for the new facility follow these guidelines, given the use of Cor-ten steel and other practical materials such as natural concrete, which will weather well and not appear "bright". The ARB will review the project's design details and the ARB staff report will address how the project meets these principles as well as the Architectural Review findings.

Building Design

The project description states that the building design is a modern reinterpretation of the existing material palette at the plant, and is intended to set a precedent for future campus improvements. The design is further intended to clearly define entries and control exterior views into the process areas. Architectural Design Objectives are provided on page 3 of the

submittal entitled "Component 1 Sludge Dewatering and Loadout Facility for the Regional Water Quality Control Plant, Site and Design Review". The criteria are briefly listed here:

- Emphasize functional and operational requirements, pedestrian and vehicular access,
- Provide safe, healthy, and comfortable workspaces for operations and maintenance staff,
- Blend into natural surroundings of Baylands Nature Preserve,
- Complement existing plan architecture and landscaping,
- Respect public view from outside the plant perimeter,
- Use consistent and practical forms, materials, finishes and colors,
- Design for durability, longevity, and low maintenance,
- Provide eduational opportunities for visitors and tour groups, and
- Establish architectural vocabulary for future facility improvements.

As noted, the ARB provided input in a study session and will provide a formal review of refined architectural drawings and landscape designs after the PTC review.

CEQA Topics

The Initial Study/Mitigated Negative Declaration addresses topics with descriptions of standard conditions of approval along with the one mitigation measure designed to reduce an issue of potential significance to a "less than significant" level, in the Biological Resources section of the document. The mitigation measure is to address bird nesting concerns in compliance with the Migratory Bird Treaty Act (MBTA). The following topics are noteworthy and summarized briefly below:

Aesthetics

The MND notes that:

- Views toward the site from most nearby uses (e.g., mini-storage, office buildings) have low visual character and quality consistent with the low-density urban setting.
- High-quality views from the Baylands are toward the bay itself.
- Inland views from the Baylands are dominated by Embarcadero Road, and by two prominent tank features on the RWQCP site – the north and south fixed film reactors.
- The new sludge dewatering and loadout facility may be visible from portions of the Baylands, most likely from due north at the trail access from Embarcadero Road.
- The scale of the building would be consistent with other visible RWQCP features such as the solids incineration building.

The MND concludes, "Because the project would be located on an existing RWQCP, would be similar in scale to existing features, and would meet the City's approval findings, the visual character and quality of views from the Palo Alto Baylands would not be substantially degraded. Impacts would be less than significant." Responses are being prepared to address Attachment H comments on views of the project from the "high points" or "high ground landmark" of the former landfill area.

Air Quality

The MND includes analyses and reflects standard practices that would address the impacts of construction on air quality in the area. The project's construction emissions would be below both BAAQMD and CEQA thresholds and pollutant control measures identified by the BAAQMD in its latest CEQA guidelines (2012) would be employed. The comments in Attachment H are critical of the consultant's technical memorandum on odor control, noting there is no substantial evidence to support the statements about odors and attaching the May 2015 memorandum.

Biological Resources - Birds

The MND contains a mitigation measure to ensure impacts to wildlife are less than significant; that is, to avoid the issue of nesting birds. Common birds found in the Baylands Preserve include great and snowy egrets, great blue heron, black-crowned night heron, green-winged teal, mallard, northern pintail, American coot, killdeer, black-necked stilt, and American avocet. The MND states that impacts on resident and migratory birds in the area would be reduced to a less-than-significant level. The MND states:

- Special-status bird species known from the region may fly over the site when migrating from the southern end to the north end of the preserve.
- These sensitive birds are not expected to stop and forage within the project site due to the lack of suitable foraging habitat and increased human activity.
- Common bird species adapted to urban lands may nest in the ornamental vegetation onsite during the nesting season (February to August).
- Nesting birds are covered under the Migratory Bird Treaty Act (MBTA) and would be considered a sensitive resource if active nests occur onsite during construction.

The verbiage concludes, "Because special-status bird species are not likely to forage or nest in the project area, the project construction activities would not result in significant impacts." The section includes avoidance measures (preconstruction nesting surveys, biological monitoring, and establishing construction-free buffer zones) for implementation during the nesting season to protect birds covered under the MBTA, if they decide to nest within the project area. The avoidance and minimization measures to reduce impacts during construction to a less-than-significant level are as follows:

• Pre-construction nesting surveys will be conducted before undertaking work during the nesting season (February through August). Any nest found within 50 feet for songbirds and 300 feet for raptors will be avoided, and a designated construction-free buffer zone will be established until the nests are no longer active;

•Biological monitoring of work activities for active bird nests found during the nesting season will be conducted by a qualified biologist; and

• A qualified biologist will conduct onsite informational meetings with all construction personnel before construction begins. The purpose of these training sessions will be to familiarize construction personnel with the procedures regarding nesting birds they are to follow.

Biological Resources - Vegetation and Other Wildlife

The site contains three blue gum trees and six coast redwood trees recently planted by the RQWCP as part of a tree experiment using recycled water. The nine trees onsite would not fall under the City's protected tree categories. One biotic habitat was identified within the project area: developed/ruderal lands; the MND notes that wildlife abundance and diversity is generally low in these areas. Below are excerpts of the MND on these topics.

The MND notes that:

> "Ruderal vegetation includes invasive forbs and nonnative annual grasses including Italian thistle, black mustard and wild oats. Native natural communities do not occur on the site. The developed/ruderal lands identified on the project site are limited in size and generally disturbed characterized by compact gravel surfaces, thereby precluding occurrence of most special-status species in the region, which typically occur in open grassland, marshlands, and woodlands. Furthermore, the sparely vegetated areas onsite are dominated by nonnative and invasive plant species, which significantly reduces their capacity to support special-status wildlife species. Therefore, special status species known from the region including the California clapper rail and saltmarsh harvest mouse are *not* expected to occur at the project site."

The MND also notes that:

> "Wildlife currently found in and around the project site is likely tolerant to levels of disturbance typically associated with ongoing operations of the RWQCP, air traffic from the existing airport to the north, and surrounding industrial and commercial development. The visual and acoustic disturbance to wildlife associated with the proposed project is not expected to be significantly higher than what currently exists, and wildlife in the adjacent areas are expected to habituate to these new levels of disturbance. The RWQCP is closed at 5pm; therefore, impacts on nocturnal wildlife would not be expected."

Transportation

The truck loading route and driveway would affect the sharps pharmaceutical drop-off bin, parking, the landscaped solar panel field, and the recycled water redwood grove study area. Currently, the building site area and parking lot serve the public visitors as well as daily staff pedestrian and vehicular traffic. Large and small vehicles travel through the existing driveway to access all areas of the plant and the Embarcadero Road exit gate. Public walking tours are guided through the area and currently stop at the recycled water tank arbor plaza area.

The MND notes that:

- During construction, approximately 10 vehicles per day are expected to access the job site.
- When the facility is operational, an estimated five trucks per day are expected to access the site for sludge loadout and hauling.
- All traffic would use Embarcadero Road and Embarcadero Way to access the truck loadout facility building.

The MND further describes the negligible Embarcadero Road impacts as follows:

> "As identified in the City of Palo Alto Comprehensive Plan, Embarcadero Road is classified as an arterial roadway that connects business parks and other uses and channels traffic to U.S. Highway 101. Embarcadero Road is a four-lane arterial with a designated bike lane and street parking traffic. This portion of Embarcadero Road is not used for public transit. Applicable plans include *Plan Bay Area: Strategy for a Sustainable Region*, but nothing in the applicable plans address the low levels of traffic generated by the project. Therefore, impacts would be less than significant. Construction activities would temporarily generate a negligible amount of additional traffic."

Flood Plain Construction

The MND notes that the RWQCP is one of several City facilities in the tidal flood plain. The area is designated as a high risk flood zone (Zone AE) with a base flood elevation of 11 feet by the Federal Emergency Management Agency (FEMA). While the proposed project would be within a 100-year floodplain, the facility will have a finished floor elevation of 11.5 feet. Because the finished floor would be above the base flood elevation, the project impacts would be less than significant.

Green House Gas and Cumulative Effects

The comments on the MND (Attachment H) assert that: (1) the MND erroneously omits the emissions from project operations, (2) Component 2 BFP effects on odors will be considerable, (3) Component 1 actual calculations are needed to show emissions and effect of odor controls, (4) Disclosure of the model CH2m used to evaluate odor must be provided, and (5) Alternative statements must be included regarding the need for odor control if Component 2 is gasification or pyrolysis. Staff has forwarded these comments to the consultant and project applicant team; responses to these comments are being prepared.

Timeline

The Site and Design Review application is tentatively scheduled for review in public hearings with the ARB and City Council in mid-February and March 2016, respectively. The timeframe for construction of the new dewatering facility is estimated to be 24 months.

Policy Implications

The PTC is tasked with ensuring the Site and Design Review findings, Comprehensive Plan policies and programs, and Environmental Review issues have been met or addressed, prior to forwarding the project to the ARB for its review in a second public hearing. Council has additional responsibilities as to expenditure of capital funds and service to the member agencies using these facilities.

<u>Sea Level Rise</u>

The new building is meant to have a lifespan of 50 years. Its floor is designed to be set at 11.5', one foot above the 100-year flood elevation of 10.5'. As the sea level rises, effluent pumping

would be used or added. The phrase associated with the approach to the design of this building is "anticipated adaptation" – raising the building's floor a foot above the 100 year floor elevation is the approach taken, absent any Council policy on other methods such as adding fill to the site or raising the height limit in flood zones to allow finished floors to be placed higher above grade. The Council report on the study session on January 25, 2015 can be found at the following link: http://www.cityofpaloalto.org/gov/agendas/council.asp

Environmental Review

The attached Initial Study/Draft Mitigated Negative Declaration (MND) was prepared by the City's consultant, ch2m. The MND notice was published in the San Jose Mercury News on December 15, 2015 and the MND was made available for public review in City Hall and the Development Center and on the City's website. The document has been circulated for agency and public comments for a 30 day period. The only topic that was identified as having a potential impact unless mitigated and requiring a mitigation measure was biological resources; namely, bird nesting. The MND contained measures to avoid this potential impact. The above section of the report on CEQA provided summaries of key sections of the document.

As discussed earlier in this report, the comments received during the initial public review period from Herb Borock address these CEQA topic sections: Aesthetics, Air Quality (odors), and Greenhouse Gas Emissions, as well as potential Cumulative effects (odors) from operation of the facility. As noted, the consultants and City staff (including Public Works and Community Services staff) have received these comments and are preparing responses to these comments.

Attachments:

- Attachment A: Draft Record of Land Use Action (DOC)
- Attachment B: Project Description (PDF)
- Attachment C: Landscape Design Intent (PDF)
- Attachment D: Notice of Intent (DOC)
- Attachment E: Notice of Availability (DOCX)
- Attachment F: December 2015 plans (PDF)
- Attachment G: Initial Study MND (PDF)
- Attachment H: Herb Borock Comments on MND (PDF)

ATTACHMENT A

ACTION NO. 2016-
RECORD OF THE COUNCIL OF THE CITY OF PALO ALTO OF LAND USE ACTION FOR 2501 EMBARCADERO WAY: SITE AND DESIGN REVIEW AND MITIGATED NEGATIVE DECLARATION *(*CITY OF PALO ALTO, APPLICANT)

On March 21, 2016, the Council approved the Mitigated Negative Declaration and the Site and Design Review application for the sludge dewatering and load out facility at the Regional Water Quality Control Plan in the PF(D) Public Facility with Site and Design Overlay Zone District, making the following findings, determination and declarations:

SECTION 1. Background. The *City Council of the City of Palo Alto ("City Council")* finds, determines, and declares as follows:

A. On September 9, 2015, Palo Alto Public Works staff applied for Site and Design Review of the sludge dewatering and loadout facility at the Regional Water Quality Control Plant (RWQCP) in the PF(D) Public Facility with Site and Design Overlay zone district ("the Project").

B. Following staff review, ARB study session review and preparation and circulation of the draft Mitigated Negative Declaration, the Planning and Transportation Commission ("Commission") reviewed the Project on January 27, 2016 and voted [x-y] to recommend that Council approve the project. The Commission's actions are contained in the CMR ID #6424.

C. Following Commission review, the Architectural Review Board (ARB) reviewed the Project on February 18, 2016 and voted (x-y) to recommend approval. The ARB's actions are contained in the CMR ID #6424.

SECTION 2. Environmental Review. The City as the lead agency for the Project has determined that the project is subject to environmental review under provisions of the California Environmental Quality Act (CEQA) under Guideline section 15070, Decision to Prepare a Negative or Mitigated Negative Declaration. An environmental impact assessment was prepared for the project and it has been determined that, with the implementation of mitigations, no potentially adverse impacts would result from the development and, therefore, the Project would have a less than significant impact on the environment. The Mitigated Negative Declaration was made available for public review beginning December 15, 2016 through January 13, 2016. The Initial Study and Draft Mitigated Negative Declaration are contained in CMR ID #6424.

SECTION 3. Site and Design Review Findings

1. The use will be constructed and operated in a manner that will be orderly, harmonious, and compatible with existing or potential uses of adjoining or nearby sites.

The Project will be consistent with the existing functions of the RWQCP and would not further impact the existing and potential uses of adjoining or nearby sites. The new structures will be screened to maintain a harmonious and compatible relationship with the Baylands environment.

2. *The project is consistent with the goal of ensuring the desirability of investment, or the conduct of business, research, or educational activities, or other authorized occupations, in the same or adjacent areas.*

The Project will maintain desirability of investment in the same and adjacent areas. The design and size of the project are generally consistent with the existing buildings at the facility, and the construction of all improvements will be governed by the regulations of the current Zoning Ordinance, the Uniform Building Code, and other applicable codes to assure safety and a high quality of development.

3. Sound principles of environmental design and ecological balance are observed in the project.

The Project will implement appropriate sustainable building practices as deemed feasible. Given the proposed Mitigation Measure, the Project will not have a significant environmental impact as indicated by the proposed Mitigated Negative Declaration for this Project.

4. The use will be in accord with the Palo Alto Comprehensive Plan.

The Project, as conditioned, complies with the policies of the Land Use and Community Design and the Natural Environment elements of the Comprehensive Plan; specifically, with the following applicable policies:

- POLICY L-5: Maintain the scale and character of the City. Avoid land uses that are overwhelming and unacceptable due to their size and scale.
- POLICY L-48: Promote high quality, creative design and site planning that is compatible with surrounding development and public spaces.
- POLICY N-29: All potential sources of odor and/or toxic air contaminants should be adequately buffered, or mechanically or otherwise mitigated to avoid odor and toxic impacts that violate relevant human health standards.
- POLICY N-37: Ensure the environmentally sound disposal of solid waste.

The proposed building is of a similar scale and materials as the tallest and most visible structures on the project site, and the proposed central placement on the site and existing and new vegetation (at maturity) will help mitigate views of the new building from off site. The building is designed with a “robust” odor control system to meet regional air quality standards. The facility’s purpose is to “de-water” and “load out” waste. The project incorporates quality design that recognizes the sensitive nature of the Baylands area as described in the Comprehensive Plan.

SECTION 4. Site and Design Approval Granted. Site and Design Approval is granted for the project by the City Council under Palo Alto Municipal Code Section 18.30(G), subject to the conditions of approval in Section 7 of this Record.

SECTION 5. Architectural Review Findings.

The design and architecture of the proposed improvements, as conditioned, complies with the Findings for Architectural Review as required in Chapter 18.76 of the PAMC (grouped into six categories below).

Comprehensive Plan and Purpose of ARB:

- Finding #1: The design is consistent and compatible with applicable elements of the Palo Alto Comprehensive Plan.
- Finding #16: The design is consistent and compatible with the purpose of architectural review, which is to:
    - Promote orderly and harmonious development in the city;
    - Enhance the desirability of residence or investment in the city;
    - Encourage the attainment of the most desirable use of land and
    - improvements;
    - Enhance the desirability of living conditions upon the immediate site or in
    - adjacent areas; and
    - Promote visual environments which are of high aesthetic quality and variety and which, at the same time, are considerate of each other.

The project is consistent with Findings #1 and #16 because:

As noted in Section 3 of this RLUA, Site and Design Review Finding #4, the project meets policies L-5, L-48, N-29 and N-37. The proposed building is of a similar scale and materials as the tallest and most visible structures on the project site, and the proposed central placement on the site and existing and new vegetation (at maturity) will help mitigate views of the new building from off site. The building is designed with a "robust" odor control system to meet regional air quality standards. The facility's purpose is to "de-water" and "load out" waste. The project incorporates quality design of an aesthetic quality and variety appropriate to the RWQCP campus and the sensitive nature of the adjacent Baylands Nature Preserve.

Compatibility and Character:

- Finding #2: The design is compatible with the immediate environment of the site.
- Finding #4: This finding of compatibility with unified or historic character is not applicable to the project.
- Finding #5: The design promotes harmonious transitions in scale and character in areas between different designated land uses.
- Finding #6: The design is compatible with approved improvements both on and off the site.

The project is consistent with Findings #2, #4, #5 and #6 because:

There is no unified design or historic character along this portion of Embarcadero Road/Embarcadero Way. The design and layout of the project takes into consideration the existing conditions on site and adjacency to the surrounding industrial and natural environments. The project includes mature tree preservation and new landscaping to improve screening of the proposed, centrally located building; this will reduce potential impacts on public views from the Baylands Nature Preserve. The building materials and design will be compatible with the palette and design of industrial architectural style of buildings on the site (cast-in-place concrete, painted structural steel, and profiled Cor-Ten steel panels). The project is not located in a transitional area on the site and the building location far from the edge of the site which abuts the Baylands Nature Preserve. The improvements are compatible with the existing plant use and the siting of the building is compatible with future plans for improvements at the plant.

Functionality and Open Space:

- Finding #3: The design is appropriate to the function of the project.
- Finding #7: The planning and siting of the building on the site creates an internal sense of order and provides a desirable environment for occupants, visitors and the general community.
- Finding #8: The amount and arrangement of open space are appropriate to the design and the function of the structures.

The project is consistent with Findings #3, #7, and #8 because:
The new facility serves a utilitarian purpose and the structure's simple design reflects this use. The new building is centrally located on the site and ancillary facilities are nearby, including parking for visitors, in an orderly and accessible manner for users of the facility. The building's entry points are clearly defined to promote safety, security, and wayfinding. The architectural design includes skylights to allow daylight into the space and access for the maintenance or replacement of equipment.

Circulation and Traffic:

- Finding #9: Sufficient ancillary functions are provided to support the main functions of the project and the same are compatible with the project's design concept.
- Finding #10: Access to the property and circulation thereon are safe and convenient for pedestrians, cyclists and vehicles.

The project is consistent with Findings #9 and #10 because:
The project does not include nor require any changes to the vehicular site access from Embarcadero Way; a new service drive (load-out entrance road) will be created off the main driveway for trucks to access the Sludge Dewatering and Loadout facility, and adjustments will be made to the existing internal vehicular driveway. No adjustments are proposed to the existing parking spaces on the site. Concrete pedestrian ways are proposed to allow for adequate circulation around the proposed facilities.

Landscaping and Plant Materials:

- Finding #11: Natural features are appropriately preserved and integrated with the project.

- Finding #12: The materials, textures and colors and details of construction and plant material are an appropriate expression to the design and function and compatible with the adjacent and neighboring structures, landscape elements and functions.
- Finding #13: The landscape design concept for the site, as shown by the relationship of plant masses, open space, scale, plant forms and foliage textures and colors create a desirable and functional environment on the site and the landscape concept depicts an appropriate unit with the various buildings on the site.
- Finding #14: Plant material is suitable and adaptable to the site, capable of being properly maintained on the site, and is of a variety that would tend to be drought-resistant and to reduce consumption of water in its installation and maintenance.

The project is consistent with Findings #11- #14 because:
The Project incorporates the minimal removal of vegetation and the installation of new native trees to supplement screen trees planted in 2014. Along with heavy screen trees existing around the property perimeter, the new screen trees will help further interrupt views of the new building from Embarcadero Way (3 24"-box sized trees and 6 15-gallon sized trees), and from Harbor Road (18 36"-box sized trees). New trees in front of the new building include three Strawberry trees, three Incense Cedars, three Australian Willows; new trees between the building and existing north soil bed filter include Strawberry trees, Bottle trees, Incense Cedars, Willow-leafed Peppermint Eucalyptus trees, Australian Willows and Canary Island Pines. The selection of construction materials, finishes and plantings is appropriate for this facility and the Baylands; they are simple in form and use natural color tones and materials. The proposed native landscape design will maintain the site's character and provide visual screening for the new building. Two sides of the new building will be partially screened with new vine plantings using a free standing mesh fence.

Sustainability:

- Finding #15: The design is energy efficient and incorporates renewable energy design elements including, but not limited to:

a. Careful building orientation to optimize daylight to interiors
b. High performance, low-emissivity glazing
c. Cool roof and roof insulation beyond Code minimum
d. Solar ready roof
e. Use of energy efficient LED lighting
f. Low-flow plumbing and shower fixtures
g. Below grade parking to allow for increased landscape and storm-water treatment areas

The project is consistent with Finding #15 because:
The proposed materials are durable. Cor-Ten steel has resistance to atmospheric corrosion, negates the need for painting, is local sourced and manufactured, has a high proportion of recycled content and is 100% recyclable. The concrete is resource efficient, durable, energy efficient, creates minimal waste during construction, and is recyclable. The electrical design includes the use of intelligent motor control centers which are energy efficient. Recycled water will be used for all process water needs. The plant's air emissions footprint will be reduce following decommissioning of the incinerator building. In accordance with the City's Green

Building Regulations, the building will satisfy the requirements for CALGreen Mandatory + Tier 2.

SECTION 6. Plan Approval.

The plans submitted for Building Permit shall be in substantial conformance with those plans prepared by ch2m, consisting of x pages, dated xxx and received xxx, except as modified to incorporate the conditions of approval in Section 7. A copy of these plans is on file in the Department of Planning and Community Development.

SECTION 7. Conditions of Approval.

Planning Division

1. The plans submitted for Building Permit shall be in substantial conformance with plans received on December 10, 2015, except as modified to incorporate the following conditions of approval and any additional conditions placed on the project by the Planning Commission or City Council. A complete copy of this Record of Land Use Action shall be printed on the plans submitted for the Building Permit.

2. The final Plans submitted for building permit shall include the following information and notes on the relevant plan sheets:

    a. Sheet T-1 Tree Protection-it's Part of the Plan (http://www.cityofpaloalto.org/environment/urbancanopy.asp), Applicant shall complete the Tree Disclosure Statement. Inspections and monthly reporting by the project arborist are mandatory. (All projects: check #1; with tree preservation report: check #2-6; with landscape plan: check #7.)

    b. Protective Tree Fencing Type. Delineate on grading plans, irrigation plans, site plans and utility plans, Type II fencing around Street Trees and Type I fencing around Protected/Designated trees as a bold dashed line enclosing the Tree Protection Zone per instructions on Detail #605, Sheet T-1, and the City Tree Technical Manual, Section 6.35-Site Plans.

3. Prior to demolition, grading or building permit issuance, a written verification from the contractor that the required protective fencing is in place shall be submitted to the Building Inspections Division. The fencing shall contain required warning sign and remain in place until final inspection of the project.

4. Tree Damage, Injury Mitigation and Inspections apply to Contractor. Reporting, injury mitigation measures and arborist inspection schedule (1-5) apply pursuant to TTM, Section 2.20-2.30. Contractor shall be responsible for the repair or replacement of any publicly owned or protected trees that are damaged during the course of construction, pursuant to Title 8 of the Palo Alto Municipal Code, and city Tree Technical Manual, Section 2.25.

5. The following general tree preservation measures apply to all trees to be retained: No storage of material, topsoil, vehicles or equipment shall be permitted within the tree enclosure area. The ground under and around the tree canopy area shall not be altered. Trees to be retained shall be irrigated, aerated and maintained as necessary to ensure survival.

6. Maintenance. For the life of the project, all landscape and trees shall be reasonably well-maintained, watered, fertilized, and pruned according to Nursery and American National Standards for Tree, Shrub and Other Woody Plant Maintenance- Standard Practices (ANSI A300-1995) as outlined in the Palo Alto Tree Technical Manual.

7. The RLUA and all Department conditions of approval for the project shall be printed on the plans submitted for building permit.

8. Any exterior changes to the building such as size, location, materials or signage are subject to ARB review and approval prior to final issuance of occupancy/installation.

9. A Planning Division Final inspection will be required to determine substantial compliance with the approved plans prior to the scheduling of a Building Division final. Any revisions during the building process must be approved by Planning, including but not limited to; materials, landscaping and hard surface locations

ADDITIONAL CONDITIONS TO BE ADDED FOLLOWING ARB REVIEW OF REVISED PLANS

SECTION 8. Term of Approval.

1. Site and Design Approval. In the event actual construction of the project is not commenced within three years of the date of council approval, and if such approval is received prior to xxxx, the approval shall expire and be of no further force or effect, pursuant to Palo Alto Municipal Code Section 18.30(G).080, unless extended for an additional year by the Director of Planning and Community Environment.

PASSED:

AYES:

NOES: ABSENT:

ABSTENTIONS:

ATTEST: APPROVED:

_____ _____

City Clerk Director of Planning and Community Environment

ATTACHMENT A

APPROVED AS TO FORM:

_____
Senior Asst. City Attorney

PLANS AND DRAWINGS REFERENCED:

1. Those plans prepared plans prepared by , consisting of 3 pages, dated and received December x, 2015.

ARB Submittal for Major Project

Component 1 Sludge Dewatering and Loadout Facility for the Regional Water Quality Control Plant

Site and Design Review

Prepared for
City of Palo Alto

September 2015

ch2m

Component 1 Sludge Dewatering and Loadout Facility for the Regional Water Quality Control Plant

Project Description

PREPARED FOR:	Architectural Review Board/City of Palo Alto
COPY TO:	Padmakar M. Chaobal/Regional Water Quality Control Plant
PREPARED BY:	CH2M
DATE:	September 2015

This project description summary is prepared for the City of Palo Alto (City) Architectural Review Board (ARB) site and design review of the Sludge Dewatering and Loadout Facility project (proposed project) at the Regional Water Quality Control Plant (RWQCP), Palo Alto, California. The proposed project would include the construction and operation of a sludge dewatering and loadout facility at the City's RWQCP.

Introduction and Background of the Project

The City of Palo Alto has operated the RWQCP for more than 80 years. Originally constructed in 1934, the RWQCP is an advanced treatment facility that provides treatment and disposal of wastewater for the cities of Palo Alto, Mountain View, and Los Altos; the Town of Los Altos Hills; the East Palo Alto Sanitary District; and Stanford University. The RWQCP has undergone several expansions and upgrades throughout the years and currently has a designed average dry weather flow capacity of 39 million gallons per day (MGD) and a current average flow of about 18 MGD. The RWQCP effluent is partly discharged to the San Francisco Bay, and partly diverted to the RWQCP recycled water facility for reuse.

The City's vision for future biosolids management encompasses the need to address the RWQCP's aging solids handling infrastructure, to proactively comply with changing and uncertain regulations affecting biosolids, and to respond to community goals to increase the beneficial use of recovered organic resources city-wide. Pursuant to this vision, Palo Alto's City Council has prioritized the decommissioning of the RWQCP multiple-hearth furnaces (MHFs) by the year 2019. The MHFs currently incinerate the RWQCP wastewater residuals, but the MHFs are at the end of their useful life; therefore, the City evaluated options for wastewater residuals management. Hence, the City developed a Biosolids Facility Plan (BFP) that provides a long-term roadmap to enable the City to reliably and sustainably manage and beneficially reuse the wastewater solids produced at the RWQCP through year 2045. The BFP was developed as a companion document to the City of Palo Alto Long Range Facilities Plan for the Regional Water Quality Control Plant Final Report (LRFP) (Carollo Engineers, 2012). The BFP builds on the LRFP, allowing solids processing recommendations in the BFP to move forward in concert with other planned improvements at the RWQCP (as defined in the LRFP). Together, the two documents provide a comprehensive long-term plan for the RWQCP.

The proposed project being submitted for site and design review is the dewatering and loadout facility, also known as Component 1 of the BFP. The dewatering and loadout facility would have independent utility as a backup sludge dewatering and haul off facility that can be used long-term even if additional BFP components are not built.

Scope of the Project

The proposed project includes the construction of a new building to accommodate the installation of four belt filter presses. The project also includes mechanisms to convey the resulting dewatered cake from the belt filter presses to three storage bins, and to load the cake from the bins into trucks. These operations

would occur within the new sludge dewatering and loadout facility building. The new building would be a two story, cast-in-place concrete structure that would contain space for the belt filter presses, truck loadout, and other miscellaneous support areas. The facility would have a building footprint of approximately 7,500 square feet and a building height of 50 feet. The roof would include removable skylights over the belt filter presses for the purpose of facilitating future removal/ replacement. These skylights would also provide light into the room, reducing the need for electric lights during the daytime. Various minor modifications to the yard piping system would be needed in order to accommodate the new facility. The location of the new sludge dewatering and loadout facility is approximately in the middle of the existing RWQCP.

The three existing belt filter press feed pumps will be replaced with new but larger pumps and used to feed the sludge from the existing sludge blend tank to the new belt filter presses. The facility would also include a robust system for odor control. Both the new feed pumps and the new odor control equipment would be installed outdoors on the existing feed pumps area adjacent to the existing sludge blend tank (located immediately North of the new sludge dewatering and loadout facility).

In addition to the sludge dewatering and loadout facility itself, a standby diesel engine generator will be installed to provide backup power. The generator is sized to handle the load for the facility as well as other nearby facilities. Fuel storage will be provided by means of a sub-base fuel tank.

Existing and Proposed Uses

The sludge dewatering and loadout facility would be located on currently undeveloped land approximately in the middle of the existing RWQCP. Therefore, there are no existing uses of the proposed site.

The proposed sludge dewatering and loadout facility would be part of the RWQCP solids processing system. The belt filter presses are large machines that use physical pressure to separate solids from the liquid waste stream (i.e., dewatering). All dewatering operations will occur within the new building, effectively isolating the continuous machinery operations from the environment. Dewatered solids produced by the belt filter presses – the “cake” – would be conveyed to the bins for offsite reuse. Trucks would enter the building through a roll-up door on the northwest side, and would receive the cake load from the overhead storage bins. Up to five trucks per day (counted as ten trips per day) are expected to fully haul the load generated by the dewatering operations. The BFP provides several options for beneficial reuse within the Bay Area and surrounding counties.

The project does not require specialized maintenance, and all facilities would undergo routine maintenance as part of overall RWQCP operations. Also, the facility will not be permanently occupied; approximately 3 staff will access the facility as-needed for routine operations and maintenance.

Architectural Design Concept

The primary goal of this project is to deliver a high quality, cost effective process structure that integrates seamlessly with existing plant operations and maintains flexibility for future growth. The new facility will be designed for optimum functionality while complementing the existing plant architecture and surrounding natural environment.

Relationship to Existing Conditions

The project is located on a vacant site within the existing RWQCP. The RWQCP is flanked by an industrial business park and capped landfill to the south, in the process of being converted into parkland, the Palo Alto Airport to the north, and the Baylands Nature Preserve to the east. The preserve is considered as one of the best bird watching areas on the west coast and a major migratory stopover on the Pacific Flyway. There are numerous hiking, running, and cycling trails around the plant.

The existing process structures within the plant share a similar industrial architectural style, utilizing a material palette of cast-in-place concrete, painted structural steel, and profiled Cor-Ten steel panels.

Concrete walls are articulated with vertical flutes, horizontal reveals, and exposed form ties. Structures are surrounded by simple landscaping, pavement, and drainage systems.

The vehicular approach to the proposed Sludge Dewatering and Loadout Facility is from the main plant entrance, bypassing the existing Operations Building to the south and the Administration Building to the north. The proposed facility will be situated between the Solids Incineration Building to the north and the Primary Sedimentation Tanks to the south.

Design Criteria

The proposed architectural design addresses the City's desire for a visually attractive facility which blends in to the existing campus and the surrounding natural environment. A modern reinterpretation of the existing material palette provides visual consistency and sets a precedent for future campus improvements. Existing Baylands view sheds will be maintained by respecting local height limitations.

Architectural Design Objectives

- Emphasize functional and operational requirements, particularly pedestrian and vehicular access
- Provide safe, healthy, and comfortable workspaces for operations and maintenance staff
- Blend into natural surroundings of Baylands Nature Preserve
- Complement existing plant architecture and landscaping
- Respect public views from outside the plant perimeter
- Use consistent and practical forms, materials, finishes, and colors
- Design for durability, longevity, and low maintenance
- Provide educational opportunities for visitors and tour groups
- Establish architectural vocabulary for future facility improvements

Design Concepts

Key elements of the architectural design include clearly defined entries and circulation elements and controlled views into process area from the building exterior. Various Cor-Ten steel cladding panels, storefront glazing, and articulated vertical concrete surfaces will be utilized to express these concepts.

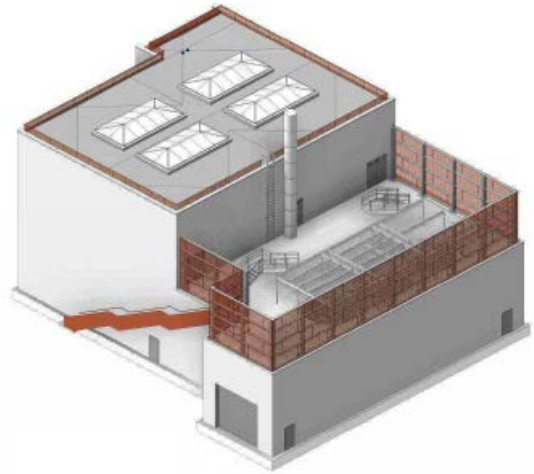


Figure (a) View from Northeast

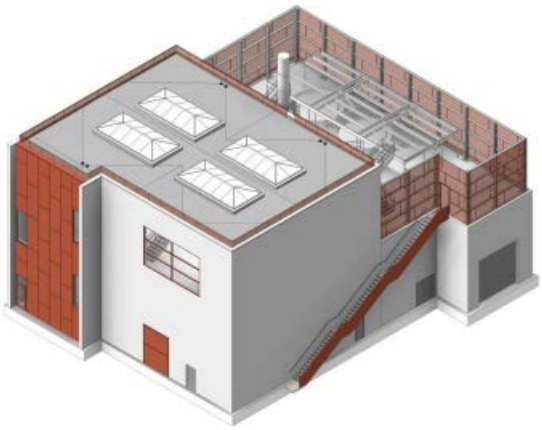


Figure (b) View from Southeast

Figure (c) View from Northwest

Figure (d) View from Southwest

Panel Lift Doors

Building entry points are clearly defined to promote safety, security, and wayfinding. Panel lift doors are proposed in lieu of coiling steel doors at several locations around the building exterior. They provide a low maintenance entry system which operates via a series of lift straps controlled by a retraction motor to fold the door in half. By acting as canopies when in the open position, they also allow for some protection from the elements. At the building's main staff entrance, the panel lift door will be held in the open position to serve as a formal entry canopy. In keeping with the primary material palette, the folding door panels will be clad in Cor-Ten steel. The truck loadout bay will have coiling doors at each end to meet the requirement for impact and corrosion resistance.

Views into Facility

In order to provide educational and interpretive opportunities for visitors while restricting access to operational spaces, several design features will allow views of activities and equipment from outside the building. These features will also allow natural daylighting into various spaces to improve operator comfort and safety. A perforated Cor-Ten screen wall will allow views into the rooftop cake storage bin area while obscuring visibility from more distant views outside the plant. To allow visibility of the belt filter press room from the adjacent sedimentation tanks, a large storefront window will be provided on the east wall. Narrow windows at each landing of the building's interior stairwell will allow views of people moving within the facility. Finally, removable skylights will be located above each belt filer press, allowing daylight into the space and access for the maintenance or replacement.

Materials and Color Palette

Cast-in-place Concrete

The structural concrete exterior will incorporate a uniform pattern of expressed plywood formwork with a complementary configuration of exposed form ties. The expressed joint pattern will continue through to adjacent cladding materials.

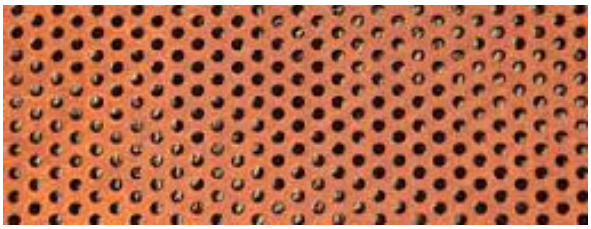
Cor-Ten Steel Panels

Also known as weathered or weathering steel, this material oxidizes over time to form an attractive protective coating over the steel. The use of Cor-Ten provides continuity of materials with existing buildings at the plant and the Baylands Preserve. Due to its 50+ year lifespan, the sustainable approach to the campus is continued.

Cor-Ten Steel is proposed in several locations:

- Wall Cladding
  A solid panel system will be post installed into the portions of the structural concrete walls, flush with the exterior face. Panel sizes and locations will correspond with the concrete joints as well as standard supplied panel dimensions. This will minimize the need for excess cutting and thus reduce waste.

- Perforated Screen Wall
  Perforated panels will be attached to a steel screen wall structure around the outdoor cake storage area, providing views into the space and allowing the space to remain unclassified.



- Exterior Stair Guardrail
  The steel stair running along the east façade will incorporate solid panels to serve as a balustrade.
- Roof Guardrail
  Perforated panels will be provided around the upper roof parapet to serve as a balustrade. It will be fixed to the inside face of the parapet to prevent runoff on the concrete facade.

Sustainable Design Elements

The architectural design of the facility is compliant with the California Green Building Standards Code (CALGreen Code).

Some key sustainable features of the proposed materials are summarized below.

Cor-Ten Steel

- The steel is allowed to rust and that rust forms a protective coating which provides increased resistance to atmospheric corrosion
- Negates need for painting
- Locally sourced and manufactured (USA)
- High proportion of recycled content
- 100% recyclable

Concrete

- resource efficient (predominant raw material is limestone, the most abundant mineral on earth)
- durable
- energy efficient (absorbs and retains heat)
- minimal waste during construction
- recyclable (can be crushed and made into aggregate)

In addition to sustainable materials selection, the design of the facility includes operational elements that will further enhance the RWQCP's environmental impact. For example, the electrical design includes the use of intelligent motor control centers (MCCs) which are energy efficient motors; and the use of recycled water for all process water needs. The decommissioning of the multiple hearth furnaces (incinerator building) after the new facility is operational for solids management will significantly reduce the plant's air emissions footprint.

Project Construction

The sludge dewatering and loadout facility would be constructed over a period of approximately 24 months, beginning in April 2016 and continuing through Spring 2018. Project construction would consist of site preparation and minor demolition activities; building construction; and equipment installation, startup, and testing. Most of the construction activities would occur during building construction, which would include modifications to nearby yard piping. Construction access would be from Embarcadero Way, and is expected to average 10 vehicles per day (counted as 20 trips per day) over the construction period.

General Zoning Compliance Analysis for PF (D)

	REQUIRED/ALLOWED	PROPOSED	COMPLIANCE
ADDRESS	2501 Embarcadero Way, Palo Alto, CA 94303	--	--
ACCESSOR'S PARCEL NUMBER	008-03-029	--	--
TOTAL SITE AREA	24.87 acres	same	yes
ZONING DISTRICT	PF (D)	same	yes
HISTORIC CATEGORY	NONE	same	yes
FLOOD ZONE	AE10.5	same	yes
FRONT (EMBARCADERO WAY) SETBACK	20 ft.	same	yes
REAR YARD SETBACK	20 ft.	same	yes
SIDE YARD SETBACK	20 ft.	same	yes
MAXIMUM HEIGHT	50 ft.	50 ft. to parapet, with 10 ft. ventilation system on top	yes
SITE COVERAGE	30% (existing 29.15%)	29.84%	
MAXIMUM F.A.R.	1:1		

TREE DISCLOSURE STATEMENT

CITY OF PALO ALTO
Planning Division, 250 Hamilton Avenue
Palo Alto, CA 94301
(650) 329-2441
http://www.cityofpaloalto.org

Palo Alto Municipal Code, Chapter 8.10.040, requires disclosure and protection of certain trees located on private and public property, and that they be shown on submitted and approved site plans. A completed *tree disclosure statement* must accompany all permit applications that include exterior work, all demolition or grading permit applications, or other development activity.

PROPERTY ADDRESS: Regional Water Quality Control Plant, 2501 Embarcadero Way, Palo Alto, CA 94303

Are there Regulated[1] trees on or adjacent to the property? **YES** **NO** (If no, proceed to Section 4)

[Sections 1- 4 MUST be completed by the applicant. Please circle and/or check where applicable.]

1. Where are the trees? Check those that apply. **(Plans must be submitted showing all trees over 4" diameter)**

- ☐ On the property
- ☐ On adjacent property overhanging the project site
- ☐ In the City planter strip or right-of-way easement within 30' of property line (Street Trees)*

*Street trees[1] **require special protection by a fenced enclosure**, per the attached instructions. Prior to receiving any permit, you must provide an authorized Street Tree Protection Verification form. Contact Public Works Operations at (650) 496-5953 for inspection of type I, II or III fencing (see attached Detail #605) required for all street trees.

2. Are there any Protected[1] or Designated[1] Trees? **YES** (Check where applicable) **NO**

- ☐ Protected Tree (s)
- ☐ Designated Tree (s)
- ☐ On or overhanging the property

3. Is there activity or grading within the dripline? (radius 10 times the trunk diameter) of these trees? **YES** **NO**

*If Yes, a **Tree Preservation Report** must be prepared by an ISA certified arborist and submitted for staff review (see TTM[2], Section 6.25). Attach this report to Sheet T-1,:Tree Protection, its Part of the Plan!", per Site Plan Requirements.*

4. Are the Site Plan Requirements** completed? **YES** **NO**

**Plans. Protection of Regulated trees during development require the following: (1) Plans must show the measured trunk diameter and canopy dripline; (2) Plans must denote, as a bold dashed line, a fenced enclosure area out to the dripline, per Sheet T-1 and Detail #605 - http://www.cityofpaloalto.org/trees/forms.htm (See also TTM[2], Section 2.15 for area to be fenced)

I, the undersigned, agree to the conditions of this disclosure. I understand that knowingly or negligently providing false or misleading information in response to this disclosure requirement constitutes a violation of the Palo Alto Municipal Code Section 8.10.040, which can lead to criminal and/or civil legal action.

Signature: Hamid Ghaemmaghami (DocuSigned by: -7324DCD015AD424...) Print: Hamid Ghaemmaghami Date: 9/2/2015
(Prop. Owner or Agent)

FOR STAFF USE:

Protective Fencing
Sections 5-6 must be **completed by staff** for the issuance of any development permit (demolition, grading or building permit).

5. Protected Trees. The specified tree fencing is in place. A written statement is attached verifying that protective fencing is correctly in place around protected and/or designated trees. **YES** **NO**
(N/A if there are no protected trees, check here ☐)

6. Street Trees. A signed Public Works Street Tree Protection Verification form is attached. **YES** **NO**
(N/A if there are no street trees, check here ☐).

[1] Regulated Trees – a) Street trees – trees on public property; b) Protected trees – Coast Live Oaks or Valley Oaks which are 11.5" in diameter or larger, Coast Redwoods which are 18" in diameter or larger, when measured 54" above natural grade; and Heritage trees are trees designated by City Council; and c) Designated Trees – commercial or non-residential property trees, which are part of an approved landscape plan.

[2] Palo Alto Tree Technical Manual (TTM) contains instructions for all requirements on this form, available at www.cityofpaloalto.org/trees/technical-manual.html

AERIAL PHOTO – EXISTING CONDITIONS AND LOCATION OF NEW SLUDGE DEWATERING & LOADOUT FACILITY
PALO ALTO REGIONAL WATER QUALITY CONTROL PLANT

Proposed Site - existing conditions – **NORTHEAST VIEW**

Proposed Site - existing conditions – **NORTHWEST VIEW**

Proposed Site - existing conditions – **SOUTHWEST VIEW** (from Primary Sedimentation Tanks)

Proposed Site - existing conditions – **SOUTHWEST VIEW** (from Admin Building)

STATEMENT OF DESIGN INTENT

CH2MHILL®

SIEGFRIED

Landscape Plan

PREPARED FOR:	Architectural Review Board/City of Palo Alto
PREPARED BY:	Robert Norbutas, Jr./Siegfried
REVIEWED BY:	Paul Schneider/Siegfried
DATE:	September 2015
PROJECT TITLE:	City of Palo Alto Component 1 Sludge Dewatering and Loadout Facility for the Regional Water Quality Control Plant

Introduction

This document presents the 30-percent schematic design landscaping design criteria and final design considerations for the Sludge Dewatering and Loadout Facility at the Palo Alto Regional Water Quality Control Plant (RWQCP). The basis of design presented with this document is based on information from the *Preliminary Design Report for the Dewatering/Truck Loadout Facility for the Regional Water Quality Control Plant* (CH2M HILL, August 2014).

Codes and Standards

- AB 1881 – State Model Water Ordinance is the result of AB 1881 and is administered by each local agency. In addition, Building and Plumbing code will be followed for backflow and public Health requirements.
- City of Palo Alto – Conventional and local roadway landscape design standards as well as visibility and view angle standards will be followed to ensure proper turning visibility and minimum safety standards.
- Palo Alto Baylands Master Plan-2008
- California Green Building Code-2013
- Bay-Friendly Landscape Guidelines

Design Criteria

The landscape design addresses the City of Palo Alto's concerns for a visually attractive facility as seen by the public who enter the site, tour groups who visit the facility, and staff members. The use of landscape features and/or plant material shall blend the new building into the existing landscaped site. Plant material will be predominantly drought tolerant, local and non-local California native species and able to tolerate the application of the facilities recycled water. Materials and details will be durable and designed for ease of maintenance and a highly sustainable design.

Existing Conditions

The new building and truck access route will be placed on land that is currently open with no permanent structures. There are a few moveable storage bins that will only be relocated if they are in conflict with the new facility. The truck loading route and drive has a proposed alignment that will affect the Sharps Pharmaceutical drop-off bin, parking, the landscaped solar panel field, and the recycled water redwood grove study area. These areas will be addressed in the site design construction and landscape solution.

Currently, the building site area and parking lot serve the public visitors as well as daily staff pedestrian and vehicular traffic. Large and small vehicles travel through the existing driveway to access all areas of the plant and the Embarcadero Road exit gate. Public walking tours are guided through the area and currently stop at the recycled water tank arbor plaza area.

General Landscape Design Principles

- The design principle is to provide effective foundation planting and appropriate screening within a few years as well as into the future, without obstructing the vehicle traffic patterns and facilities operations.
- Provide a range of growth habits and plant types. Design with a plant palette that contains plants of varying installed plant can sizes to provide for a natural setting with different maturity levels of plants. Provide plants with varying speeds of growth, especially in areas that need an immediate screening solution.
- Use of drought tolerant native and non-native California plant material.
- No trees will be located over underground utilities and placement will provide for unobstructed vehicular traffic.
- Plant selection and placement will lower maintenance by installing plants with proper spacing to allow for natural maturity, growth and spread, as well as minimize the need for thinning and pruning of the landscape in the future. Plants will be chosen to allow room for natural growth habits and minimize regular maintenance demand. Plants will be chosen that are low litter and a majority to be evergreen.
- Plants will be selected that are salt tolerant and accept the use of recycled water for irrigation.

Criteria for Landscape Design

- Water efficient, drought tolerant plant selection
- Existing tree preservation
- Aesthetics
- Cost-effectiveness
- Safety and security
- Durability and ability to be maintained
- Sustainability

Overall Planting Concept

The overall planting concept for the project is to install plants in each area that will perform to the area's specific needs. These needs and functions would include categories such as the following:

- Narrow screening
- Building foundation planting
- Entry accent
- Shading

The design philosophy will be "right plant, right place" with plants selected that thrive in the environment, tolerate the recycled water application, and are selected and placed to allow for natural growth habits and minimize maintenance and pruning.

Preliminary Plant Palette

Listed below are plants that will be considered as part of the landscape design for the project and either exist or have been planted onsite recently. During the recently completed RWQCP Landscape Improvements Project, stakeholders meetings and research developed a planting palette. This palette was required to be suitable for the local environmental conditions, appropriate to the Baylands Nature Preserve, and salt tolerant with the application of recycled water provided from the RWQCP.

Trees

Arbutus unedo – Strawberry Tree
Calocedrus decurrens – Incense Cedar
Geijera parviflora – Australian Willow
Melaluca linarifolia – Flaxleaf Paperbark
Myrica californica – Pacific Wax Myrtle

Pistacia chinensis – Chinese Pistache
Quercus lobate – Valley Oak

Shrubs

Arctostaphylos d. 'Howard McMinn' – Howard McMinn Manzanita
Callistemon citrinus 'Jeffersonii' – Dwarf Bottlebrush
Ceanothus x 'Concha' – California Lilac
Epilobium canum 'UC Hybrid' – Hummingbird Trumpet
Grindelia stricta playtphylla – Grindelia
Heteromeles arbutifolia – Toyon
Myrtus communis 'Compacta' – Dwarf Myrtle
Penstemon heterophyllus 'Margarita BOP' – Beard Tongue
Phormium tenax 'Dusky Chief' – New Zealand Flax
Phormium tenax 'Jack Spratt' – New Zealand Flax
Rhapiolepis indica 'Clara' – White India Hawthorne
Rosa californica – California Wild Rose
Salvia clevelandii – Cleveland Sage
Westringia fruticosa 'Morning Light' – Coast Rosemary
Xylosma congestum – Shiny Xylosma

Groundcovers/Vines

Ceanothus gloriosus 'Anchor Bay' – Anchor Bay Lilac
Cistus pulverulentus 'Sunset' - Rockrose
Muhlenbergia capilaris 'Lenca' – Regal Mist Pink Muhly
Salvia x 'Bees Bliss' - Sage
Tecomaria capensis – Cape Honeysuckle
Recycled Bark Mulch

General Irrigation Design Principles

The new irrigation system will be connected to existing recycled water RWQCP 2-wire system and controllers. The site currently has two separate irrigation areas: exterior and interior. These controllers will not be replaced and any additional valves will be connected.

Existing irrigation mainlines, laterals, and heads that are in conflict with the proposed improvements, will be relocated accordingly.

The newly planted drought tolerant plants will need limited irrigation for the first few years of establishment. The new irrigation system will be designed to establish a deep, strong root system that will eventually sustain the plants without supplemental water, under normal conditions.

The proposed irrigation will meet water efficiency standards. Overhead spray systems will be used only were necessary to minimize maintenance and weed control of non-planted areas.

Landscape Design Areas

- Sharps Drop-off
- Truck Bay Loading Drive
- Building Perimeter
- Public Tour Gathering Area
- Embarcadero Road Exit Driveway

Landscape development zones for the project are shown in Figure 1. The color-coded legend for the developments zones shown in Figure 1 is provided in Figure 2. North elevation landscape concepts are shown in Figures 3 and 4.

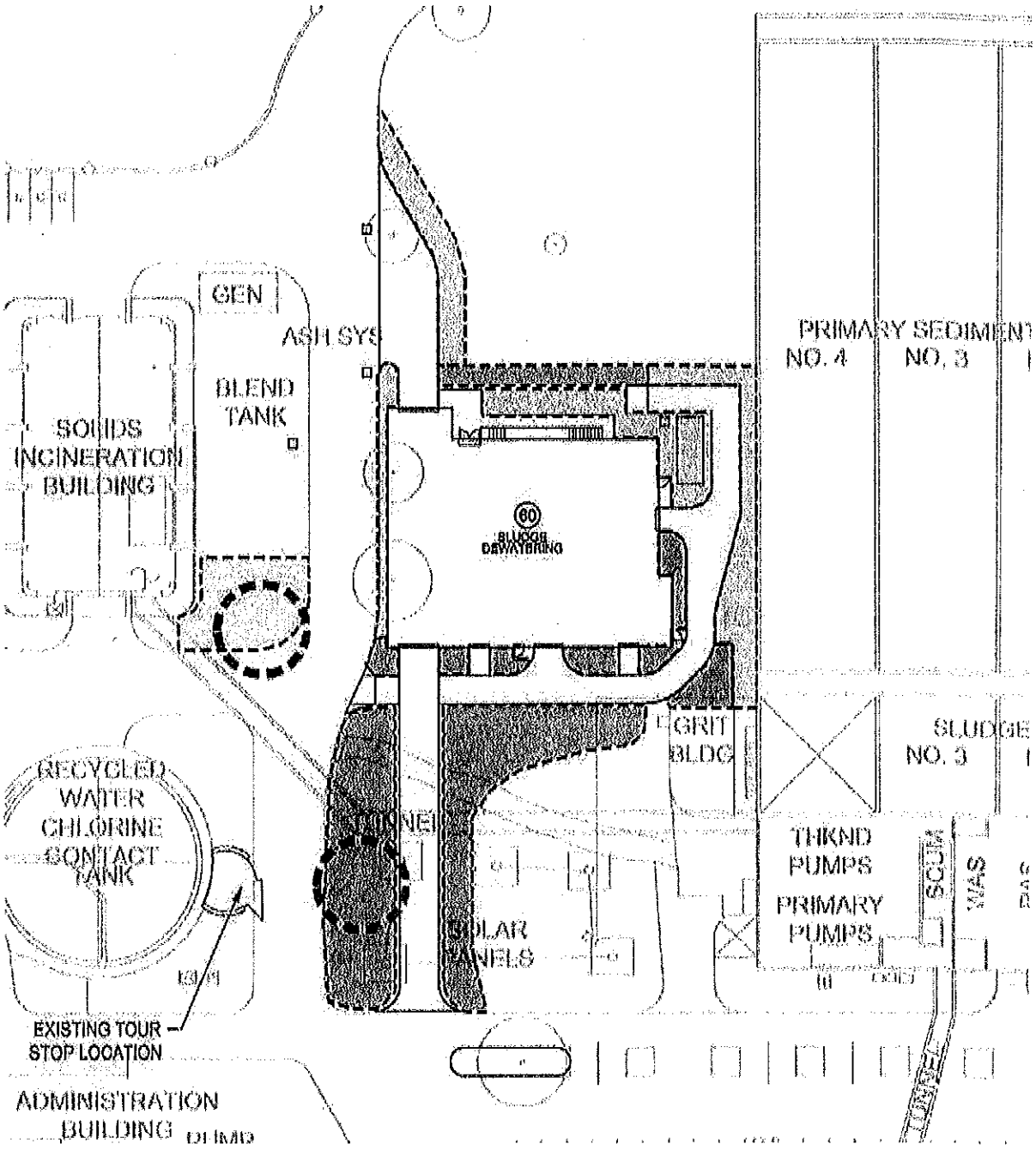


FIGURE 1
Landscape Development Zones

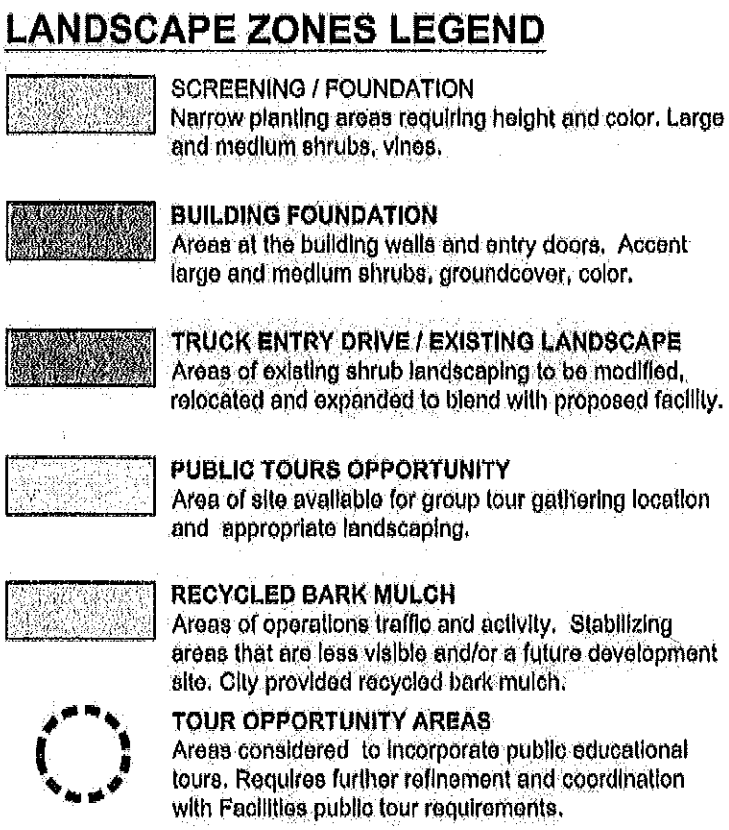


FIGURE 2
Landscape Zones Legend

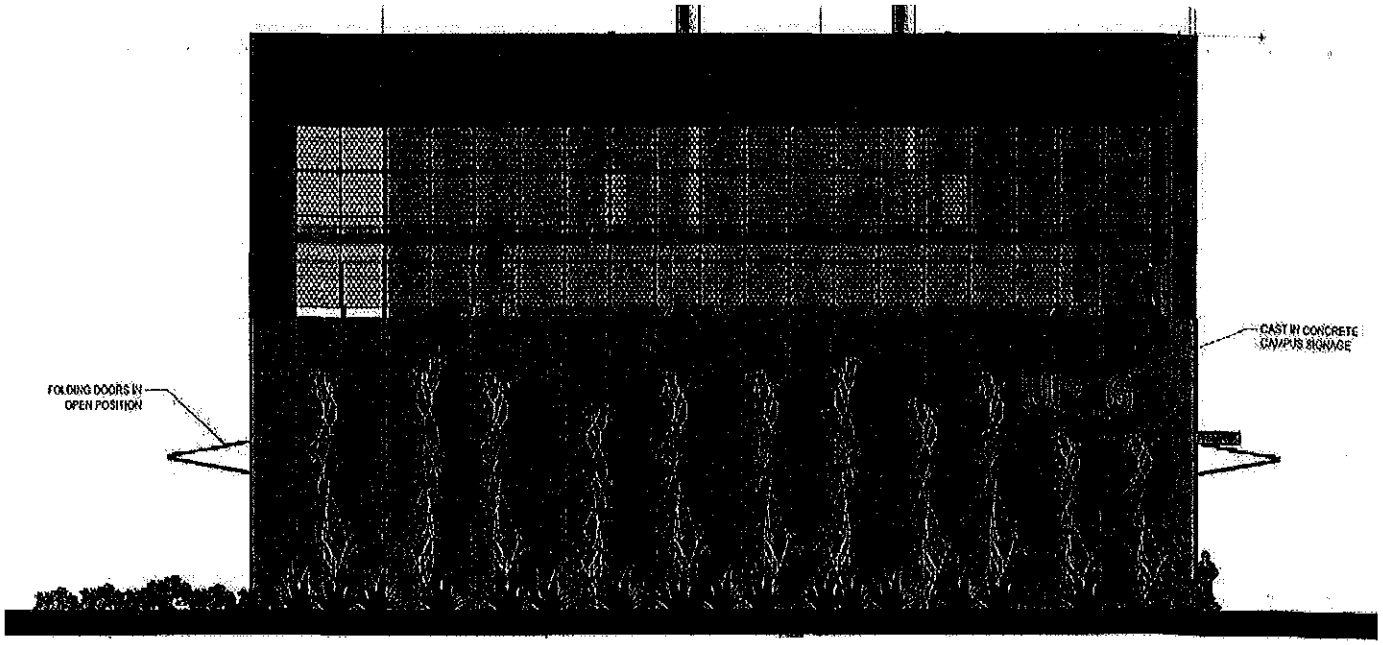


FIGURE 3
North Elevation Landscape-Cable/Vine System Concept

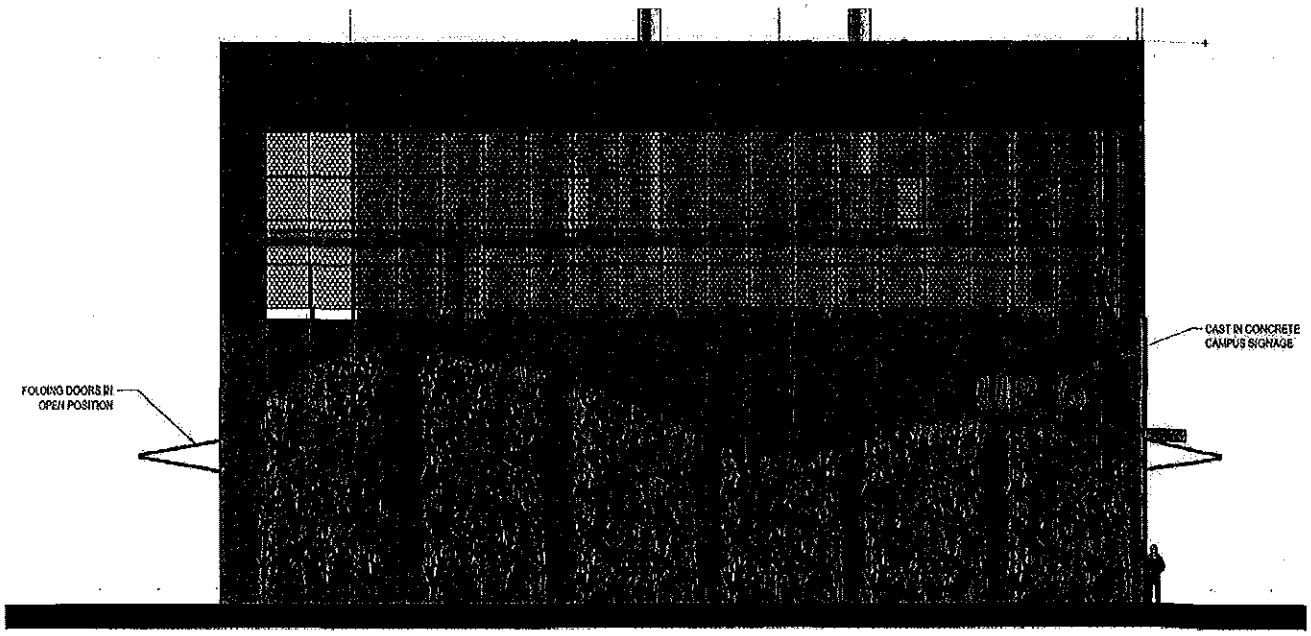
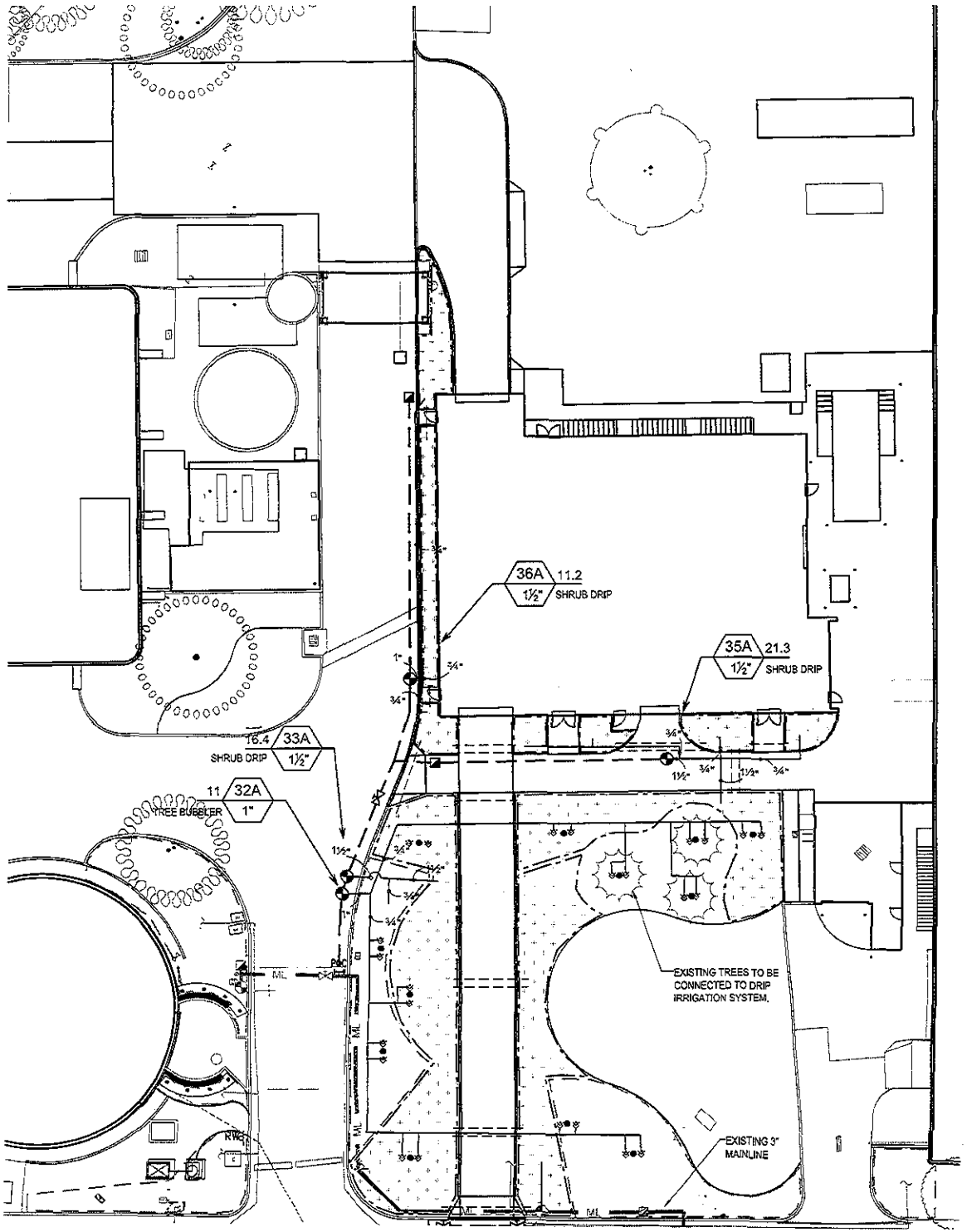


FIGURE 4
North Elevation Landscape-Free-standing Mesh Fence/Vine System Concept



IRRIGATION LEGEND

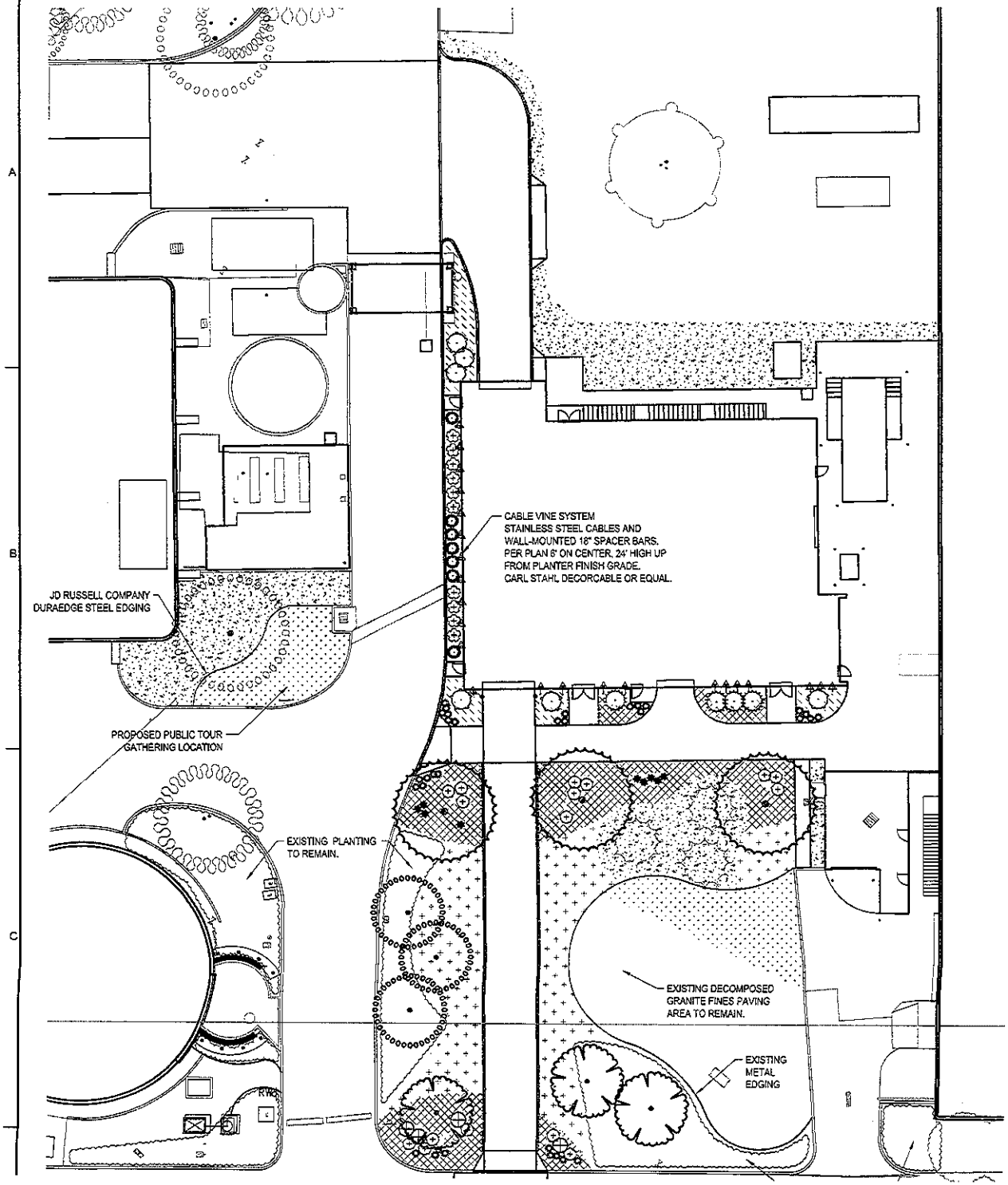
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
1401 1402	Rain Bird RWS-M-B-C-P-SOCK Mini Root Watering System with 4.0" diameter x 18.0" long with locking grate, semi-rigid mesh tube and Rain Bird 1401 0.25 gpm or 1402 0.5 gp bubbler as indicated. With Check Valve, Purple Grate, and Sand Sock f sandy soil.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Area to Receive Drip Emitters Rain Bird PCT Pressure Compensating Threaded Low-Flow Bubblers. Offered in 5 GP GPH, and 10 GPH models, with 1/2" FPT threaded inlet. Light Brown = GPH, Violet = 7 GPH, and Green = 10 GPH. Emitter Notes: 1 gal plant to receive 1 of 07 gph emitter. 5 gal plant to receive 1 of 10 gph emitter. 15 gal plant to receive 2 of 10 gph emitters.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Rain Bird PEB-PRS-D-NP-HAN 1", 1-1/2", 2" Plastic Industrial Valves. Low Flow Operating Capability, Globe Configuration. With Pressure Regulator Module, and Purple Flow Handle for Non-Potable Water Use.
	Rain Bird 44-NP 1" Brass Quick-Coupling Valve, with Corrosion-Resistant Stainless Steel Spring, Locking Non-Potable Purple Rubber Cover, and 2-Piece Body.
	Nibco T-113 or P-619-RW For 2.5" or smaller, use T-113. For 3" or larger, P-619-RW with joint restraints. Size same as mainline pipe diameter at valve location.
POC	Point of Connection 3" Connection to existing recycled water irrigation mainline with source connection on W-4 onsite connection located inside planter at RWQCP entrance gate.
	Irrigation Lateral Line: PVC Schedule 40 and Class 315 PVC Schedule 40 to 1-1/2", PVC Class 315 SDR 13.5 for pipes 2" and larger.
	Irrigation Mainline: PVC Schedule 40 and Class 315 PVC Schedule 40 to 1-1/2", PVC Class 315 SDR 13.5 for pipes 2" and larger.
	Pipe Sleeve: PVC Schedule 40 Typical pipe sleeve for irrigation pipe. Min. size 2x diameter of pipe bein sleeved. Extend sleeves 18 inches beyond edges of paving or construct
# / # / #"	Valve Callout Valve Number Valve Flow Valve Size
	Existing Irrigation to be Modified Contractor responsible for modifications to existing irrigation adjacent to project to remove irrigation system and valves within project area and cap mainline sy Existing irrigation to be modified to maintain irrigation to existing plant material. system shall be isolated to new controller at building and not connected to exis Contractor to coordinate existing mainline system, shut-off and controller with
	PROPOSED TREE (TRUNK LOCATION FOR IRRIGATION REFERENCE PER PLANTING PLAN)

GENERAL IRRIGATION NOTES

1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH CITY OF PALO ALTO STANDARDS.
2. THE IRRIGATION SYSTEM IS DESIGNED TO OPERATE AT 30 PSI (ROTATORS) AND 30 PSI (AT DRIP EMITTERS), AND ' MAXIMUM FLOW RATE OF 50 GPM. THE SUBCONTRACTOR IS TO PERFORM A STATIC AND DYNAMIC PRESSURE TE AT LEAST 60 PSI STATIC, WITH A MAXIMUM OF 200 PSI STATIC. REPORT FINDINGS TO THE LANDSCAPE ARCHITECT CONTRACTOR FAILS TO DO SO, THE SUBCONTRACTOR WILL TAKE FULL RESPONSIBILITY FOR ANY NECESSARY R
3. THE INTENT OF THIS IRRIGATION SYSTEM IS TO PROVIDE THE MINIMUM AMOUNT OF WATER REQUIRED TO SUSTA PLANT HEALTH. LANDSCAPE SUBCONTRACTOR SHALL GUARANTEE 100% COVERAGE OF SYSTEM. QUANTITIES (I ARE FOR REFERENCE ONLY.
4. IRRIGATION CONTROLLER TO BE LOCATED PER PLANS, SCREENED FROM CASUAL VIEW.
5. SPLICING OF 24 VOLT WIRES IS NOT PERMITTED EXCEPT IN VALVE BOXES. LEAVE A 36" LONG, 6" DIAMETER COIL WIRE AT EACH SPLICE AND A 36" LONG EXPANSION LOOP EVERY 100 FEET ALONG WIRE RUN. TAPE WIRE TOGET TEN FEET. TAPING WIRES IS NOT REQUIRED INSIDE SLEEVES. RUN WIRE FROM EACH REMOTE CONTROL VALVE T CONTROLLER. ALL CONTROLLER WIRES TO BE LABELED AT VALVES AND CONTROLLER.



PLANT SCHEDULE

TREES	CODE	BOTANICAL NAME / COMMON NAME
	ARB STR	Arbutus unedo / Strawberry Tree
	CAL DEC	Calocedrus decurrens / Incense Cedar
	GEI PAR	Geijera parviflora / Australian Willow

SHRUBS	CODE	BOTANICAL NAME / COMMON NAME
	CEA CON	Ceanothus x 'Concha' / California Lilac
	EPI CA8	Epilobium canum 'U.C. Hybrid' / Hummingbird Trumpet
	PHO DAZ	Phormium tenax 'Dazzler' / New Zealand Flax
	PHO SPR	Phormium tenax 'Jack Spratt' / New Zealand Flax
	RHA CLA	Rhaphiolepis indica 'Clara' / White Indian Hawthorn
	SAL CLE	Salvia clevelandii / Cleveland Sage
	WES MOR	Westringia fruticosa 'Morning Light' / Morning Light Coast Rosemary
	XYL CON	Xylosma congestum / Shiny Xylosma

VINE/ESPALIER	CODE	BOTANICAL NAME / COMMON NAME
	JAS POL	Jasminum polyanthum / Pink Jasmine
	TEC CAP	Tecomaria capensis / Cape Honeysuckle

GROUND COVERS	CODE	BOTANICAL NAME / COMMON NAME
	CEA ANC	Ceanothus gloriosus 'Anchor Bay' / Anchor Bay Lilac
	CIS PU2	Cistus pulverulentus 'Sunset' / Rockrose
	MUH LE2	Muhlenbergia capillaris 'Lenca' / Regal Mist Pink Muhly

BARK MULCH-NO PLANTING
Natural bark mulch. 3" thick layer minimum. Landscape areas within the project site to receive City provided recycled natural bark mulch with no new planting. Stabilizing edges of pavement, areas of traffic and activity. In addition to these areas, all new shrub planting areas to be installed with bark mulch.

DECOMPOSED GRANITE FINES PAVEMENT
Decomposed granite fines with organic stabilizer. Paving area and public educational tour area to match existing material with 4" thick layer, laid in 2" lifts and compacted to 85% relative density over 6" layer of compacted subgrade. Aluminum edging to be installed when adjacent to planting beds.

ATTACHMENT D

City of Palo Alto

Department of Planning and Community Environment
250 Hamilton Avenue, 5th Floor
Palo Alto, CA 94301
(650) 329-2441 FAX (650) 329-2154
www.cityofpaloalto.org

Notice of Intent to Adopt a Mitigated Negative Declaration

A notice, pursuant to the California Environmental Quality Act of 1970, as amended (Public Resources Code 21,000, et sec.) that the following project will not have a significant effect on the environment.

File Number	TAZ	APN(s)	Date
15PLN-00371		008-03-029052	12/15/15

Project Name	Project Type
Palo Alto Regional Water Quality Control Plant Sludge Dewatering and Loadout Facility Project	City Facility

Owner	Applicant
City of Palo Alto	Padmakar Chaobal, PE Senior Engineer

Project Location

2501 Embarcadero Way, Palo Alto, the existing Regional Water Quality Control Plant (RWQCP) located in Palo Alto at the southern end of the San Francisco Bay in Santa Clara County, California.

Project Description

The proposed project would include the construction and operation of a sludge dewatering and truck loadout facility at the Palo Alto Regional Water Quality Control Plant (RWQCP). The proposed project includes the construction of a new building to accommodate the installation of four belt filter presses. The project also includes mechanisms to convey the resulting cake from the belt filter presses to three storage bins, and to load the cake from the bins into trucks. These activities would occur within the new dewatering and truck loadout facility building. The new building would be a two story, cast-in-place concrete structure that would contain space for the belt filter presses, truck loadout, and other miscellaneous support areas. The facility would have a building footprint of approximately 7,500 square feet and a building height of 50 feet. The facility would include a robust system for odor control. The roof would include removable skylights over the belt filter presses for the purpose of facilitating future removal/replacement. These skylights would also provide light into the room, reducing the need for electric lights during the daytime. Various minor modifications to the yard piping system would be needed in order to accommodate the new facility. In addition to the dewatering and truck loadout facility itself, a standby diesel engine generator will be installed to provide backup. The generator is sized to handle the load for the facility as well as other nearby facilities. Fuel storage will be provided by means of a sub-base fuel tank. The IS/MND document identifies standard project conditions and mitigation measures that would be implemented to reduce project impacts to a less than significant level.

Purpose of Notice

Notice is hereby given that a Draft Mitigated Negative Declaration has been prepared by the Palo Alto Department of Planning and Community Environment for the project listed above. This document will be available for review and comment during a minimum 30-day inspection period.

Public Review Period:	Begins: December 15, 2015	Ends: January 13, 2016

Public Comments regarding the correctness, completeness, or adequacy of this draft negative declaration are invited and must be received in writing on or before January 13, 2016. Such comments should be based on specific environmental concerns. Written comments should be addressed to Amy French, Chief Planning Official, 250 Hamilton Avenue 5th floor, Palo Alto, CA 94301. A file containing additional information on this project may be reviewed at the Planning Office under the file number appearing at the top of this form. For additional information regarding this project and the Mitigated Negative Declaration, please contact Amy French at (650) 329-2336 or amy.french@cityofpaloalto.org. This project is tentatively scheduled for a public hearing before the Planning and Transportation Commission on Wednesday, January 27, 2016 at 6 p.m. in the Palo Alto City Council Chambers on the first floor of the Civic Center, located at 250

Hamilton Avenue, Palo Alto, California.

The Mitigated Negative Declaration and Initial Study may be viewed at the following locations:

(1) City Hall, 250 Hamilton Avenue 5th floor, Palo Alto, CA 94301

(2) The Development Center, 285 Hamilton Avenue, Palo Alto, CA 94301

(3) The City's Website for Development Projects for this project at 2501 Embarcadero Way at http://www.cityofpaloalto.org/news/displaynews.asp?NewsID=3412

Responsible Agencies sent a copy of this document:

(1) Santa Clara Valley Water District

(2) Regional Water Quality Control Board

(3) California State Clearinghouse

(4) Bay Area Air Quality Management District

Mitigation Measures included in the project to reduce potentially significant impacts to a less than significant level:

Impact BIO (a): The proposed project may have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special-status species.

Avoidance Measures for Special-Status Wildlife Species. The proposed project includes the following avoidance and minimization measures to reduce impacts on species covered by the MBTA during construction to a less-than-significant level:

- Pre-construction nesting surveys will be conducted before undertaking work during the nesting season (February through August). Any nest found within 50 feet for songbirds and 300 feet for raptors will be avoided, and a designated construction-free buffer zone will be established until the nests are no longer active.
- Biological monitoring of work activities for active bird nests found during the nesting season will be conducted by a qualified biologist.
- A qualified biologist will conduct onsite informational meetings with all construction personnel before construction begins. The purpose of these training sessions will be to familiarize construction personnel with the procedures regarding nesting birds they are to follow if they are encountered.

A reporting or monitoring program must be adopted for measures to mitigate significant impacts at the time the Mitigated Negative Declaration is approved, in accord with the requirements of section 21081.6 of the Public Resources Code.

Prepared by:

_____ _____

Amy French, Chief Planning Official **Date**

ATTACHMENT E

NOTICE OF AVAILABILITY

OF A DRAFT INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

Project Title Palo Alto Regional Water Quality Control Plant Sludge Dewatering and Loadout Facility Project

City/County: City of Palo Alto, Santa Clara County, California

NOTICE IS HEREBY GIVEN that the Draft Initial Study and Mitigated Negative Declaration (IS/MND) for the Palo Alto Regional Water Quality Control Plant Sludge Dewatering and Loadout Facility Project in the City of Palo Alto has been prepared.

Project Location: The proposed project is located at 2501 Embarcadero Way in Palo Alto, on Assessor's Parcel Number (APN) 008-03-029, located within the existing Regional Water Quality Control Plant (RWQCP), which is located in Palo Alto at the southern end of the San Francisco Bay in Santa Clara County, California. Access to the site is via U.S. Highway 101, and Embarcadero Rd, approximate latitude/longitude 37°27'8.39"N/ 122° 6'40.47"W. The project site is approximately 0.48 acres in size.

Project Description: The proposed project would include the construction and operation of a sludge dewatering and truck loadout facility at the Palo Alto Regional Water Quality Control Plant (RWQCP). The City has prepared a Draft IS/MND as lead agency to comply with the California Environmental Quality Act (CEQA). The document also identifies standard project conditions and mitigation measures that would be implemented to reduce project impacts to a less than significant level.

The proposed project includes the construction of a new building to accommodate the installation of four belt filter presses. The project also includes mechanisms to convey the resulting cake from the belt filter presses to three storage bins, and to load the cake from the bins into trucks. These activities would occur within the new dewatering and truck loadout facility building. The new building would be a two story, cast-in-place concrete structure that would contain space for the belt filter presses, truck loadout, and other miscellaneous support areas. The facility would have a building footprint of approximately 7,500 square feet and a building height of 50 feet. The facility would include a robust system for odor control. The roof would include removable skylights over the belt filter presses for the purpose of facilitating future removal/ replacement. These skylights would also provide light into the room, reducing the need for electric lights during the daytime. Various minor modifications to the yard piping system would be needed in order to accommodate the new facility. In addition to the dewatering and truck loadout facility itself, a standby diesel engine generator will be installed to provide backup. The generator is sized to handle the load for the facility as well as other nearby facilities. Fuel storage will be provided by means of a sub-base fuel tank.

Availability of the Initial Study/Draft Mitigated Negative Declaration: Copies of the Draft IS/MND will be available for review beginning on December 15, 2015 at the following locations:

- City of Palo Alto, Development Center, 285 Hamilton Avenue, 1st Floor, Palo Alto, during business hours, Monday-Friday, 9:00 a.m. to 4:00 p.m., excluding holidays, please call (650) 329-2496.
- City of Palo Alto, Planning and Community Environment Department, 250 Hamilton Avenue, Palo Alto, during business hours, Monday-Friday, 7:30 a.m. to 5:30 p.m., excluding holidays, please call (650) 329-2442.
- City's website http://www.cityofpaloalto.org/planningprojects.

The Draft IS/MND will be presented to the City Council to certify as a complete and adequate analysis of the environmental effects of the proposed project under the California Environmental Quality Act (CEQA). A Public Hearing will be held on January 27, 2016, or as near thereafter as possible, in the Palo Alto City Hall Council Chambers, 250 Hamilton Avenue, Palo Alto.

If any person challenges this item in court, that person may be limited to raising only those issues the person or someone else raised at the public hearings described in this notice, or in written correspondence delivered at, or prior to, the public hearings. In compliance with the Americans with Disabilities Act, those requiring accommodation for these meetings should notify the City of Palo Alto 24 hours prior to the meetings at (650) 329-2496.

For further information, please contact: Amy French, Chief Planning Official, City of Palo Alto Planning Division, 250 Hamilton Avenue, 5th Floor, Palo Alto, California 94301, (650) 329-2336, Amy.French@CityofPaloAlto.org.

ARB Submittal for Major Project

Component 1 Sludge Dewatering and Loadout Facility for the Regional Water Quality Control Plant

Plans for Site and Design Review

Prepared for
City of Palo Alto

December 2015

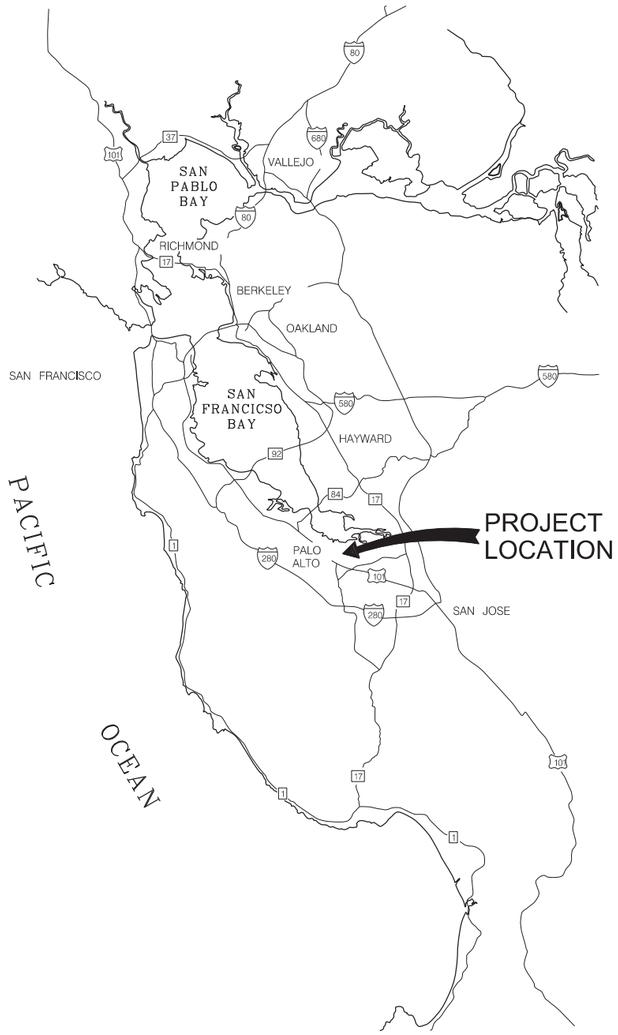
CH2MHILL®

CITY OF PALO ALTO, CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT

SLUDGE DEWATERING AND LOADOUT FACILITY

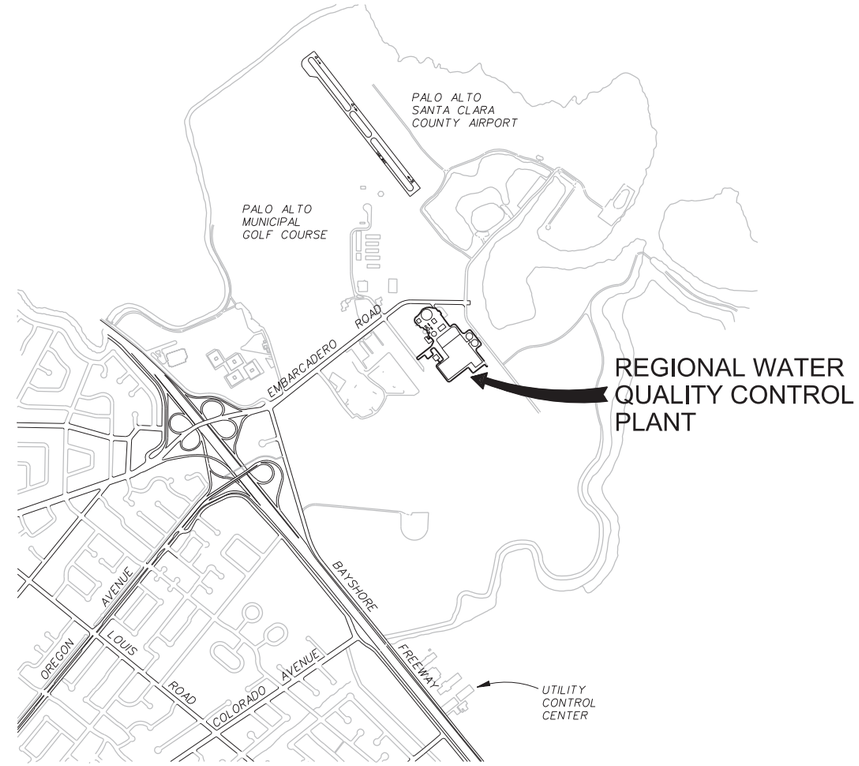
CONSTRUCTION DOCUMENT DRAWINGS



N

VICINITY MAP
NTS

PROJECT DATA:
Lot area (RWQCP): 24.87 acres
Lot coverage (by the new Sludge Dewatering and Loadout Facility): 6.664 SF
Floor area (two-story facility): 13,675 SF
New paving: 9,000 SF
New landscaping: 11,000 SF



PLANT TRUE

LOCATION MAP
NTS

PRELIMINARY
NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
DAVID W. GREEN
No. 39574
CIVIL
STATE OF CALIFORNIA

NO.	DATE	REVISION	DR	CHK	APVD	BY	APVD
DSGN	BD ROUSH		BD ROUSH	TL BAUER		DW GREEN	

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT
SLUDGE DEWATERING AND LOADOUT FACILITY

CH2MHILL®

GENERAL
TITLE, VICINITY AND LOCATION MAPS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	658394
DWG	01-G-0001
SHEET	1

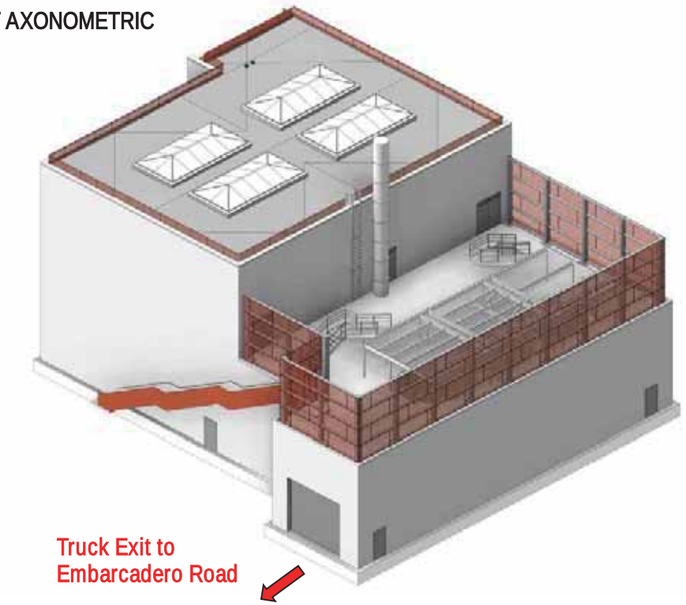
FILENAME: 01-G-0001_658394.dgn PLOT DATE: 2015\11\09 PLOT TIME: 11:47:01 AM

Source: Aerial from Google Earth Pro © 2015. Additional information added by CH2M HILL.

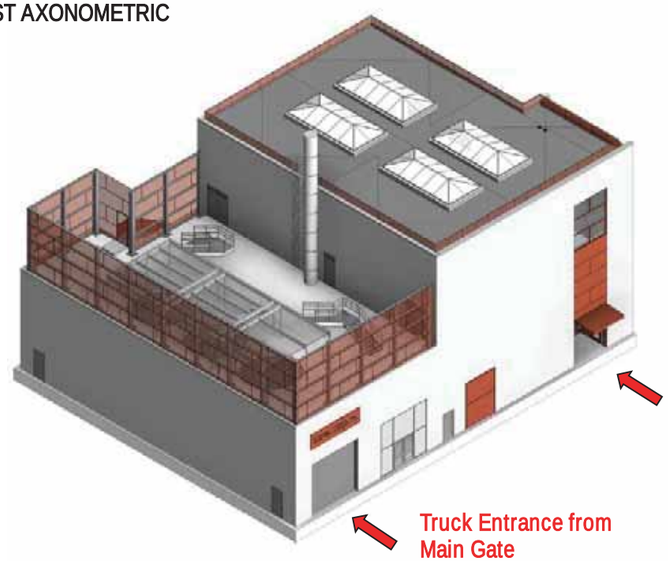
Aerial Photo - Existing Conditions and Locations of New Sludge Dewatering & Loadout Facility
Palo Alto Regional Water Quality Control Plant

CH2MHILL

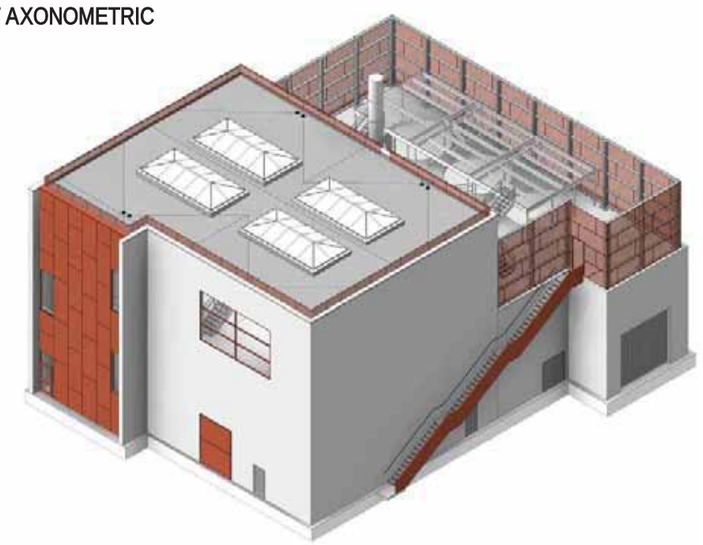
NORTHEAST AXONOMETRIC



NORTHWEST AXONOMETRIC



SOUTHEAST AXONOMETRIC



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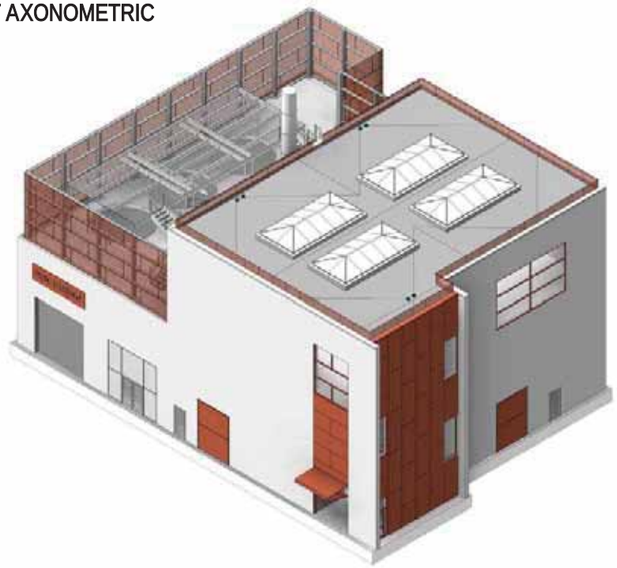


Axionometric Views – Sludge Dewatering and Loadout Facility
Palo Alto Regional Water Quality Control Plant

CH2MHILL | mwa architects

NOTE: LEVEL 1 FINISHED FLOOR IS AT ELEVATION 11.5-FT.

LICENSED ARCHITECT
MICHAEL E. WILLIS
No. C-15140
9-30-15
RENEWAL DATE
STATE OF CALIFORNIA

NO.	DATE	REVISION	Designer	Checker	Approver	APP'D BY
			MWA	MWA	GR	APP'D

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT

COMPONENT 1 - SLUDGE DEWATERING AND LOADOUT FACILITY

CH2MHILL mwa architects

SLUDGE DEWATERING AND LOADOUT FACILITY

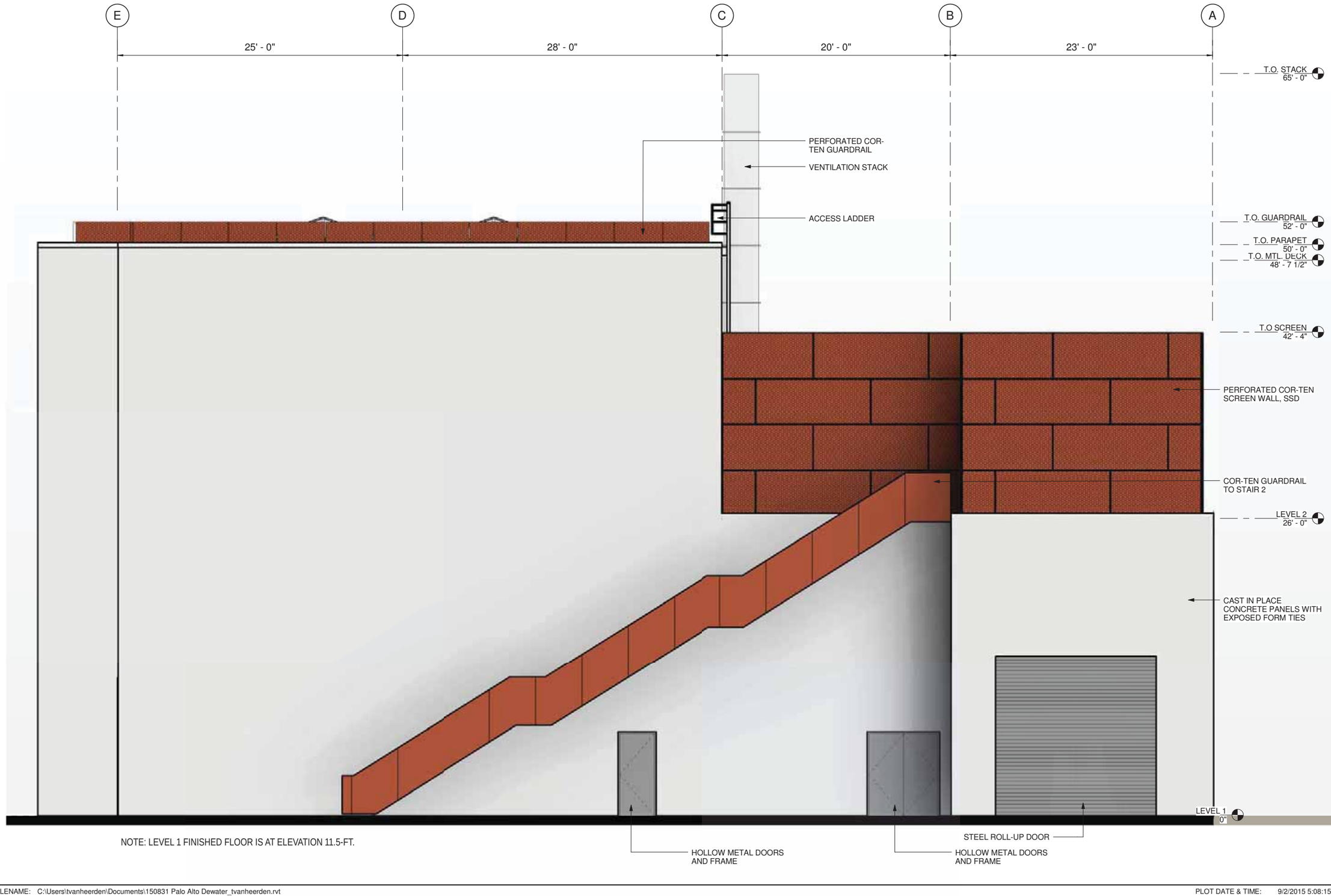
ARCHITECTURE
WEST
ELEVATION_PRESENTATION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	JULY 2015
PROJ	201501
DWG	000-1
SHEET	PRELIMINARY

FILENAME: C:\Users\tvanheerden\Documents\150831 Palo Alto Dewater_tvanheerden.rvt

PLOT DATE & TIME: 9/2/2015 5:08:10 PM



LICENSED ARCHITECT
MICHAEL E. WILLIS
No. C-15140
9-30-15
RENEWAL DATE
STATE OF CALIFORNIA

NO.	DATE	REVISION	BY	APVD
Designer	MWA	Author	MWA	Checker	GR	Approver	APPVD BY

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT

COMPONENT 1 - SLUDGE DEWATERING AND LOADOUT FACILITY

CH2MHILL
mwa architects

SLUDGE DEWATERING AND LOADOUT FACILITY

ARCHITECTURE
EAST ELEVATION_PRESENTATION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	JULY 2015
PROJ	201501
DWG	000-2
SHEET	PRELIMINARY

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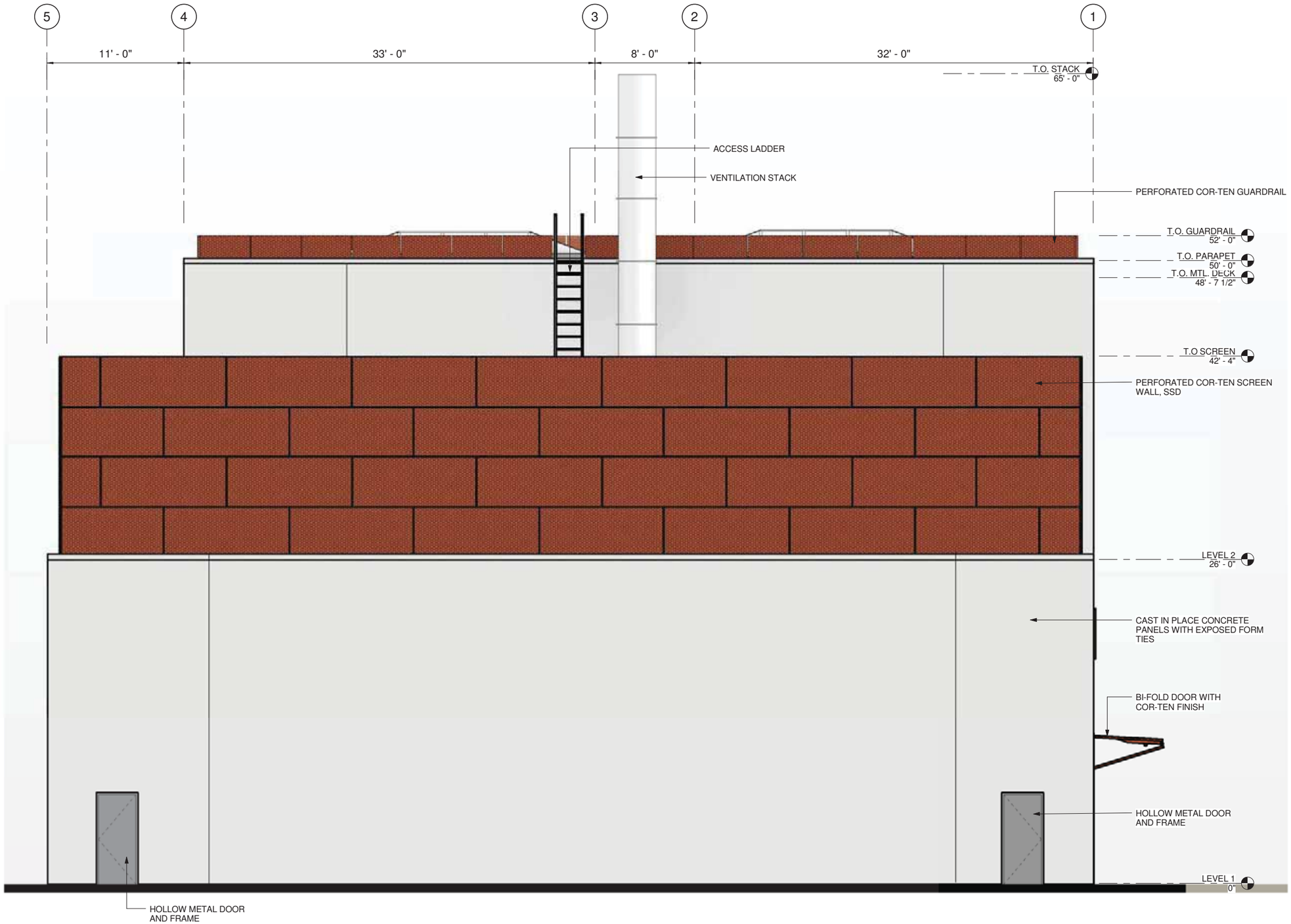


NOTE: LEVEL 1 FINISHED FLOOR IS AT ELEVATION 11.5-FT.

LICENSED ARCHITECT
MICHAEL E. WILLIS
No. C-15140
9-30-15
RENEWAL DATE
STATE OF CALIFORNIA

NO.	DATE	REVISION	Designer	Author	Checker	Approver	APP'D BY
			MWA	MWA	MWA	GR	APP'D

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT

COMPONENT 1 - SLUDGE DEWATERING AND LOADOUT FACILITY

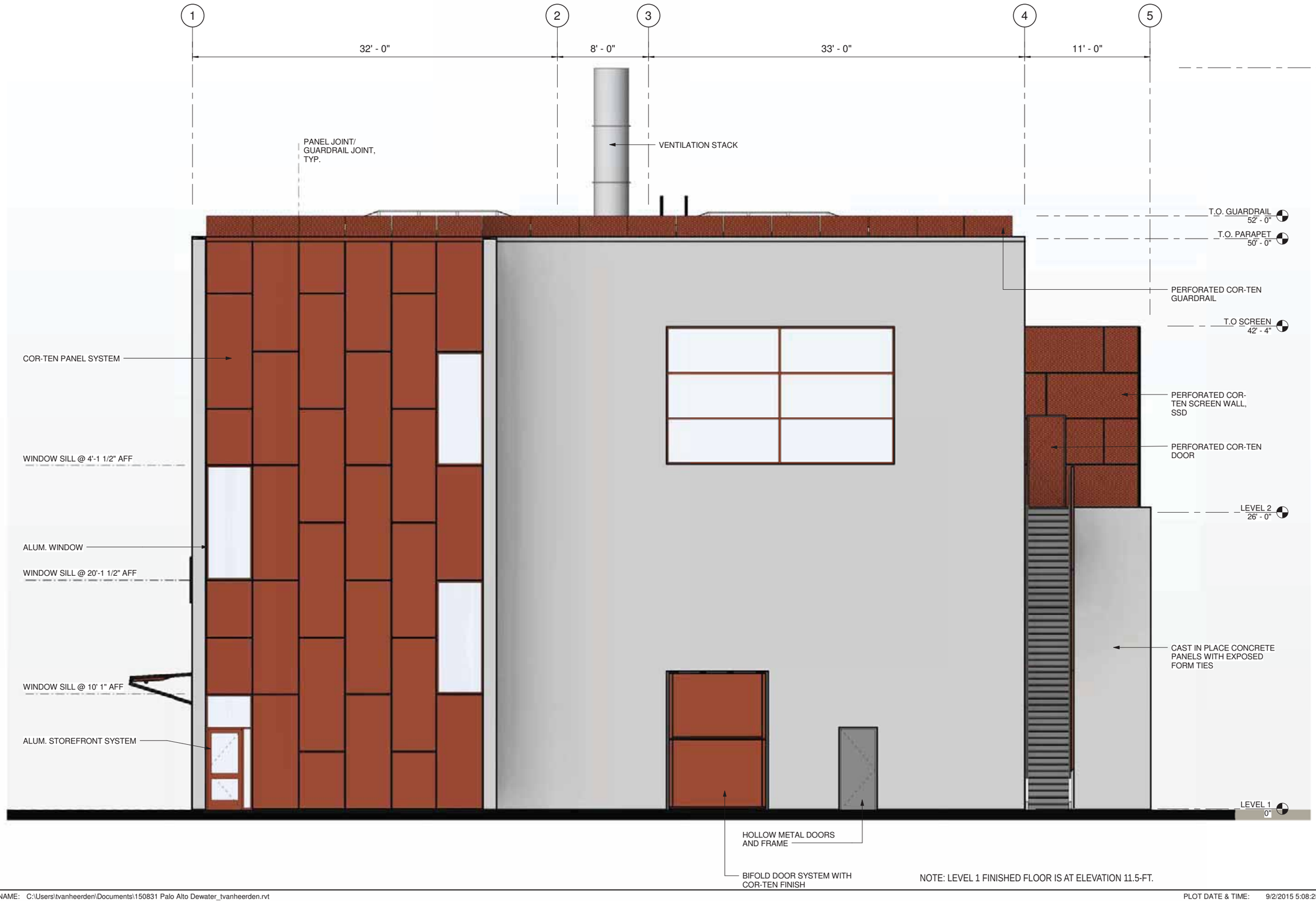
CH2MHILL mwa architects

SLUDGE DEWATERING AND LOADOUT FACILITY

ARCHITECTURE
NORTH
ELEVATION_PRESENTATION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	JULY 2015
PROJ	201501
DWG	000-3
SHEET	PRELIMINARY



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MICHAEL E. WILLIS
No. C-15140
9-30-15
RENEWAL DATE
STATE OF CALIFORNIA

NO.	DATE	REVISION	BY	APPD
Designer	MWA	Author	MWA	Checker	MWA	Approver	GR

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT
.
COMPONENT 1 - SLUDGE DEWATERING
AND LOADOUT FACILITY

CH2MHILL mwa architects

SLUDGE DEWATERING AND LOADOUT FACILITY

ARCHITECTURE
SOUTH
ELEVATION_PRESENTATION

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	JULY 2015
PROJ	201501
DWG	000-4
SHEET	PRELIMINARY

Source: Aerial from Google Earth Pro © 2015. Additional information added by CH2M HILL.

Neighborhood Context:
Site Plan showing viewpoint locations
Palo Alto Regional Water Quality Control Plant

CH2MHILL

VIEW FROM ENTRY GATE

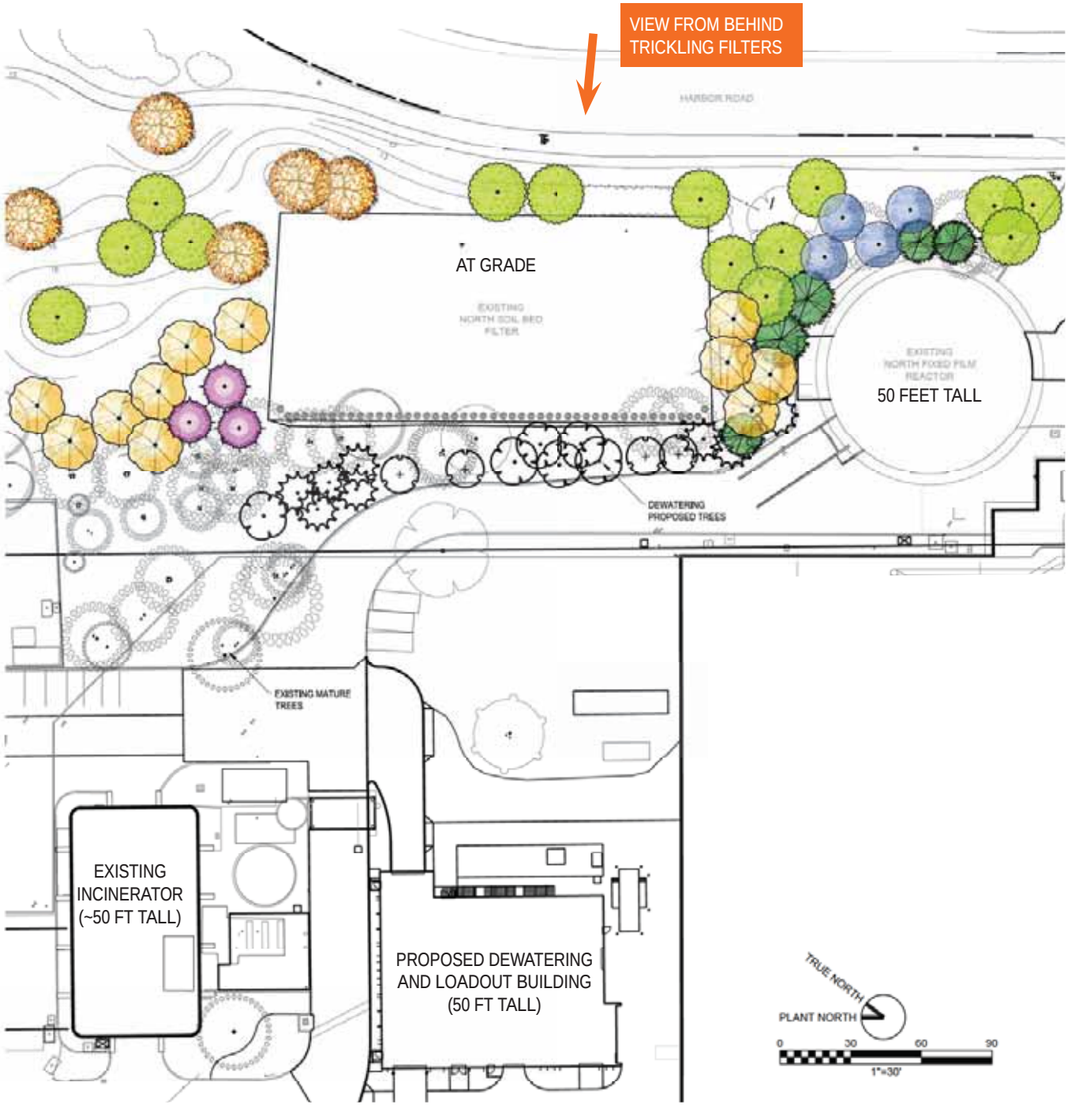
VIEW FROM BEHIND TRICKLING FILTERS

VIEW FROM JOGGING PATH

VIEW FROM FOOTBRIDGE

Neighborhood Context:
Photo Renderings showing proposed Dewatering and Loadout Facility views from Baylands
Palo Alto Regional Water Quality Control Plant

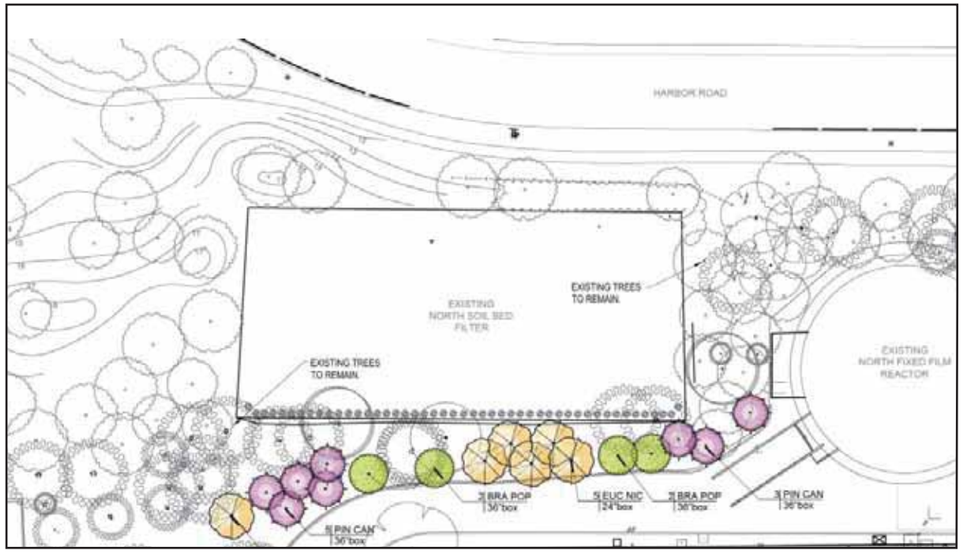
CH2MHILL | mwa architects



TREE LEGEND

TREES	CODE	BOTANICAL NAME/COMMON NAME	10 YEAR HEIGHT X WIDTH
	BRA POP	Brachychiton populneum/Bottle Tree	28' x 20'
	EUC NIC	Eucalyptus nicholii/Nichol's Willow-leafed Peppermint	30' x 14'
	PIN CAN	Pinus canariersis/Canary Island Pine	40' x 16'

NEW VEGETATION INSTALLED IN 2014.



NEW VEGETATION TO BE INSTALLED AS PART OF THIS PROJECT.

VIEW FROM BEHIND TRICKLING FILTERS. (ANTICIPATED TREE SCREENING AT 10 YEARS)

Neighborhood Context: Photo Rendering Showing Proposed Dewatering and Loadout Facility View from the Baylands from Behind Trickling Filters with Anticipated Tree Screening at 10 Years
Palo Alto Regional Water Quality Control Plant

VIEW FROM ENTRY GATE

Neighborhood Context:
Photo Rendering Showing Proposed Dewatering and Loadout Facility View from the Entry Gate
Palo Alto Regional Water Quality Control Plant

VIEW FROM BEHIND TRICKLING FILTERS

Neighborhood Context:
Photo Rendering Showing Proposed Dewatering and Loadout Facility View from the Baylands from Behind Trickling Filters with Anticipated Tree Screening at 10 years
Palo Alto Regional Water Quality Control Plant

VIEW FROM JOGGING PATH

Neighborhood Context:
Photo Rendering Showing Proposed Dewatering and Loadout Facility View from the Baylands from Jogging Path
Palo Alto Regional Water Quality Control Plant

VIEW FROM FOOTBRIDGE

Neighborhood Context:
Photo Rendering Showing Proposed Dewatering and Loadout Facility View from the Baylands from Footbridge
Palo Alto Regional Water Quality Control Plant

Source: Aerial from Google Earth Pro © 2015. Additional information added by CH2M HILL.

Neighborhood Context:
Aerial Photo Showing Photomontage Locations from Bixby Park
Palo Alto Regional Water Quality Control Plant

CH2MHILL

Neighborhood Context:
Photo Renderings showing proposed Dewatering and Loadout Facility views from Bixby Park – View Point A
Palo Alto Regional Water Quality Control Plant

Neighborhood Context:
Photo Renderings showing proposed Dewatering and Loadout Facility views from Bixby Park – View Point B
Palo Alto Regional Water Quality Control Plant

Neighborhood Context:
Photo Renderings showing proposed Dewatering and Loadout Facility views from Bixby Park –
View Point C
Palo Alto Regional Water Quality Control Plant

CH2MHILL

NORTH SOIL BED FILTER
NORTH TRICKLING FILTER
SOUTH TRICKLING FILTER
SOUTH SOIL BED FILTER
MAINTENANCE BUILDING & WAREHOUSE
PALO ALTO AIRPORT OF SANTA CLARA COUNTY
BAYSHORE ROAD
UV FACILITY
CHLORINATION STATION
INCINERATION BUILDING
NOT IN SERVICE
PRIMARY SEDIMENTATION TANKS
AERATION BASINS
DUAL MEDIA FILTERS
GRIT REMOVAL
RECYCLED WATER CHLORINE CONTACT TANK
REC. PLANT FILTERS
OIL STORAGE
SOLAR PANELS
PUMPING PLANT BIOFILTER
PUMPING PLANT
DPS TRAINING
RECYCLED WATER TANK NO.3
ADMINISTRATION BUILDING
CSD PUMPING PLANT
RECYCLED WATER TANK NO.2
RECYCLED WATER TANK NO.1
FINAL CLARIFIER
OPERATIONS BUILDING
OFFICE BUILDING
OFFICE BUILDING
CALIFORNIA SELF STORAGE
SEWER CLEANING PAD
EMBARCADERO WAY
TRUE NORTH
PLANT NORTH
0 50 100 150
1"=50'

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REVISION	BY	APP'D
DSGN	W WAGNER	DR	JL PFEIFER	CHK

CHECKED BY APP'D BY

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT
SLUDGE DEWATERING AND LOADOUT FACILITY

CH2MHILL.

SITE CIVIL

EXISTING CONDITIONS PLAN

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	SEPTEMBER 2015
PROJ	658394
DWG	05-CX-2000
SHEET	XX

FILENAME: 05-CX-2000_658394.dgn PLOT DATE: 2015\09\01 PLOT TIME: 12:39:18 PM

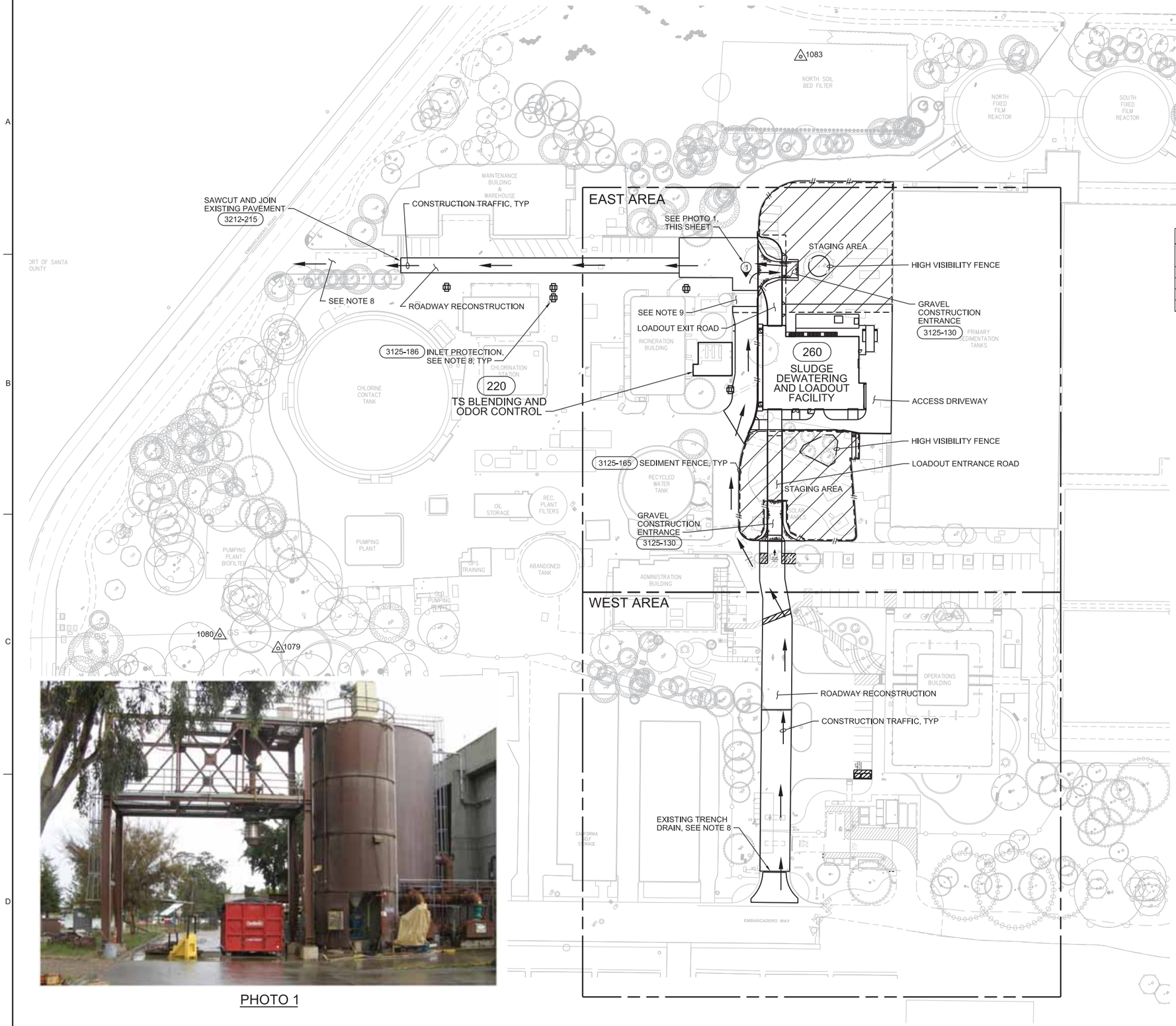


PHOTO 1

CONTROL POINT TABLE

POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
1079	1991498.47	6093557.97	7.54	MS RB .5 CONTROL POINT
1080	1991552.12	6093532.46	7.33	MS RB .5 CONTROL POINT
1083	1991449.58	6094344.30	15.84	MS RB .5 CONTROL POINT
1094	1991055.71	6094607.27	14.83	MS RB .5 CONTROL POINT

NOTES:

1. CONTRACTOR TO MAINTAIN ACCESS TO ALL PORTIONS OF THE PLANT FOR PLANT PERSONNEL.
2. CONTRACTOR SHALL MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
3. STAGING AREA IS FOR CONTRACTOR TO USE FOR TRAILERS AND STORAGE OF MATERIALS. CONTRACTOR IS RESPONSIBLE FOR SURFACING, SECURITY, AND EROSION AND SEDIMENTATION CONTROL OF STAGING AREA.
4. CONTRACTOR'S EMPLOYEES SHALL NOT PARK IN AREAS ON THE PLANT GROUNDS, EXCEPT IN THE STAGING AREA. CONTRACTOR SHALL ACQUIRE ADDITIONAL PARKING AREA OFFSITE, IF NECESSARY.
5. CONTRACTOR SHALL NOT STORE MATERIAL OR EQUIPMENT IN AREAS ON THE PLANT GROUNDS, EXCEPT IN THE STAGING AREA. CONTRACTOR SHALL ACQUIRE ADDITIONAL STORAGE AREA OFFSITE, IF NECESSARY.
6. EROSION CONTROL AND TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY AND SHALL BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
7. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL MEASURES INSTALLED FOR THE FULL DURATION OF THIS CONTRACT.
8. CONTRACTOR SHALL SUPPLY AND MAINTAIN ALL EROSION CONTROL MEASURES NEEDED TO PREVENT ANY MATERIAL FROM LEAVING THE SITE DURING RECONSTRUCTION OF THE ROADWAYS.
9. IF ASH BIN SHOWN IN PHOTO 1 RESTRICTS CONSTRUCTION TRAFFIC, CONTRACTOR MAY REMOVE BIN BUT MUST REPLACE IT FOR LOADING EVERY MONDAY MORNING. FULL BIN WILL BE HAULED AWAY BY OTHERS ON TUESDAY MORNING AND REPLACED WITH AN EMPTY BIN.

* GREY DENOTES EXISTING AND BLACK DENOTES NEW

PROJECT DATA:
Lot area (RWQCP): 24.87 acres
Lot coverage (by the new Sludge Dewatering and Loadout Facility): 6.664 SF
Floor area (two-story facility): 13,675 SF
New paving: 9,000 SF
New landscaping: 11,000 SF

TRUE NORTH
PLANT NORTH
0 50 100 150
1"=50'

REGISTERED PROFESSIONAL ENGINEER
WILLIAM B. WAGNER
No. C28356
Exp. 03-31-16
CIVIL
STATE OF CALIFORNIA

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	DSGN	DR	CHK	APVD	BY	APVD
		W WAGNER	JL PFEIFER	DJ PETERSON			DW GREEN

REVISION

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT

SLUDGE DEWATERING AND LOADOUT FACILITY

CH2MHILL®

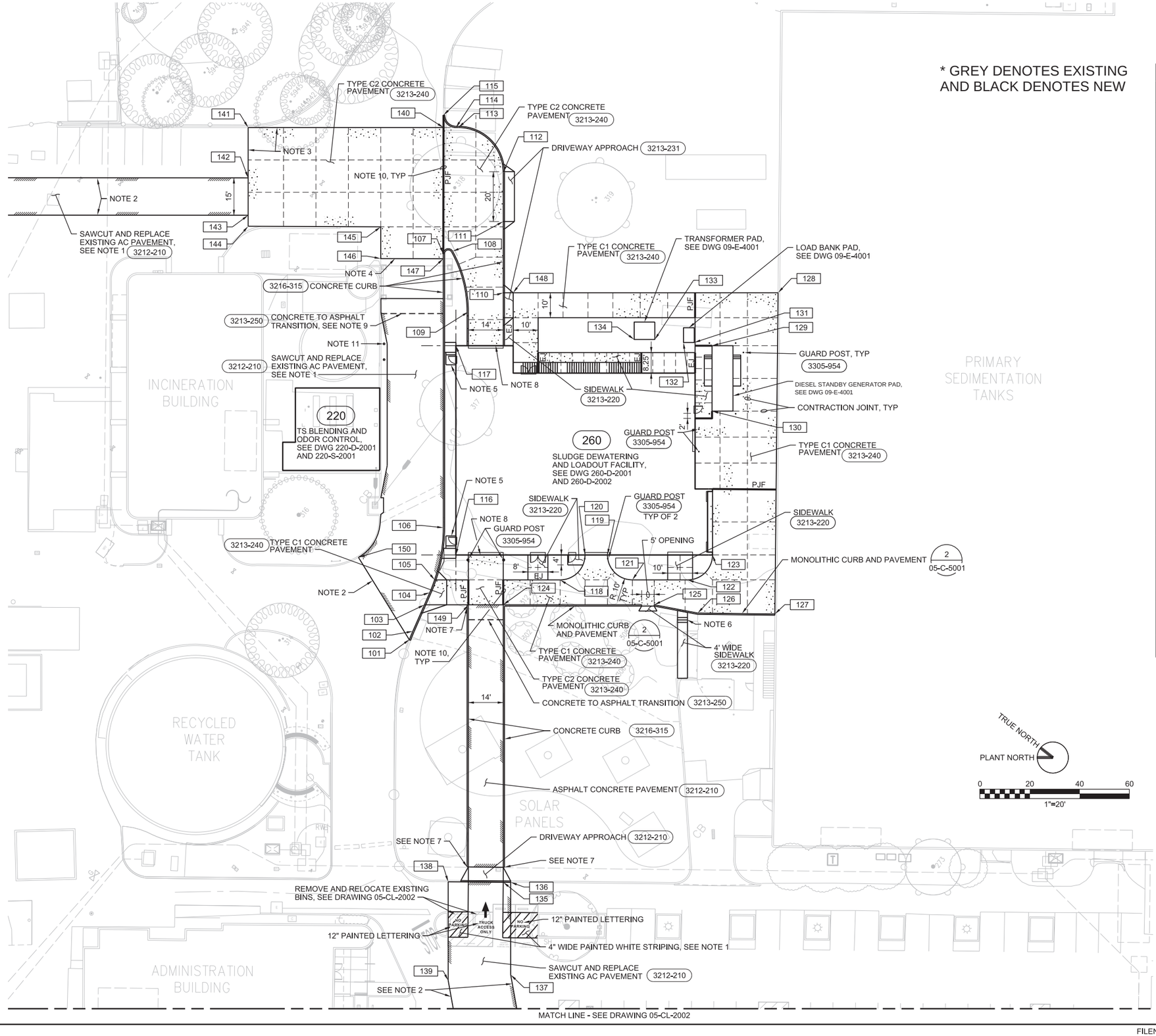
SITE CIVIL

OVERALL SITE PLAN

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	658394
DWG	05-C-2000
SHEET	26

FILENAME: 05-C-2000_658394.dgn PLOT DATE: 11/10/2015 PLOT TIME: 12:31:33 PM



GENERAL NOTE:

1. AT ALL DOORS, CONCRETE PAVEMENT TO REST IN NOTCH IN BUILDING FOUNDATION. SEE DETAIL 1 / 05-C-5001

HORIZONTAL CONTROL TABLE

POINT NUMBER	NORTHING	EASTING	DESCRIPTION
101	1991256.74	6094005.01	PC, FACE OF CURB, 50' R
102	1991257.72	6094008.36	PT, FACE OF CURB
103	1991260.60	6094019.61	FACE OF CURB, BEGIN DRIVEWAY
104	1991261.93	6094024.82	PC, FACE OF CURB, 65' R
105	1991263.49	6094030.03	FACE OF CURB, BEGIN DRIVEWAY
106	1991273.64	6094048.70	PT, FACE OF CURB
107	1991341.25	6094135.44	PC, FACE OF CURB, 2' R
108	1991338.89	6094138.52	PCC, FACE OF CURB, 50' R
109	1991318.98	6094123.22	PT, FACE OF CURB
110	1991312.63	6094137.85	FACE OF CURB, BEGIN DRIVEWAY
111	1991330.21	6094160.41	FACE OF CURB, BEGIN DRIVEWAY
112	1991342.33	6094175.97	PC, FACE OF CURB, 18' R
113	1991367.55	6094179.14	PT, FACE OF CURB
114	1991368.36	6094178.51	PC, FACE OF CURB, 5' R
115	1991375.38	6094179.40	PT, FACE OF CURB
116	1991262.93	6094043.14	BUILDING CORNER, GRID A-1
117	1991314.56	6094109.41	BUILDING CORNER, GRID A-5
118	1991223.79	6094060.97	PC, EDGE OF SIDEWALK, 10' R
119	1991222.04	6094075.00	PT, EDGE OF SIDEWALK
120	1991214.94	6094080.53	PC, EDGE OF SIDEWALK, 10' R
121	1991200.91	6094078.79	PT, EDGE OF SIDEWALK
122	1991183.42	6094092.41	PC, EDGE OF SIDEWALK, 10' R
123	1991181.68	6094106.45	PT, EDGE OF SIDEWALK
124	1991235.65	6094039.04	PI, FACE OF CURB
125	1991187.85	6094076.29	PI, FACE OF CURB
126	1991172.04	6094084.40	PI, FACE OF CURB
127	1991147.38	6094103.14	PI, FACE OF CURB
128	1991225.61	6094205.64	EDGE OF SIDEWALK
129	1991233.46	6094172.59	CORNER OF GENERATOR PAD
130	1991217.33	6094151.88	CORNER OF GENERATOR PAD
131	1991239.88	6094169.22	CORNER OF LOAD BANK PAD
132	1991243.30	6094166.56	CORNER OF LOAD BANK PAD
133	1991253.12	6094160.44	CORNER OF TRANSFORMER PAD
134	1991259.65	6094155.35	CORNER OF TRANSFORMER PAD
135	1991167.23	6093951.21	EDGE OF DRIVEWAY
136	1991164.84	6093953.04	EDGE OF PAVEMENT
137	1991142.01	6093923.73	PI, EDGE OF PAVEMENT
138	1991184.75	6093937.75	EDGE OF PAVEMENT
139	1991160.44	6093906.54	PI, EDGE OF PAVEMENT
140	1991372.31	6094175.43	EDGE OF PAVEMENT
141	1991434.15	6094127.25	EDGE OF PAVEMENT
142	1991421.72	6094111.30	EDGE OF PAVEMENT
143	1991412.50	6094099.47	EDGE OF PAVEMENT
144	1991409.79	6094095.99	EDGE OF PAVEMENT
145	1991367.68	6094128.51	EDGE OF PAVEMENT
146	1991359.84	6094118.46	EDGE OF PAVEMENT
147	1991340.01	6094133.83	EDGE OF PAVEMENT
148	1991309.47	6094140.31	EDGE OF SIDEWALK
149	1991246.70	6094030.44	PI, FACE OF CURB
150	1991293.19	6094018.35	BEGIN SAWCUT

NOTES:

1. CONTRACTOR SHALL REPLACE ALL PAVEMENT MARKINGS REMOVED WITH ASPHALT CONCRETE. ALL PAVEMENT MARKINGS SHALL MEET REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. SAWCUT EXISTING PAVEMENT AND CONNECT NEW PAVEMENT. SEE 3212-215
3. SAWCUT AND REMOVE EXISTING AC PAVEMENT AS REQUIRED TO CONSTRUCT CONCRETE PAVEMENT. REPAIR ASPHALT CONCRETE AS SHOWN IN 3212-215
4. CONNECT NEW CONCRETE PAVEMENT TO EXISTING CONCRETE PAVEMENT. SEE 3213-245
5. TYPE B EXTERIOR CONCRETE STAIR. SEE 0330-050, LANDING TO BE 4'X4', PROVIDE 2 RISERS DOWN TO 4" CONCRETE SIDEWALK BETWEEN BUILDING AND CURB. FILL IN GAP BETWEEN STAIRS AND CURB WITH CONCRETE.
6. TYPE B EXTERIOR CONCRETE STAIR. SEE 0330-050, PROVIDE 3 RISERS DOWN TO CONCRETE SIDEWALK. LAST RISER TO BE LOCATED AT EAST EDGE OF CONCRETE PAD AT EXISTING DOOR.
7. TAPER CURB HEIGHT FROM 6" TO 0" IN LAST 3 FEET.
8. FACE OF CURB OR EDGE OF PAVEMENT TO MATCH DOOR OPENING, TYPICAL.
9. INSTALL DOWELS IN EXISTING CONCRETE PER 3213-245
10. CONSTRUCTION JOINT WITH PREMOLDED JOINT FILLER PER 3213-245, SIM
11. CONSTRUCT NEW CURB AROUND NEW ELECTRICAL CONDUITS, SEE DRAWING 09-E-2001. NEW CURB TO BE 3'-0" FROM EXISTING CURB AND TAPER BACK TO EXISTING LOCATIONS AS SHOWN. PROVIDE GUARD POST ON EACH SIDE OF CONDUITS. SEE 3305-954

REGISTERED PROFESSIONAL ENGINEER WILLIAM B. WAGNER No. C28356 Exp. 03-31-16 CIVIL STATE OF CALIFORNIA

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DATE	DSGN	DR	JL PFEIFER	CHK	DJ PETERSON	APVD	REVISION	BY	APVD
		W WAGNER							DW	GREEN

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT
SLUDGE DEWATERING AND LOADOUT FACILITY

CH2MHILL®

SITE CIVIL

LOCATION PLAN EAST AREA

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	658394
DWG	05-CL-2001
SHEET	28

FILENAME: 05-CL-2001_658394.dgn PLOT DATE: 11/10/2015 PLOT TIME: 12:31:38 PM

MATCH LINE - SEE DRAWING 05-CL-2001

201

202

NOTE 1

NOTE 2

NOTE 3

EXISTING CURB TO REMAIN

NEW TRENCH DRAIN, SEE DWG 05-CG-2002

SAWCUT AND REPLACE EXISTING AC PAVEMENT, SEE NOTE 1 (3212-210)

12" PAINTED WHITE LETTERING, SEE NOTE 1

4" PAINTED WHITE STRIPING, SEE NOTE 1

RELOCATED BINS, SEE DWG 05-C-2001

MATCH EXISTING TRENCH DRAIN

203

204

EXISTING GUTTER TO REMAIN

OPERATIONS BUILDING

EMBARCADERO WAY

HORIZONTAL CONTROL TABLE

POINT NUMBER	NORTHING	EASTING	DESCRIPTION
201	1991147.17	6093894.64	EDGE OF PAVEMENT; PI
202	1991111.40	6093896.27	EDGE OF PAVEMENT; PI
203	1990982.10	6093678.26	EDGE OF PAVEMENT
204	1990958.62	6093696.25	EDGE OF PAVEMENT

NOTES:

1. CONTRACTOR SHALL REPLACE ALL PAVEMENT MARKINGS REMOVED WITH ASPHALT CONCRETE. ALL PAVEMENT MARKINGS SHALL MEET REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. SAWCUT EXISTING PAVEMENT AND CONNECT NEW PAVEMENT. SEE (3212-215)
3. SAWCUT GROOVES IN PAVEMENT AND BURY AND SEAL WIRE LOOP DETECTORS FOR THE EXISTING ENTRANCE GATE IN THE NEW ASPHALT CONCRETE PAVEMENT. INSTALLATION AND CONNECTIONS TO THE EXISTING GATE EQUIPMENT SHALL BE ACCORDING TO GATE MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. GRADE NEW ASPHALT CONCRETE TO MATCH EXISTING. FINISH SURFACE SHALL BE 1/4-INCH HIGHER THAN TOP OF EXISTING TRENCH DRAIN.

* GREY DENOTES EXISTING AND BLACK DENOTES NEW

TRUE NORTH

PLANT NORTH

0 20 40 60

1"=20'

REGISTERED PROFESSIONAL ENGINEER WILLIAM B. WAGNER No. C28356 Exp. 03-31-16 CIVIL STATE OF CALIFORNIA

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DATE	REVISION	DR	CHK	APVD
DSGN	W WAGNER	JL PFEIFER		DJ PETERSON	DW GREEN

CITY OF PALO ALTO
CITY OF PALO ALTO CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT

SLUDGE DEWATERING AND LOADOUT FACILITY

CH2MHILL®

SITE CIVIL

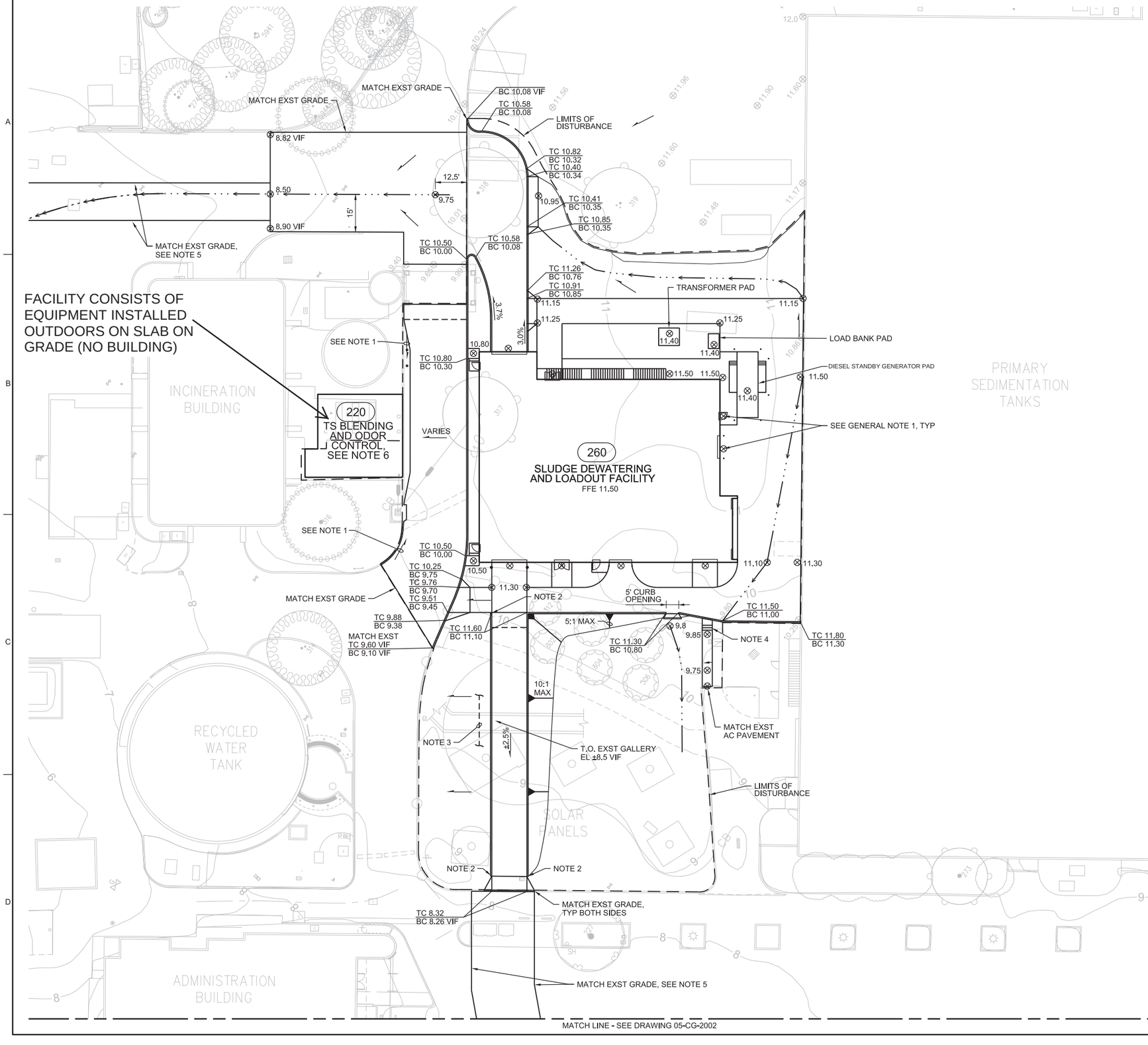
LOCATION PLAN WEST AREA

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	658394
DWG	05-CL-2002
SHEET	29

FILENAME: 05-CL-2002_658394.dgn PLOT DATE: 11/10/2015 PLOT TIME: 12:31:43 PM



GENERAL NOTE:

1. PAVEMENT ELEVATION AT ALL DOORS TO BE 11.48. THICKEN CONCRETE PAVEMENT IN FOOTING NOTCH. SEE AND STRUCTURAL DRAWINGS 260-S-3002 AND 260-S-3003. (1 / 05-C-5001)
2. 100-YEAR FLOOD ELEVATION = 11.0 NAVD88.
3. ALL STORMWATER RUNOFF IS COLLECTED ON SITE AND DISCHARGES TO THE PLANT DRAIN SYSTEM.
4. EXCAVATION VOLUME IS ESTIMATED TO BE GREATER THAN 100 CUBIC YARDS. CONTRACTOR SHALL OBTAIN A CITY OF PALO ALTO EXCAVATION AND GRADING PERMIT.

NOTES:

1. CONTRACTOR SHALL SURVEY ELEVATIONS OF EXISTING PAVEMENT AND CURB PRIOR TO REMOVAL. MATCH NEW CURB AND ASPHALT CONCRETE TO EXISTING ELEVATIONS OF REMOVED PAVEMENT ALONG EXISTING CURB. ADJUST TO PROVIDE SLOPE TO EXISTING CATCH BASIN.
2. TAPER CURB HEIGHT FROM 6" TO 0" IN LAST 3 FEET.
3. SEE 06-CY-2001 FOR ROUTING OF 8"FS OVER EXISTING GALLERY. MOUND FINISH GRADE OVER PIPE TO PROVIDE A MINIMUM 3 FEET OF COVER. SLOPE SOIL AWAY AT 4:1 MAX.
4. MATCH CONCRETE STAIR LANDING TO TOP OF CURB. ELEVATION OF TOP STEP NOSING TO BE LEVEL AND 1/2-INCH LOWER THAN LOWEST POINT OF CURB TOP.
5. CONTRACTOR SHALL SURVEY ELEVATIONS OF EXISTING PAVEMENT PRIOR TO REMOVAL TO DETERMINE EXISTING SLOPES AND DRAINAGE PATTERNS. NEW GRADING SHALL SLOPE TO DRAIN NEW PAVEMENT TO LOW POINTS ALONG EXISTING PAVEMENT EDGES AND ALLOW SURFACE WATER TO FLOW TO INLETS AS IT DOES CURRENTLY.
6. FOR GRADING OF NEW ODOR CONTROL SLAB SEE 220-S-2001.

* GREY DENOTES EXISTING AND BLACK DENOTES NEW

TRUE NORTH
PLANT NORTH

0 20 40 60
1"=20'

FILENAME: 05-CG-2001_658394.dgn PLOT DATE: 11/10/2015 PLOT TIME: 12:31:38 PM

WILLIAM B. WAGNER — REGISTERED PROFESSIONAL ENGINEER — No. C28356 Exp. 03-31-16 — CIVIL — STATE OF CALIFORNIA

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NO.	DATE	REVISION	DR	CHK	APVD
DSGN	W WAGNER	JL PFEIFER		DJ PETERSON	APVD
					BY APVD
					DW GREEN

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT

SLUDGE DEWATERING AND LOADOUT FACILITY

CH2MHILL®

SITE CIVIL

GRADING PLAN EAST AREA

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"	
DATE	NOVEMBER 2015
PROJ	658394
DWG	05-CG-2001
SHEET	30

MATCH LINE - SEE DRAWING 05-CG-2001

18" SLOTTED CSP, SEE NOTE 3

MATCH GRADES AND SLOPES OF EXISTING PAVEMENT, SEE NOTE 1

NOTE 2

LOCATE AT APPROXIMATE PC OF EXISTING CURB

12" CMP CONNECTION TO EXISTING MANHOLE

3305-730

RELOCATED BINS

SEE NOTE 3 ON DWG 05-CL-2002

NOTE 2

OPERATIONS BUILDING

EMBARCADERO WAY

IFORNIA SELF ORAGE

NOTES:

1. CONTRACTOR SHALL SURVEY ELEVATIONS OF EXISTING PAVEMENT PRIOR TO REMOVAL TO DETERMINE EXISTING SLOPES AND DRAINAGE PATTERNS. NEW GRADING SHALL SLOPE TO DRAIN NEW PAVEMENT TO LOW POINTS ALONG EXISTING PAVEMENT EDGES AND ALLOW SURFACE WATER TO FLOW TO INLETS AS IT DOES CURRENTLY.
2. FINISH SURFACE OF NEW ASPHALT CONCRETE SHALL BE 1/4-INCH HIGHER THAN TOP OF TRENCH DRAINS.
3. SEE CALTRANS STANDARD DRAWINGS D98A AND D98B. PROVIDE 18"x12" TEE AND SLOPE 12" PIPE AT 1.0% MINIMUM TO EXISTING MANHOLE.

* GREY DENOTES EXISTING AND BLACK DENOTES NEW

TRUE NORTH

PLANT NORTH

0 20 40 60

1"=20'

REGISTERED PROFESSIONAL ENGINEER
WILLIAM B. WAGNER
No. C28356
Exp. 03-31-16
CIVIL
STATE OF CALIFORNIA

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REVISION	DR	CHK	APVD	BY	APVD
DSGN	W WAGNER		JL PFEIFER	DJ PETERSON			DW GREEN

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT

SLUDGE DEWATERING AND LOADOUT FACILITY

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SITE CIVIL

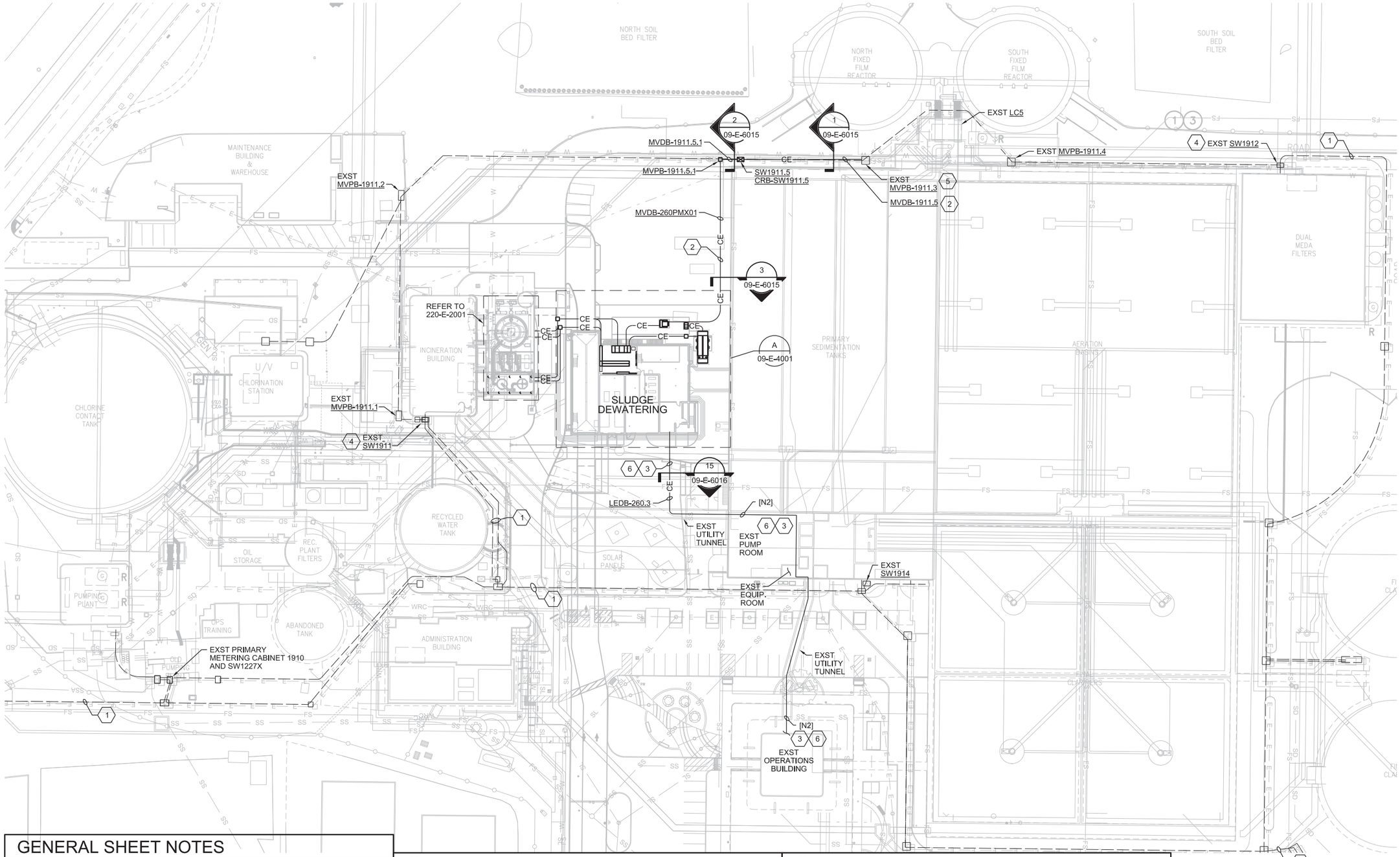
GRADING PLAN
WEST AREA

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	658394
DWG	05-CG-2002
SHEET	31

FILENAME: 05-CG-2002_658394.dgn PLOT DATE: 11/10/2015 PLOT TIME: 12:31:41 PM



GENERAL SHEET NOTES

A. EXISTING ELECTRICAL 12.47KV LOOP ROUTING SHOWN DASHED AND BOLD FOR CLARITY.

SHEET KEYNOTES

1. ELECTRICAL POWER IS FED TO THE SITE BY AN EXST 12.47KV UTILITY LOOP CONSISTING OF 15KV PAD MOUNT SWITCHES, 12.47KV DUCT BANKS, AND FLUSH IN GRADE PULL BOXES. THE ENTIRE LOOP IS NOT DETAILED ON THE PLAN BUT IT IS A CONTINUOUS LOOP AROUND THE ENTIRE PLANT THAT ALLOWS FOR ISOLATION (DE-ENERGIZING) OF A SELECTED PORTION OF THE LOOP BY OPENING SWITCHES AT VARIOUS MULTI-WAY PAD MOUNT SWITCHES WHILE CONTINUING TO POWER THE REMAINDER OF THE LOOP.
2. PROVIDE 12.47 KV FEEDER/CONCRETE ENCASED DUCT BANK FROM SW1911.5 TO PAD-MOUNT TRANSFORMER 260PMX01 THROUGH PULL BOX MVPB-1911.5.1. REFER TO 09-E-4001 AND 09-E-6001 FOR CONTINUATION OF WORK REQUIRED.

SHEET KEYNOTES (CONT)

3. PROVIDE A CONCRETE ENCASED DUCT BANK FOR LIMITED ENERGY CABLES FROM THE CONTROL ROOM IN THE SLUDGE DEWATERING AND LOADOUT FACILITY TO THE UTILITY TUNNEL. ROUTE THE CABLES THROUGH THE UTILITY TUNNEL TO THE PUMP ROOM AND INTO THE UTILITY TUNNEL LEADING TO THE OPERATIONS BUILDING. ROUTE THE CABLES THROUGH THE OPERATIONS BUILDING TO THE SERVER ROOM.
4. TO DE-ENERGIZE THE SECTION OF THE 12.47KV LOOP TO PERFORM WORK AT EXST MVPB-1911.3, EXISTING SWITCHWAYS MUST BE OPENED AT EXST SW 1911 AND EXST SW1912. COORDINATE DOWNTIME WITH THE OWNER AND PREPARE THE NEW SWITCH SW1911.5 AND ADJACENT DUCT BANKS BEFOREHAND TO MINIMIZE DOWNTIME. VERIFY DOWNTIME PLAN WITH THE OWNER 30 DAYS PRIOR TO WORK.
5. FOR WORK TO BE PERFORMED AT EXST MVPB-1911.3, AND NEW SW1911.5, SEE DWG 09-E-6001.

SHEET KEYNOTES (CONT)

6. INSTALL FOUR 1-INCH INNERDUCTS IN EACH CONDUIT. LABEL EACH INNERDUCT AT BOTH ENDS. INSTALL PLUGS AND PULLSTRINGS.

* GREY DENOTES EXISTING AND BLACK DENOTES NEW

PRELIMINARY NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER — WILLIAM KURT VOLLMERS — E15211 — ELECTRICAL — STATE OF CALIFORNIA

NO.	DATE	DR	REVISION	CHK	APVD	BY	APVD
DSGN	AC BLASE		JN HJELMBERG		WK VOLLMERS		DW GREEN

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT
SLUDGE DEWATERING AND LOADOUT FACILITY

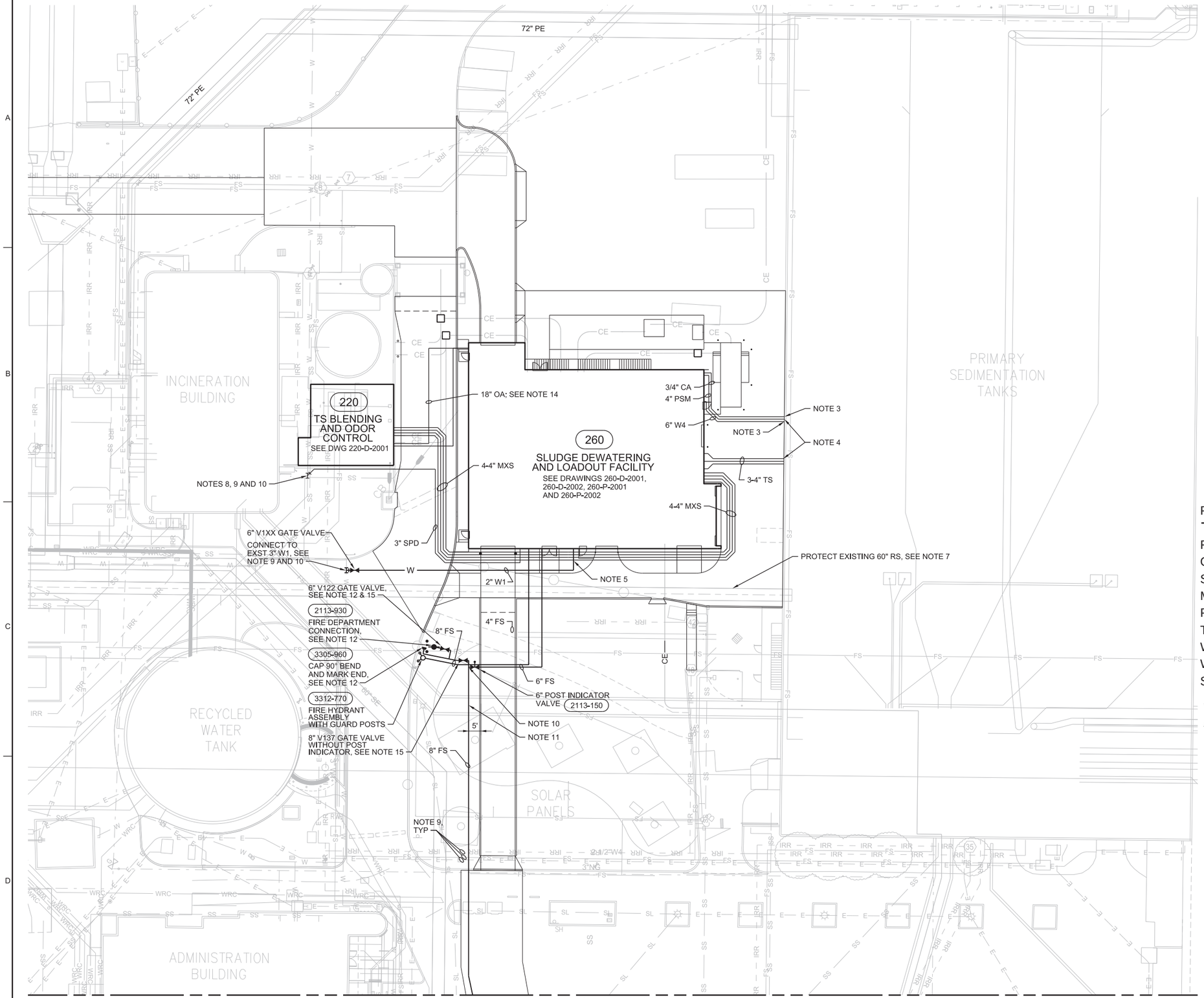
CH2MHILL®

ELECTRICAL

SITE ELECTRICAL PLAN

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	658394
DWG	09-E-2001
SHEET	62



NOTES:

1. PROVIDE MINIMUM 36" COVER OVER ALL PIPING.
2. SEE FLOW STREAM IDENTIFICATIONS ON DRAWING 01-G-0008
3. CONNECT TO EXISTING 6" W4 ON NORTH WALL OF PRIMARY SEDIMENTATION TANKS, EXPOSED ~2.5 FT ABOVE GRADE, SEE DRAWING 20-D-2001.
4. 3 - 4" TS LINES AND 1 - 4" PSM LINE ATTACHED TO NORTH WALL OF PRIMARY SEDIMENTATION TANKS, SEE DRAWING 20-D-2001.
5. THE 2" W1 SHALL BE CONSTRUCTED PERPENDICULAR TO AND AT LEAST ONE FOOT ABOVE MXS LINES. NO CONNECTION JOINT SHALL BE MADE IN THE W1 LINE WITHIN EIGHT HORIZONTAL FEET OF THE MXS LINES.
6. COORDINATE ALL YARD PIPING WITH ELECTRICAL SHOWN ON DRAWING DRAWINGS 09-E-2001 AND 4001.
7. CONTRACTOR SHALL PROTECT EXISTING 60"RS FORCE MAIN AT ALL TIMES. PROVIDE ALL MEANS NECESSARY TO PREVENT HEAVY LOADING ON PIPE.
8. INSERT 8" WYE IN EXISTING PLANT DRAIN. PROVIDE ALL FITTINGS NECESSARY TO CONNECT 3"SPD TO WYE.
9. CONTRACTOR SHALL VERIFY EXACT LOCATION AND DEPTH OF EXISTING PIPING AND UTILITIES BY GPR, POTHOLING, OR OTHER METHODS, AS REQUIRED, PRIOR TO START OF CONSTRUCTION.
10. CONTRACTOR SHALL PROVIDE ALL FITTINGS REQUIRED TO CHANGE PIPE SIZES, MATERIALS, ETC. TO MAKE A COMPLETE AND WATERTIGHT SYSTEM. TYPICAL FOR ALL PIPING.
11. TOP OF CONCRETE GALLERY IS AT APPROXIMATE ELEVATION 8.5 NAVD88. CONTRACTOR SHALL FIELD VERIFY PRIOR TO CONSTRUCTION. ROUTE PIPE OVER GALLERY PER DETAIL 4/05-C-5001 AND MOUND SOIL OVER PIPE. SEE DRAWING 05-CG-2001.
12. COORDINATE LOCATION OF FIRE PIPING AND FIXTURES WITH LANDSCAPING, SEE DRAWING 07-L-3001. FIRE HYDRANT AND PIV TO BE LOCATED A MINIMUM OF 40' FROM BUILDING.
13. CONNECT TO 3/4" CA PIPE ON NORTH WALL OF PRIMARY SEDIMENTATION TANKS, SEE DRAWING 20-D-2001.
14. CONCRETE ENCASE 18" OA PIPE IN STREET, SEE (0330-016).
15. PROVIDE VALVE BOX FOR ALL BURIED GATE VALVES, SEE (4027-640).

Page Legend

FS	Fire Service
OA	Odorous Air
SPD	Sump Pump Discharge
MXS	Sludge Mixed
PSM	Primary Scum
TS	Thickened Sludge
W1	No. 1 (Potable) Water
W4	No. 4 Process Water (High Pressure)
SS	Sanitary Sewer

* GREY DENOTES EXISTING AND BLACK DENOTES NEW

TRUE NORTH
PLANT NORTH
0 20 40 60
1"=20'

PRELIMINARY NOT FOR CONSTRUCTION

WILLIAM B. WAGNER — REGISTERED PROFESSIONAL ENGINEER — No. C28356 Exp. 03-31-16 — CIVIL — STATE OF CALIFORNIA

NO.	DATE	REVISION	BY	APVD
DSGN	W WAGNER	DR JL PFEIFER	CHK DJ PETERSON	APVD DW GREEN

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT
SLUDGE DEWATERING AND LOADOUT FACILITY

CH2MHILL®

YARD PIPING
YARD PIPING PLAN EAST AREA

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
DATE NOVEMBER 2015
PROJ 658394
DWG 06-CY-2001
SHEET 33

FILENAME: 06-CY-2001_658394.dgn PLOT DATE: 11/10/2015 PLOT TIME: 12:31:29 PM

MATCH LINE - SEE DRAWING 06-Y-2001

8" FS

NOTES 3 AND 4

TRENCH DRAIN, SEE DWG 05-CG-2002

Sanitary Sewer Manhole, Note 8

NOTE 3, TYP

10'

8" V137 GATE VALVE, WITHOUT POST INDICATOR, SEE NOTE 7

NOTES 5 AND 6

OPERATIONS BUILDING

EMBARCADERO WAY

NOTES:

1. PROVIDE MINIMUM 36" COVER OVER ALL PIPING.
2. SEE FLOW STREAM IDENTIFICATIONS ON DRAWING 01-G-0008
3. CONTRACTOR SHALL VERIFY EXACT LOCATION AND DEPTH OF EXISTING PIPING AND UTILITIES BY GPR, POTHOLING, OR OTHER METHODS, AS REQUIRED, PRIOR TO START OF CONSTRUCTION.
4. 10' MINIMUM LONG CONCRETE CAP OVER NEW 8" FS, SEE DETAIL 3 / 05-C-5001.
5. CONNECT TO EXISTING 8" FIRE BACKFLOW PREVENTOR. PROVIDE 8" TEE, REDUCER, AND ALL COUPLINGS REQUIRED.
6. CONTRACTOR SHALL PROVIDE ALL FITTINGS REQUIRED TO CHANGE PIPE SIZES, MATERIALS, ETC., TO MAKE A COMPLETE AND WATERTIGHT SYSTEM. TYPICAL FOR ALL PIPING.
7. PROVIDE VALVE BOX FOR ALL BURIED GATE VALVES, SEE 4027-640.
8. ALL STORMWATER RUNOFF IS COLLECTED ON SITE AND DISCHARGES TO THE PLANT DRAIN SYSTEM

Page Legend

FS	Fire Service
OA	Odorous Air
SPD	Sump Pump Discharge
MXS	Sludge Mixed
PSM	Primary Scum
TS	Thickened Sludge
W1	No. 1 (Potable) Water
W4	No. 4 Process Water (High Pressure)
SS	Sanitary Sewer

* GREY DENOTES EXISTING AND BLACK DENOTES NEW

TRUE NORTH

PLANT NORTH

0 20 40 60

1"=20'

WILLIAM B. WAGNER No. C28356 Exp. 03-31-16 CIVIL STATE OF CALIFORNIA REGISTERED PROFESSIONAL ENGINEER

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DATE	REVISION	DR	CHK	APVD
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CITY OF PALO ALTO
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REGIONAL WATER QUALITY CONTROL PLANT
SLUDGE DEWATERING AND LOADOUT FACILITY

CH2MHILL®

YARD PIPING

YARD PIPING PLAN WEST AREA

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	658394
DWG	06-CY-2002
SHEET	34

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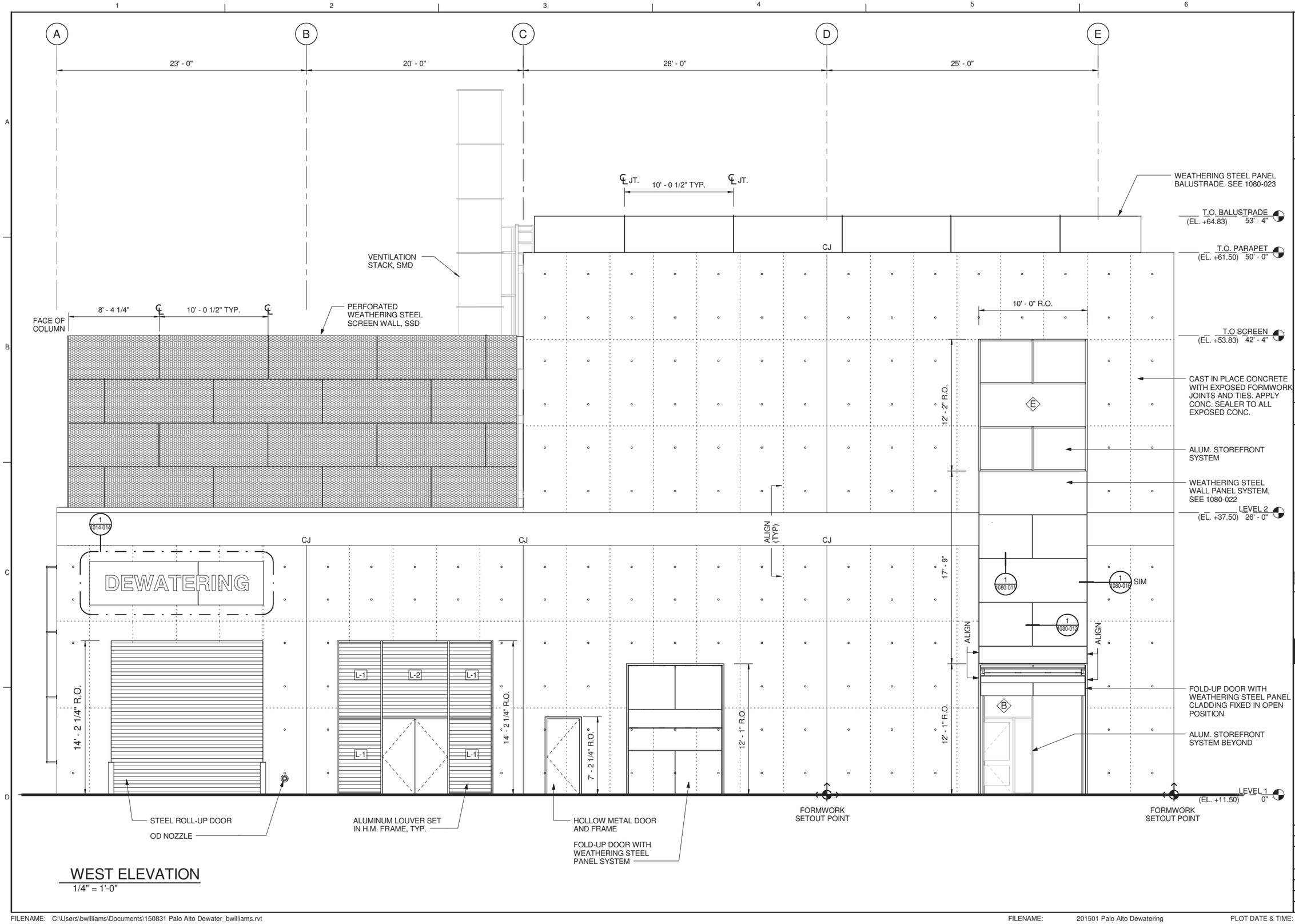

WEST ELEVATION

1/4" = 1'-0"

PRELIMINARY
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LICENSED ARCHITECT
CHERYL T. SMITH
No. C-14328
4-30-17
RENEWAL DATE
STATE OF CALIFORNIA

NO.	DATE	Designer	REVISION	Author	Checker	Approver	BY	APVD
				MWA	MWA	GR	DW	GREEN

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT
SLUDGE DEWATERING AND LOADOUT FACILITY

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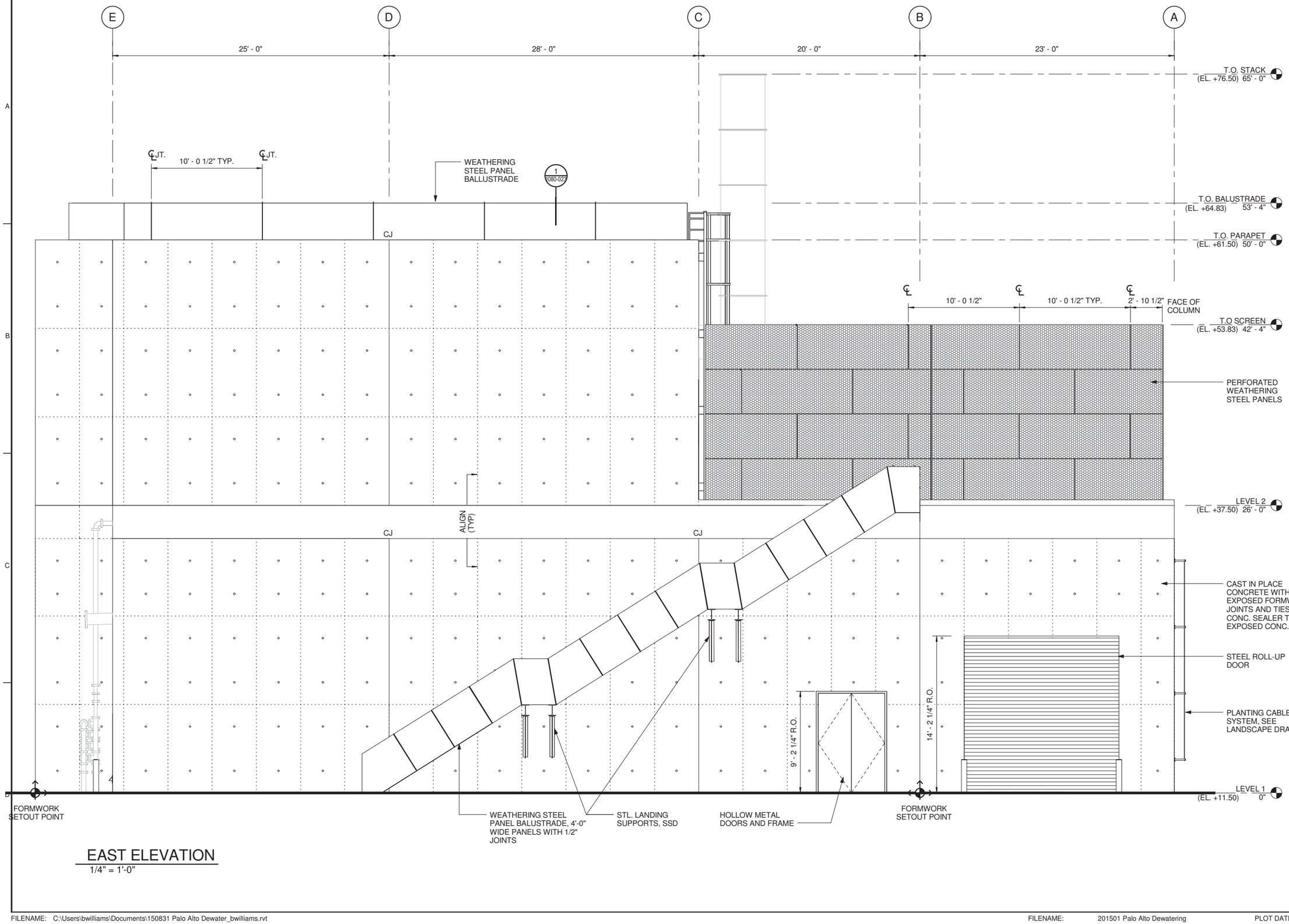
mwa architects

SLUDGE DEWATERING AND LOADOUT FACILITY
ARCHITECTURE
WEST ELEVATION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	201501
DWG	260-A-3001
SHEET	105



EAST ELEVATION

1/4" = 1'-0"

LICENSED ARCHITECT
ORSTON T. SMITH
No. C-14328
4-30-17
RENEWAL DATE
STATE OF CALIFORNIA

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Designer	MWA	Author MWA Checker GR Approver		DW GREEN

CITY OF PALO ALTO
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REGIONAL WATER QUALITY CONTROL PLANT
SLUDGE DEWATERING AND LOADOUT FACILITY

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SLUDGE DEWATERING AND LOADOUT FACILITY
ARCHITECTURE
EAST ELEVATION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	201501
DWG	260-A-3002
SHEET	106

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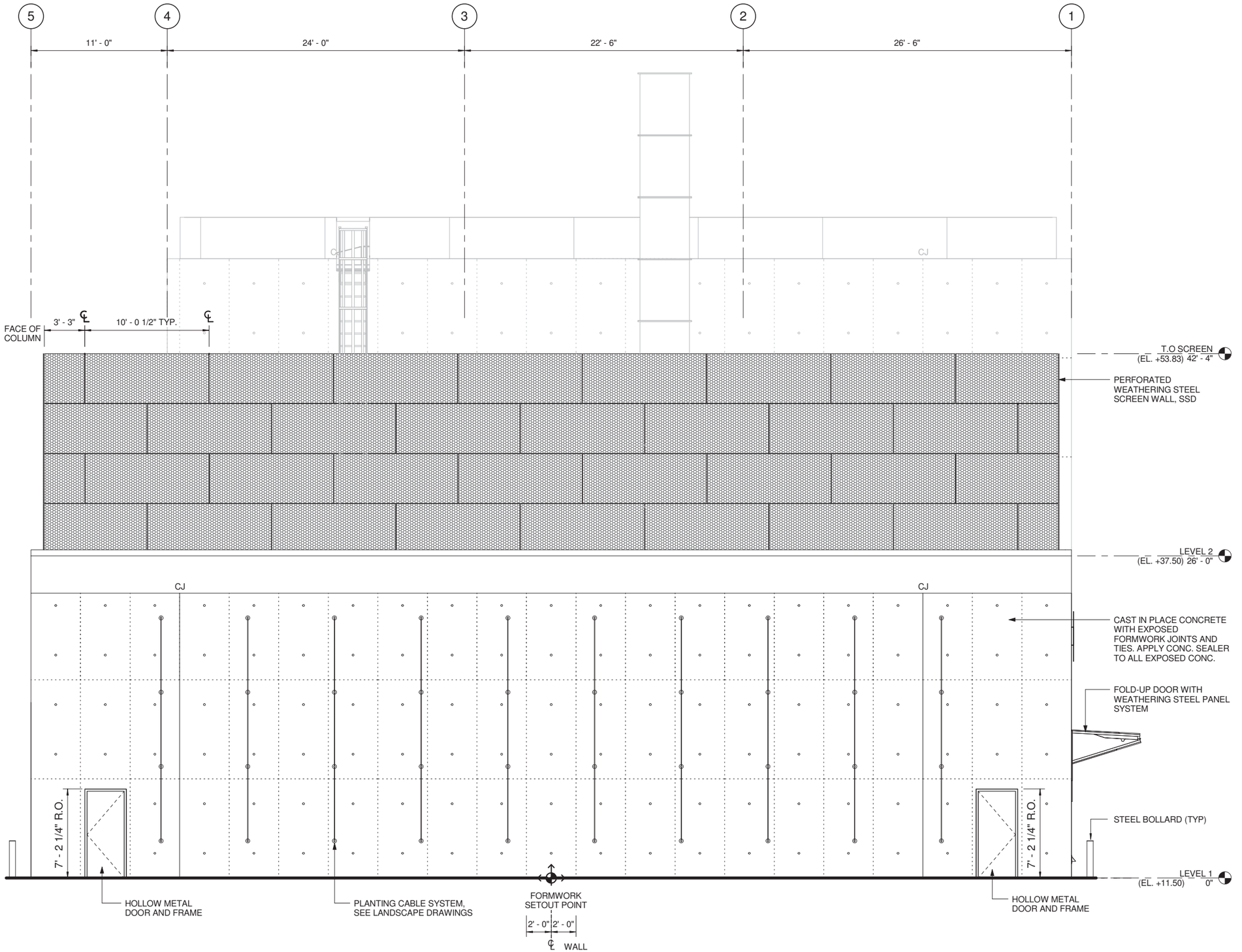

NORTH ELEVATION

1/4" = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

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4-30-17
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STATE OF CALIFORNIA

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CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT

SLUDGE DEWATERING AND LOADOUT FACILITY

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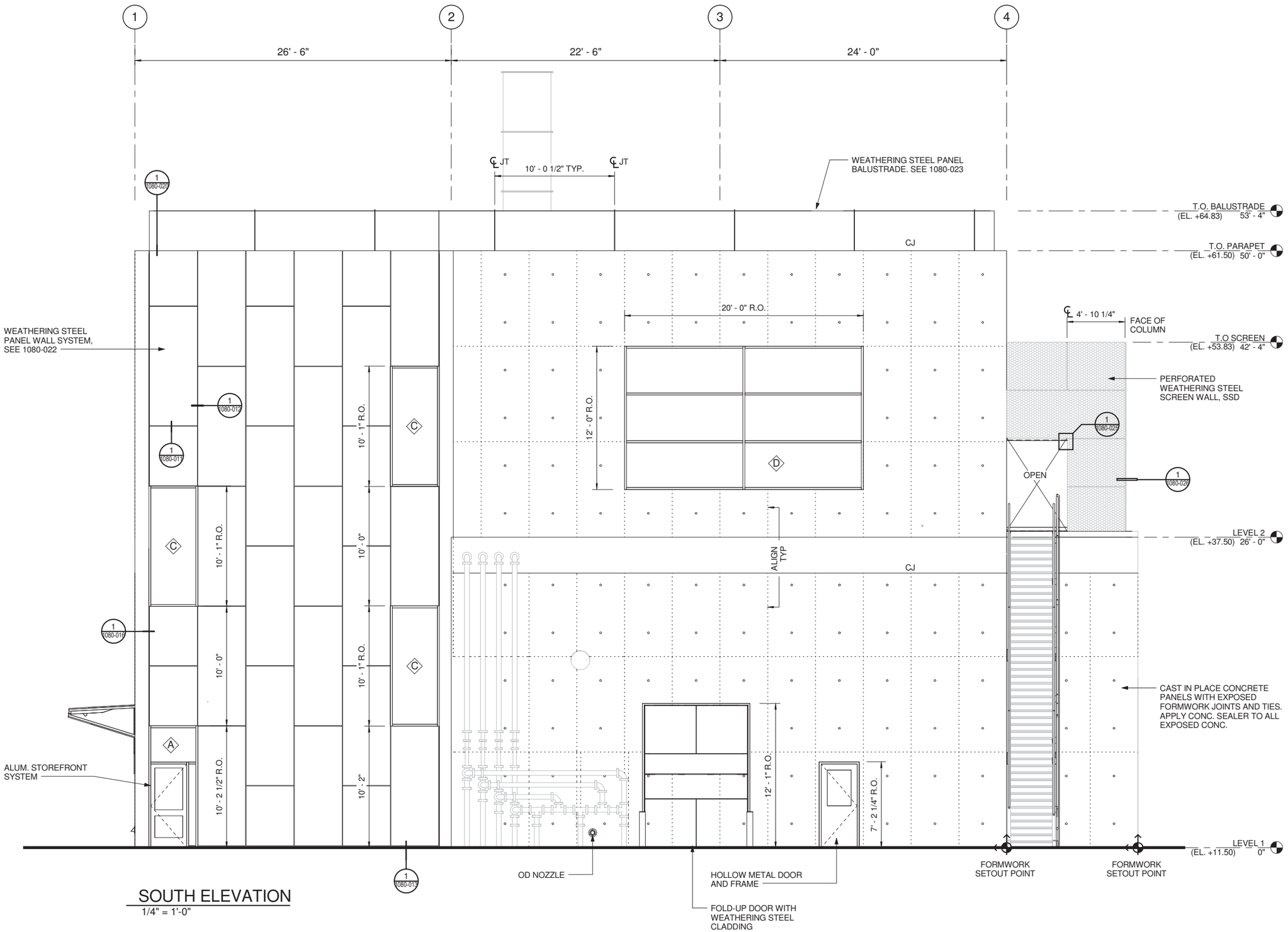
SLUDGE DEWATERING AND LOADOUT FACILITY

ARCHITECTURE
NORTH ELEVATION

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	201501
DWG	260-A-3003
SHEET	107



SOUTH ELEVATION

1/4" = 1'-0"

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ORSTON T. SMITH
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4-30-17
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STATE OF CALIFORNIA

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REVISION

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT

SLUDGE DEWATERING AND LOADOUT FACILITY

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SLUDGE DEWATERING AND LOADOUT FACILITY

ARCHITECTURE
SOUTH ELEVATION

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	201501
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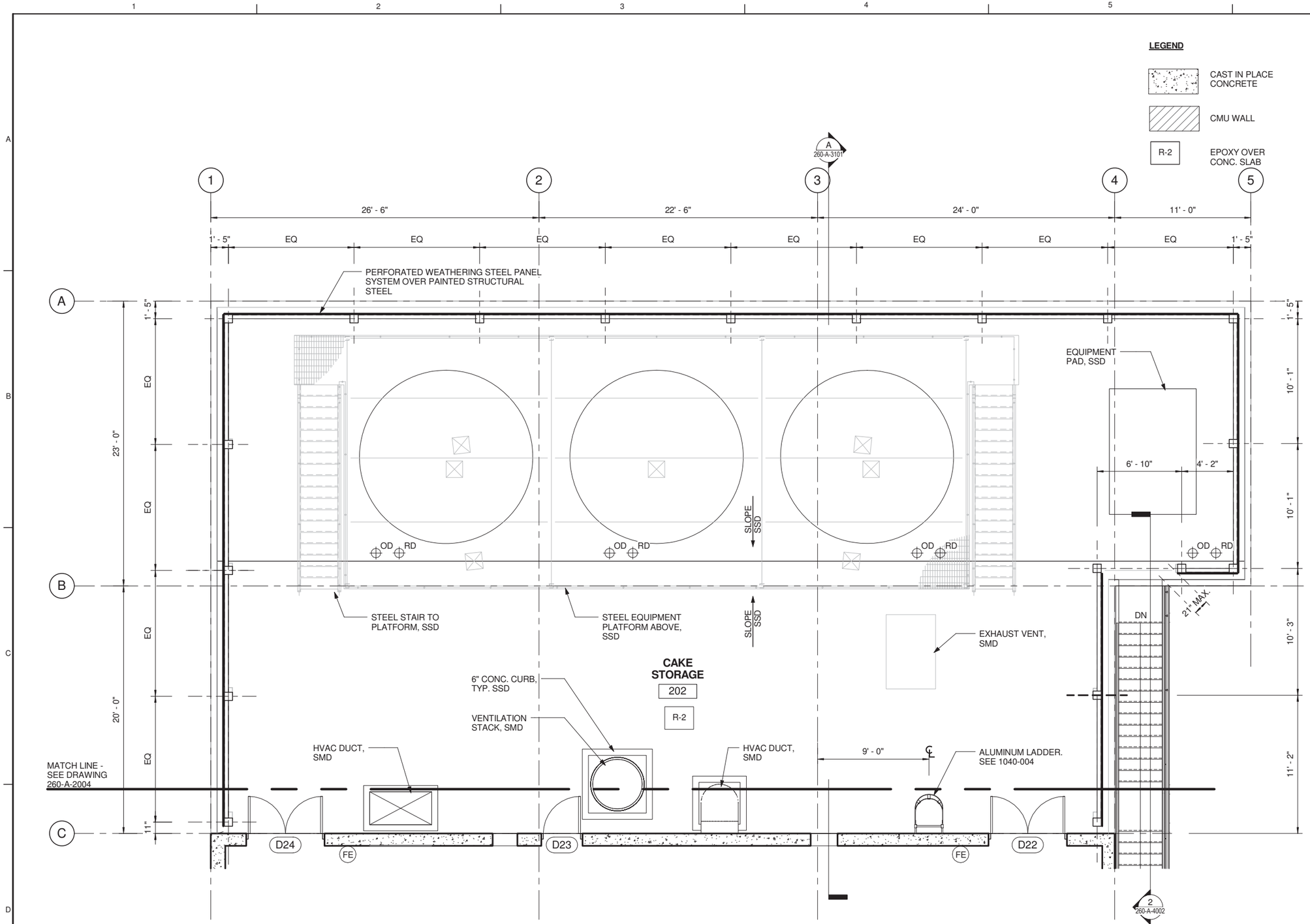
SHEET	108



SECOND FLOOR PLAN - AREA A (ROOF PLAN)

1/4" = 1'-0"

N

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LICENSED ARCHITECT ORSTON T. SMITH No. C-14328 4-30-17 RENEWAL DATE STATE OF CALIFORNIA

NO.	DATE	REVISION	BY	APVD
Designer	MWA	Author	MWA	Checker	GR	Approver	DW GREEN

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT

SLUDGE DEWATERING AND LOADOUT FACILITY

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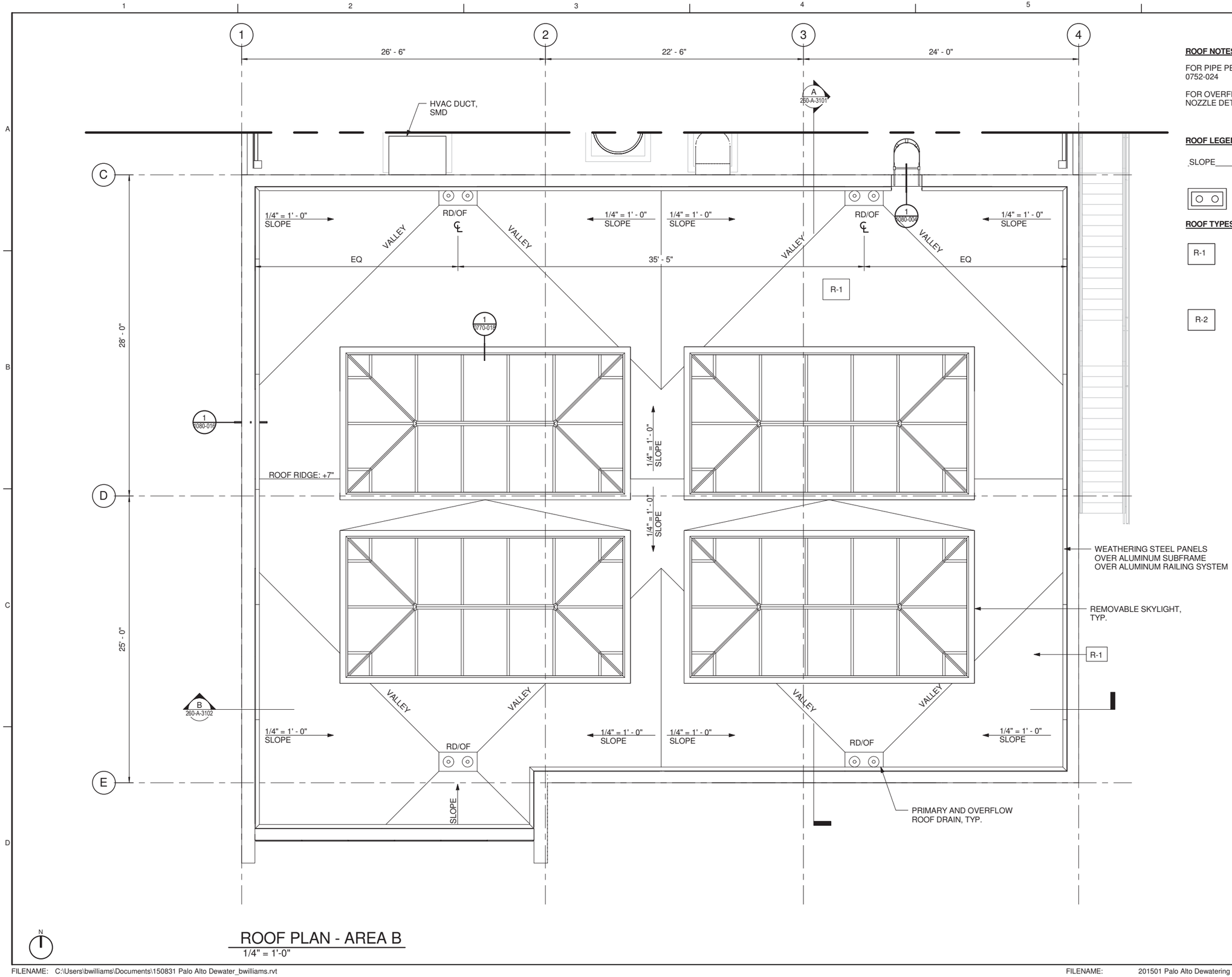
SLUDGE DEWATERING AND LOADOUT FACILITY

ARCHITECTURE
SECOND FLOOR PLAN AREA A

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	201501
DWG	260-A-2003
SHEET	99



ROOF PLAN - AREA B

1/4" = 1'-0"

ROOF NOTES:

FOR PIPE PENETRATION DETAIL SEE 0752-024

FOR OVERFLOW DOWNSPOUT NOZZLE DETAIL SEE 0752-009

ROOF LEGEND:

SLOPE ——→ ROOF SLOPE DIRECTION

ROOF DRAIN AND OVERFLOW, SEE 0752-006

ROOF TYPES:

R-1 — BUILT-UP ROOFING OVER TAPERED COVER BOARD, 2" CONC. METAL DECK AND STEEL BEAMS, SEE SPECS

R-2 — EPOXY OVER CONC. SLAB

LICENSED ARCHITECT ORETON T. SMITH No. C-14328 4-30-17 RENEWAL DATE STATE OF CALIFORNIA

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REGIONAL WATER QUALITY CONTROL PLANT

SLUDGE DEWATERING AND LOADOUT FACILITY

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ARCHITECTURE
ROOF PLAN AREA B

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	201501
DWG	260-A-2006
SHEET	101

FILENAME: C:\Users\bwilliams\Documents\150831 Palo Alto Dewater_bwilliams.rvt

FILENAME: 201501 Palo Alto Dewatering

PLOT DATE & TIME: 11/10/2015 2:50:22 PM

CODE OVERVIEW

	PROJECT DESIGN	SUPPORTING CODES
OCCUPANCY	F-2	2013 CBC SECTION 306.3 - FACTORY INDUSTRIAL F-2 LOW HAZARD OCCUPANCY - FACTORY INDUSTRIAL USES THAT INVOLVE THE FABRICATION OR MANUFACTURING OF NON-COMBUSTIBLE MATERIALS WHICH DURING PACKAGING OR PROCESSING DO NOT INVOLVE A SIGNIFICANT FIRE-HAZARD. 2013 CBC SECTION 504.2.1 - AGGREGATE ACCESSORY OCCUPANCIES SHALL NOT OCCUPY MORE THAN 10 PERCENT OF THE BUILDING AREA OF THE STORY IN WHICH THEY ARE LOCATED.
FIRE SPRINKLER SYSTEM	FULLY SPRINKLERED FIRE EXTINGUISHERS TO BE PROVIDED IN ALL OCCUPANCIES AND LOCATIONS AS REQUIRED BY THE FIRE CODE.	2013 CBC SECTION 903.2 - NO REQUIREMENT LISTED FOR AUTOMATIC SPRINKLER SYSTEM FOR F-2 OCCUPANCY. 2013 CBC SECTION 906.1. CITY OF PALO ALTO CBC AMENDMENT DATED NOVEMBER 25, 2013
TYPE OF CONSTRUCTION	TYPE II-B, NON-RATED, NON-COMBUSTIBLE CONSTRUCTION GENERAL SUPERSTRUCTURE TO BE CONSTRUCTED OF CAST-IN-PLACE REINFORCED CONCRETE (PER STRUCTURAL), INCLUDING FLOORS, WALLS, AND BEAMS. ROOF CONSTRUCTION AT LOWER ROOF IS CONCRETE SLAB COVERED WITH EPOXY FINISH. UPPER ROOF IS STEEL BEAMS, STEEL DECK WITH CONCRETE TOPPING AND BUILT UP BITUMINOUS COVER. NON-LOAD BEARING LIGHTFRAME ELEMENTS SUCH AS FURRED WALLS TO BE CONSTRUCTED OF STEEL FRAMING AND CLAD WITH OTHER NON-COMBUSTIBLE MATERIALS. CLASS A ROOF COVERING EXTERIOR WALL FIRE RATING NOT REQUIRED	2013 CBC SECTION SEC. 603 2013 CBC TABLE 601: PRIMARY STRUCTURE AND BEARING WALLS: NO RATING REQUIRED NON-BEARING WALLS: NONE FLOOR CONSTRUCTION AND SECONDARY MEMBERS: NONE ROOF CONSTRUCTION AND SECONDARY MEMBERS: NONE NFPA 820 2013 CBC TABLE 602 - GREATER THAN 10 FEET TO LOT LINE.
BUILDING HEIGHTS AND AREAS	ACTUAL BUILDING AREA: 13,367 SF ACTUAL BUILDING HEIGHT: 50 FEET ACTUAL NUMBER OF STORIES ABOVE GRADE: 2	2013 CBC TABLE 503: ALLOWABLE BUILDING AREA: 23,000 SF/FLOOR 2013 CBC TABLE 503: MAXIMUM ALLOWABLE HEIGHT: 65 FEET (50 FEET PER PAMC) MAXIMUM NUMBER OF STORIES ABOVE GRADE: 3
FIRE-RATED CONSTRUCTION	COMPLY WITH THE FIRE-RESISTANCE RATING REQUIREMENTS AS SET FORTH BY THE APPLICABLE CODES.	2013 CBC TABLE 602 - FIRE RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE (FSD): FOR II-B CONSTRUCTION, WHEN: FSD > 30': NO FIRE RATING REQUIRED

LEGEND

OCCUPANT LOAD — EXIT — REMOTE POINT (BEGIN EGRESS)

PATH OF TRAVEL ••••••••

1 HR. RATED FIRE WALL – – – – – –

1 HR. RATED FLOOR

ROOM TAG

F-2	← OCCUPANCY CLASSIFICATION
B02	← ROOM NUMBER
34 OCCUPANTS	← NUMBER OF OCCUPANTS
334 SF	← SQUARE FOOTAGE

ACCESS MEANS OF EGRESS - CHAPTER 11

F-OCCUPANCY - NOT REQUIRED
CBC 1007.1, 11B-203.5: MACHINERY SPACES FREQUENTED ONLY BY SERVICE PERSONNEL FOR MAINTENANCE, REPAIR OR OCCASIONAL MONITORING OF EQUIPMENT. THESE SPACES INCLUDE ELEVATOR PITS, ELEVATOR PENTHOUSES, MECHANICAL, ELECTRICAL OR COMMUNICATIONS EQUIPMENT ROOMS, PIPING OR EQUIPMENT CATWALKS, WATER OR SEWAGE TREATMENT PUMP ROOMS AND STATIONS, AND OTHER SPACES NOT CUSTOMARILY OCCUPIED AND ACCESSED ONLY BY LADDERS, CATWALKS, CRAWL SPACES, OR VERY NARROW PASSAGEWAYS.

APPLICABLE CODES

- 2013 CALIFORNIA BUILDING CODE (CBC)
- 2013 CALIFORNIA FIRE CODE (CFC)
- 2013 CALIFORNIA PLUMBING CODE (CPC)
- 2013 CALIFORNIA ELECTRICAL CODE (CEC)
- 2013 CALIFORNIA ENERGY CODE
- 2013 CALIFORNIA GREEN BUILDING STANDARDS CODE
- 2013 NFPA 820
- PALO ALTO MUNICIPAL CODE (PAMC)

MEANS OF EGRESS EXITING SUMMARY AS DETERMINED BY OCCUPANCY

	TOTAL OCCUPIABLE BUILDNG AREA:	TOTAL CALCULATED OCCUPANT LOAD	MAX. TRAVEL DISTANCE OF COMMON PATH OF EGRESS (CBC TABLE 1014.3) (WITHOUT SPRINKLER)	MAXIMUM TRAVEL DISTANCE TO EXIT FROM REMOTE POINT (TABLE 1016.2) (WITHOUT SPRINKLER)	MIN. EGRESS STAIR WIDTH PER OCCUPANT LOAD (NOT TO BE LESS THAN 36") (SECS. 1005.3.1 AND 1009.4)	MIN. EGRESS WIDTH DOORS/CORRIDORS (DOORS NOT LESS THAN 32" CORR. NOT LESS THAN 44") (CBC TABLE 1018.2)	MAXIMUM OCCUPANT LOAD ALLOWING FOR ONLY ONE MEANS OF EGRESS (TWO EXITS REQUIRED WHERE OCCUPANT LOAD EXCEEDS THIS NUMBER) (TABLE 1015.1)	EXIT ACCESS DEAD END CORRIDORS (SEC. 1018.4) (WITHOUT SPRINKLER)
F-2	12,495 SF	129*	75 FEET	300 FEET	O.L. X .2 71 X .2 = 25.8"	NO CORRIDORS IN BUILDING DOORS: 32"	49	50 FEET

**ACTUAL NUMBER OF OCCUPANTS AT ANY GIVEN TIME WILL BE LESS THAN 49. CBC 2013 SECTION 1004.1.2, EXCEPTION*

PLUMBING FIXTURE SCHEDULE

ITEM	DESCRIPTION	D	V	W1	HW	COUNT	FLOW
S-1	SINK	1 1/2"	1 1/2"	1/2"	1/2"	1	2.5
EE-1	EYE WASH FOLD DOWN	-	-	3/4"	-	1	3
SSH-1	SAFETY SHOWER\EYEWASH	-	-	1 1/2"	-	1	30
	TOTAL					3	35.5

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	MWA	Author	MWA	GR		DW	GREEN

CITY OF PALO ALTO
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CODE REVIEW GENERAL

VERIFY SCALE
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0 1"

DATE	NOVEMBER 2015
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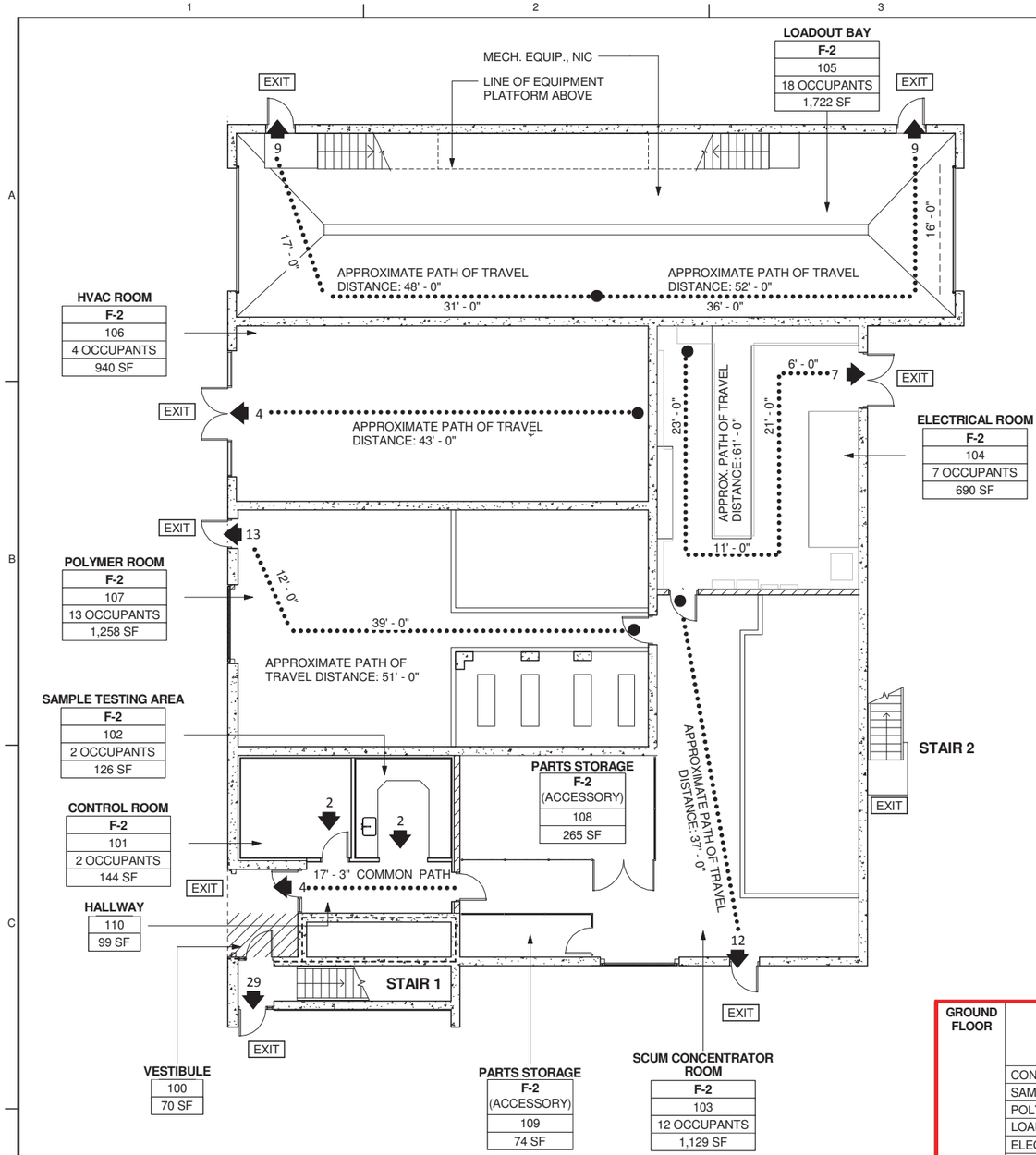
SHEET	94



GROUND FLOOR CODE REVIEW PLAN

1/8" = 1'-0"

NOTES:

1. PER 2013 CBC SECTION 505.3 EQUIPMENT PLATFORMS:

   EQUIPMENT PLATFORMS IN BUILDINGS SHALL NOT BE CONSIDERED AS A PORTION OF THE FLOOR BELOW. SUCH EQUIPMENT PLATFORMS SHALL NOT CONTRIBUTE TO EITHER THE BUILDING AREA OR THE NUMBER OF STORIES AS REGULATED BY SECTION 503.1. THE AREA OF THE EQUIPMENT PLATFORM SHALL NOT BE INCLUDED IN DETERMINING THE FIRE AREA IN ACCORDANCE WITH SECTION 903. EQUIPMENT PLATFORMS SHALL NOT BE PART OF ANY MEZZANINE AND SUCH PLATFORMS AND WALKWAYS, STAIRS, ALTERNATING TREAD DEVICES AND LADDERS PROVIDING ACCESS TO AN EQUIPMENT PLATFORM SHALL NOT SERVE AS A PART OF THE MEANS OF EGRESS FROM THE BUILDING.

LEGEND

OCCUPANT LOAD	EXIT	REMOTE POINT (BEGIN EGRESS)	ROOM TAG: F-2 / B02 / 34 OCCUPANTS / 334 SF
PATH OF TRAVEL	••••••••		
1 HR. RATED FIRE WALL	------		
1 HR. RATED FLOOR	▨		

ROOM TAG: F-2 ← OCCUPANCY CLASSIFICATION; B02 ← ROOM NUMBER; 34 OCCUPANTS ← NUMBER OF OCCUPANTS; 334 SF ← SQUARE FOOTAGE

GROUND FLOOR	SPACE	SQUARE FOOTAGE	OCCUPANCY: OCCUPANCY TYPE (CHAPTER 3) GROUP	CODE REFERENCE	OCCUPANT LOAD CALCULATION (TABLE 1004.1.2) FUNCTION OF SPACE	OCCUPANT LOAD FACTOR	OCCUPANT LOAD	EGRESS: NUMBER OF EXIT DOORS REQUIRED (TABLE 1015.1)	MIN. WIDTH OF EGRESS COMPONANTS
	CONTROL ROOM 101	144	GROUP F-2	SEC. 306.3	INDUSTRIAL AREA	100	2	1	DOOR WIDTH CLEARANCE: 32" (SEC. 1008.1.1) DESIGNED WIDTH: 36"
	SAMPLE TESTING AREA 102	126				100	2	1	
	POLYMER ROOM 107	1,258				100	13	1	
	LOADOUT BAY 105	1,722				100	18	1	
	ELECTRICAL ROOM 104	690				100	7	2*	
	SCUM CONCENTRATOR ROOM 103	1,129				100	12	1	
	HVAC ROOM 106	940			MECH. EQUIP. ROOM	300	4	1	STAIR CLEAR WIDTH: 36" (SECS. 1005.3.1 AND 1009.4) DESIGNED WIDTH: 36"
	PARTS STORAGE 108	265		SEC. 311, GROUP S ACCESSORY SEC. 508.2.1	NA			NA	
	PARTS STORAGE 109	74			NA			NA	
	VESTIBULE 100	70	NA		NA			NA	
	HALLWAY 110	99	NA		NA			NA	
	STAIR 1	255	NA		NA			NA	
	TOTAL:	**6,772**					**58****		

** 2 EXITS REQUIRED PER NEC REQUIREMENTS*

*** ACTUAL NUMBER OF OCCUPANTS AT ANY GIVEN TIME WILL BE LESS THAN 49 (CBC 2013 SECTION 1004.1.2 EXCEPTION)*

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ARCHITECTURE
CODE REVIEW GROUND FLOOR PLAN

VERIFY SCALE
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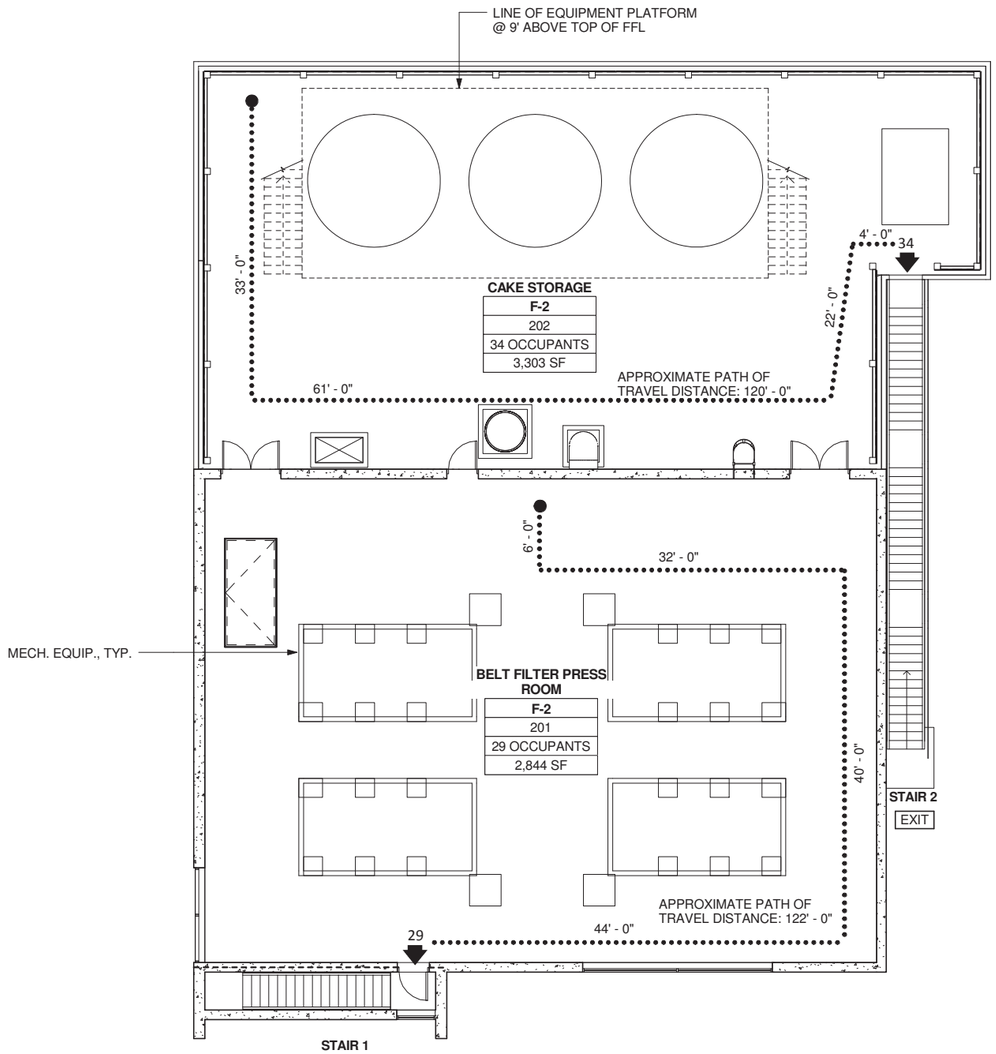
SHEET	95



SECOND FLOOR CODE REVIEW PLAN

1/8" = 1'-0"

NOTES:

1. PER 2013 CBC SECTION 505.3 EQUIPMENT PLATFORMS:

   EQUIPMENT PLATFORMS IN BUILDINGS SHALL NOT BE CONSIDERED AS A PORTION OF THE FLOOR BELOW. SUCH EQUIPMENT PLATFORMS SHALL NOT CONTRIBUTE TO EITHER THE BUILDING AREA OR THE NUMBER OF STORIES AS REGULATED BY SECTION 503.1. THE AREA OF THE EQUIPMENT PLATFORM SHALL NOT BE INCLUDED IN DETERMINING THE FIRE AREA IN ACCORDANCE WITH SECTION 903. EQUIPMENT PLATFORMS SHALL NOT BE PART OF ANY MEZZANINE AND SUCH PLATFORMS AND WALKWAYS, STAIRS, ALTERNATING TREAD DEVICES AND LADDERS PROVIDING ACCESS TO AN EQUIPMENT PLATFORM SHALL NOT SERVE AS A PART OF THE MEANS OF EGRESS FROM THE BUILDING.

LEGEND

OCCUPANT LOAD	EXIT	REMOTE POINT (BEGIN EGRESS)	ROOM TAG
PATH OF TRAVEL	•••••••		
1 HR. RATED FIRE WALL	------		
1 HR. RATED FLOOR	▨		

ROOM TAG

F-2	← OCCUPANCY CLASSIFICATION
B02	← ROOM NUMBER
34 OCCUPANTS	← NUMBER OF OCCUPANTS
334 SF	← SQUARE FOOTAGE

SECOND FLOOR	SPACE	SQUARE FOOTAGE	OCCUPANCY: OCCUPANCY TYPE (CHAPTER 3) GROUP	CODE REFERENCE	OCCUPANT LOAD CALCULATION (TABLE 1004.1.2) FUNCTION OF SPACE	OCCUPANT LOAD FACTOR	OCCUPANT LOAD	EGRESS: NUMBER OF EXIT DOORS REQUIRED (TABLE 1015.1)	MIN. WIDTH OF EGRESS COMPONANTS
	BELT FILTER PRESS ROOM 201	2,844	GROUP F-2	SEC. 306.3	INDUSTRIAL AREA	100	29	1	DOOR WIDTH CLEARANCE: 32" (SEC. 1008.1.1) DESIGNED WIDTH: 36"
	CAKE STORAGE 202	3,303	GROUP F-2	SEC. 306.3	INDUSTRIAL AREA	100	34	1	
	STAIR 1	255	NA		NA			NA	
	TOTAL:	**6,147**					**63***		STAIR CLEAR WIDTH: 36" (SECS. 1005.3.1 AND 1009.4) DESIGNED WIDTH: 36"

** ACTUAL NUMBER OF OCCUPANTS AT ANY GIVEN TIME WILL BE LESS THAN 10 (CBC 2013 SECTION 1004.1.2 EXCEPTION)*

N

LICENSED ARCHITECT — ORIETON T. SMITH — No. C-14328 — 4-30-17 — RENEWAL DATE — STATE OF CALIFORNIA

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		MWA	MWA			BY	DW GREEN

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CH2MHILL mua architects

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CODE REVIEW SECOND FLOOR PLAN

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

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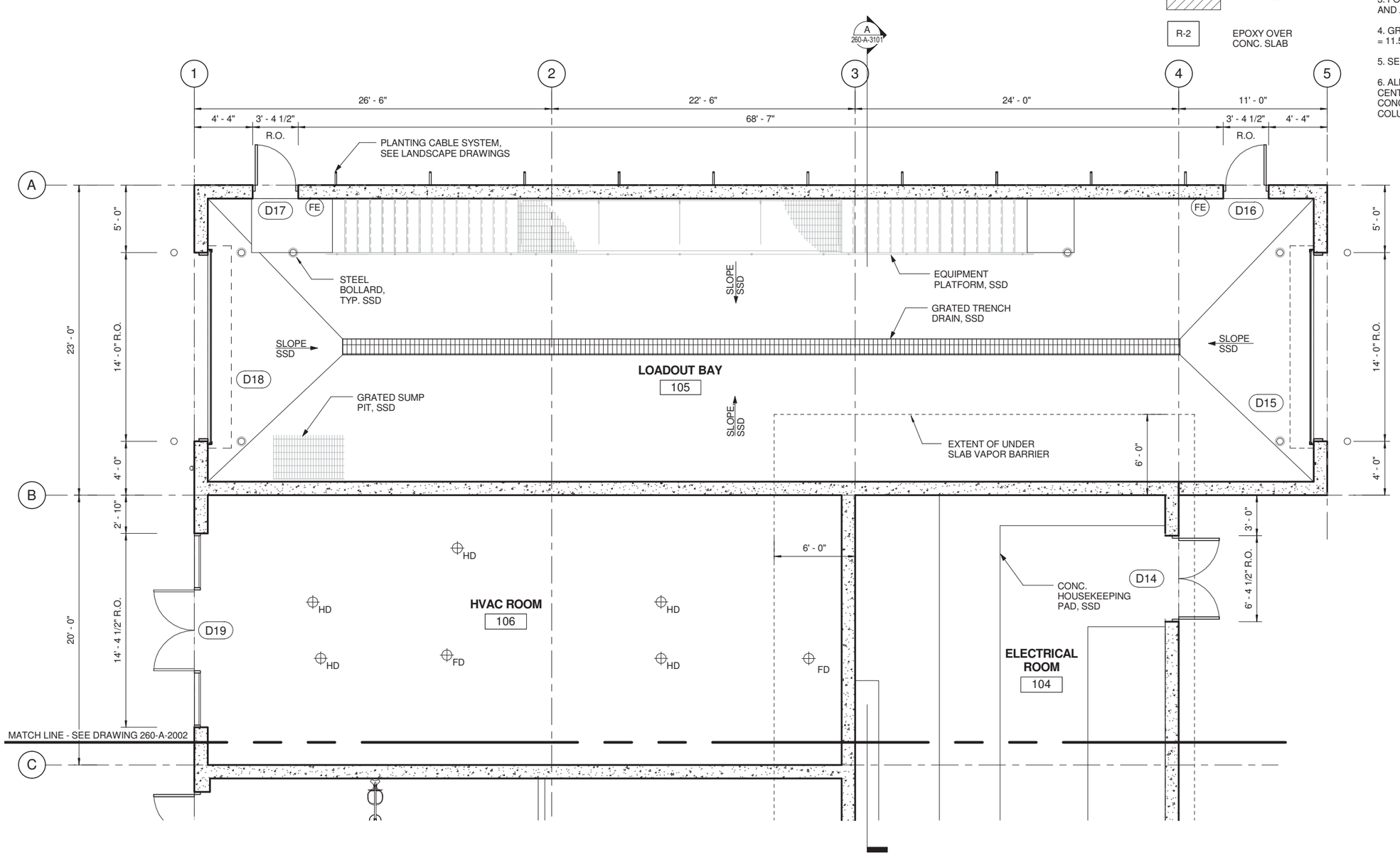
DWG	260-A-1003
SHEET	96



GROUND FLOOR PLAN - AREA A

1/4" = 1'-0"

LEGEND

- CAST IN PLACE CONCRETE
- CMU WALL
- R-2 — EPOXY OVER CONC. SLAB

SHEET NOTES:

1. FOR ADDITIONAL NOTES AND DIMENSIONS, SEE A-2002
2. FOR REFLECTED CEILING PLANS SEE A-2007, A-2008, AND A-2009.
3. FOR SCHEDULES SEE A-6001 AND A-6002.
4. GROUND FLOOR FF ELEVATION = 11.50
5. SEE A-5001 FOR WALL TYPES
6. ALL DIMENSIONS ARE TO CENTER OF STUD, FACE OF CONCRETE, OR CENTER OF COLUMN, UON

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GROUND FLOOR PLAN AREA A

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	201501
DWG	260-A-2001
SHEET	97

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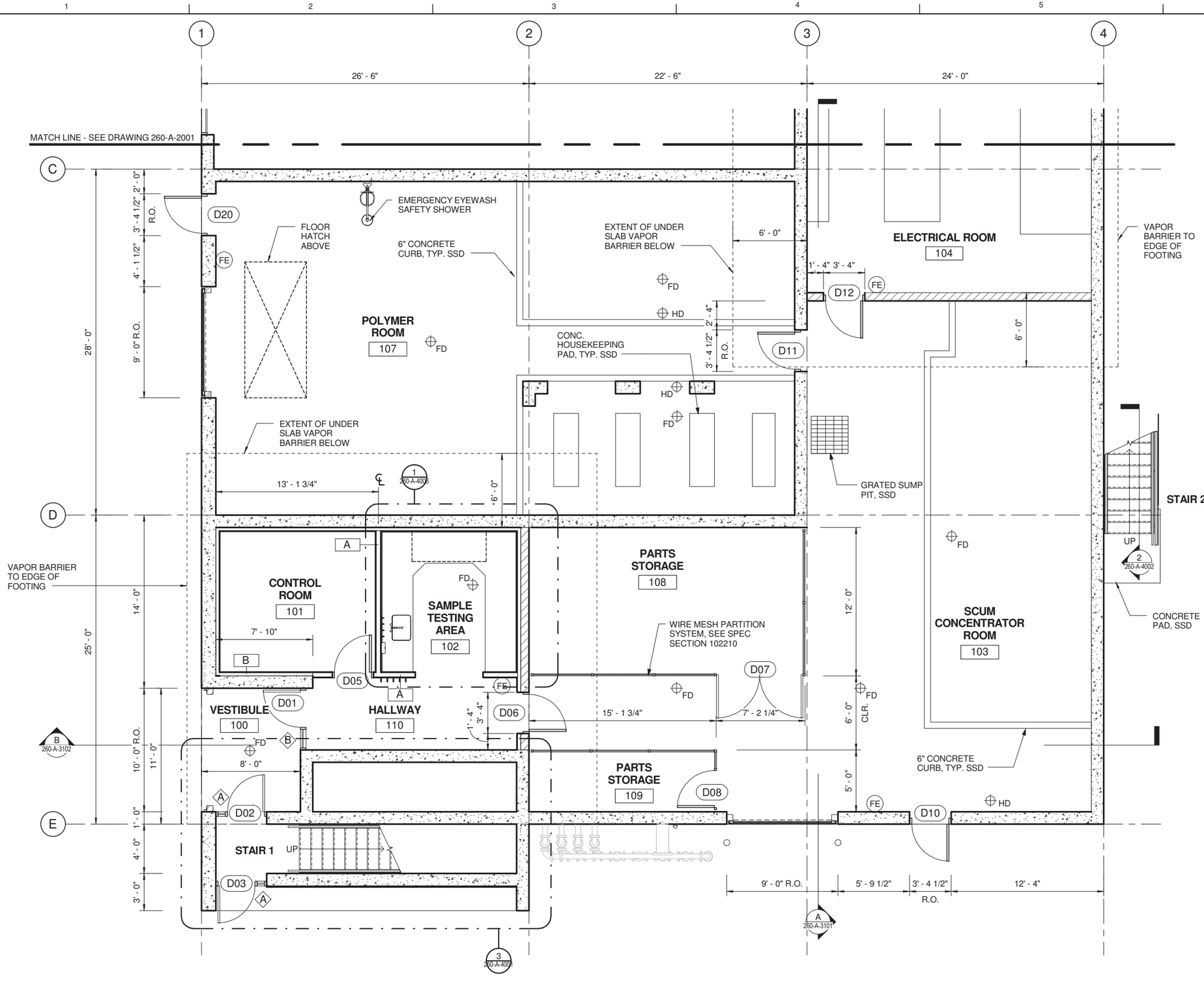

GROUND FLOOR PLAN - AREA B

1/4" = 1'-0"

SHEET NOTES:

1. FOR ADDITIONAL NOTES AND DIMENSIONS, SEE A-2001.
2. FOR REFLECTED CEILING PLANS SEE A-2007, A-2008, AND A-2009.
3. FOR SCHEDULES SEE A-6001 AND A-6002.
4. GROUND FLOOR FF ELEVATION = 11.50
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6. ALL DIMENSIONS ARE TO CENTER OF STUD, FACE OF CONCRETE, OR CENTER OF COLUMN, UON

LEGEND

- CAST IN PLACE CONCRETE
- CMU WALL
- R-2 — EPOXY OVER CONC. SLAB

LICENSED ARCHITECT — ORETON T. SMITH — No. C-14328 — 4-30-17 — RENEWAL DATE — STATE OF CALIFORNIA

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GROUND FLOOR PLAN AREA B

VERIFY SCALE
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0 1"

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PROJ	201501
DWG	260-A-2002
SHEET	98

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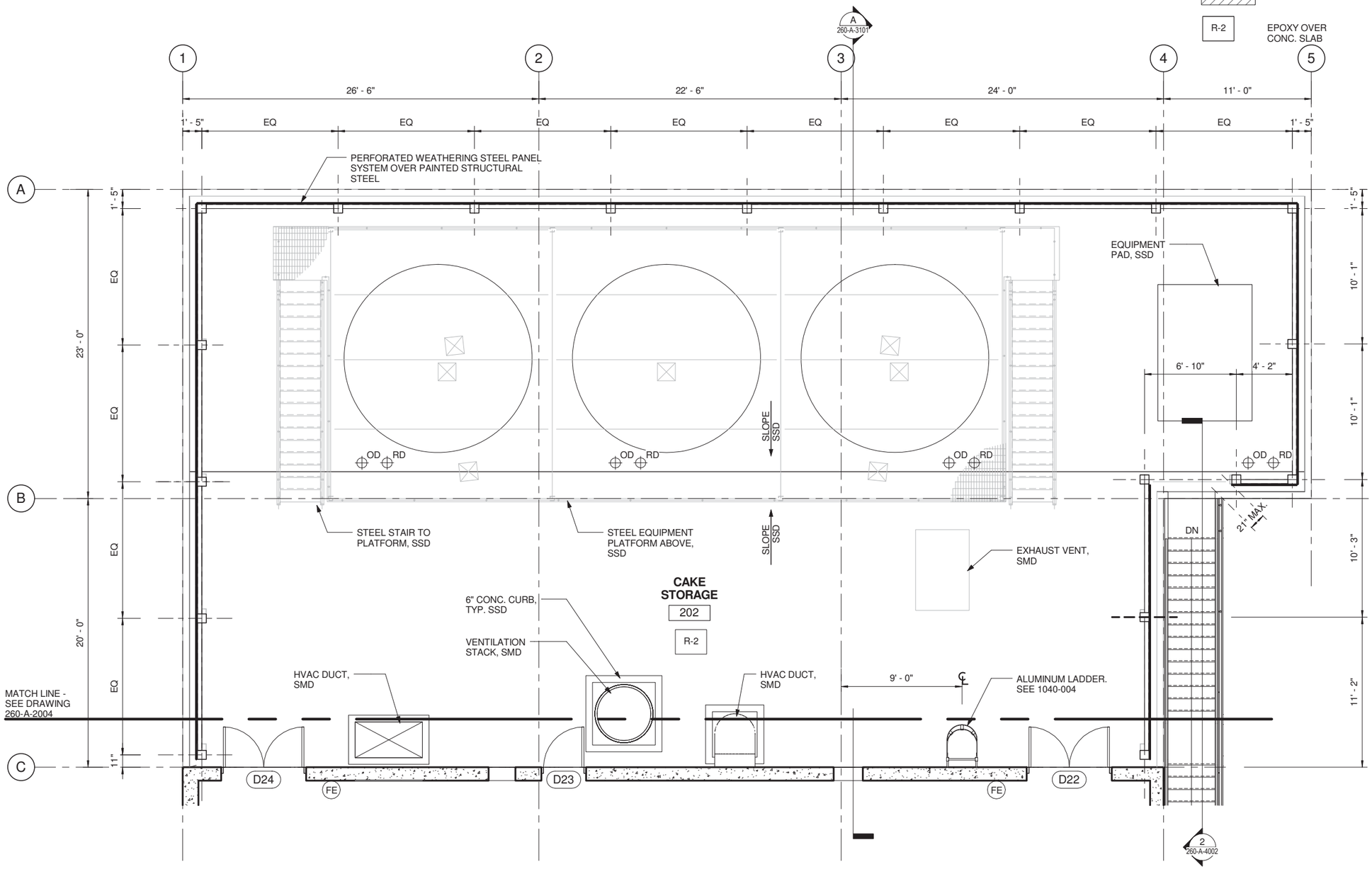

SECOND FLOOR PLAN - AREA A

1/4" = 1'-0"

N

LEGEND

- CAST IN PLACE CONCRETE
- CMU WALL
- R-2 — EPOXY OVER CONC. SLAB

SHEET NOTES:

1. FOR ADDITIONAL NOTES AND DIMENSIONS, SEE A-2001.
2. FOR REFLECTED CEILING PLANS SEE A-2007, A-2008, AND A-2009.
3. FOR SCHEDULES SEE A-6001 AND A-6002.
4. GROUND FLOOR FF ELEVATION = 11.50
5. SEE A-5001 FOR WALL TYPES
6. ALL DIMENSIONS ARE TO CENTER OF STUD, FACE OF CONCRETE, OR CENTER OF COLUMN, UON

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SECOND FLOOR PLAN AREA A

VERIFY SCALE

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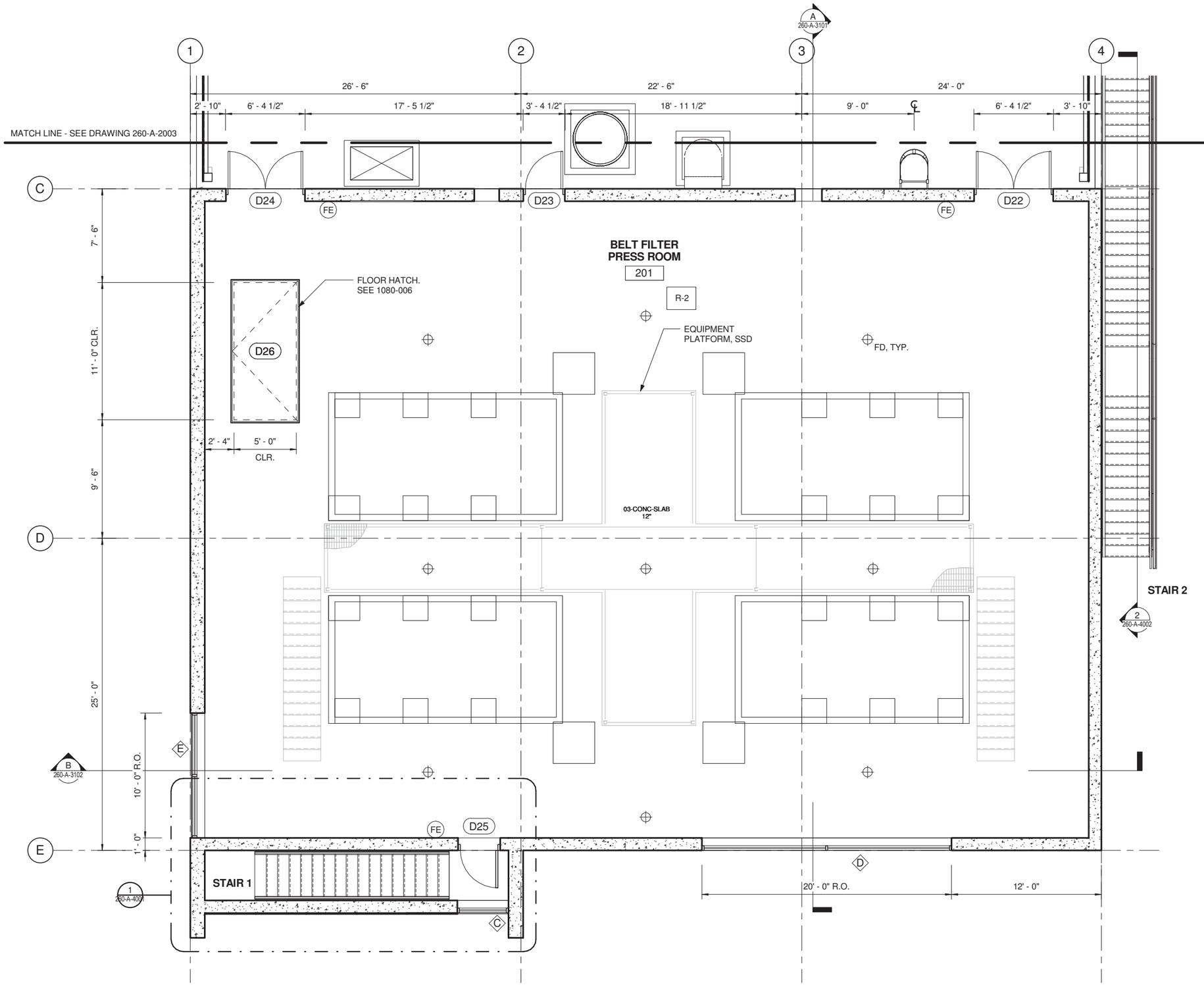
SHEET	99



SHEET NOTES:

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5. SEE A-5001 FOR WALL TYPES
6. ALL DIMENSIONS ARE TO CENTER OF STUD, FACE OF CONCRETE, OR CENTER OF COLUMN, UON

LEGEND

- CAST IN PLACE CONCRETE
- CMU WALL
- R-2 — EPOXY OVER CONC. SLAB

SECOND FLOOR PLAN - AREA B

1/4" = 1'-0"

LICENSED ARCHITECT
ORETON Y. SMITH
No. C-14328
4-30-17
RENEWAL DATE
STATE OF CALIFORNIA

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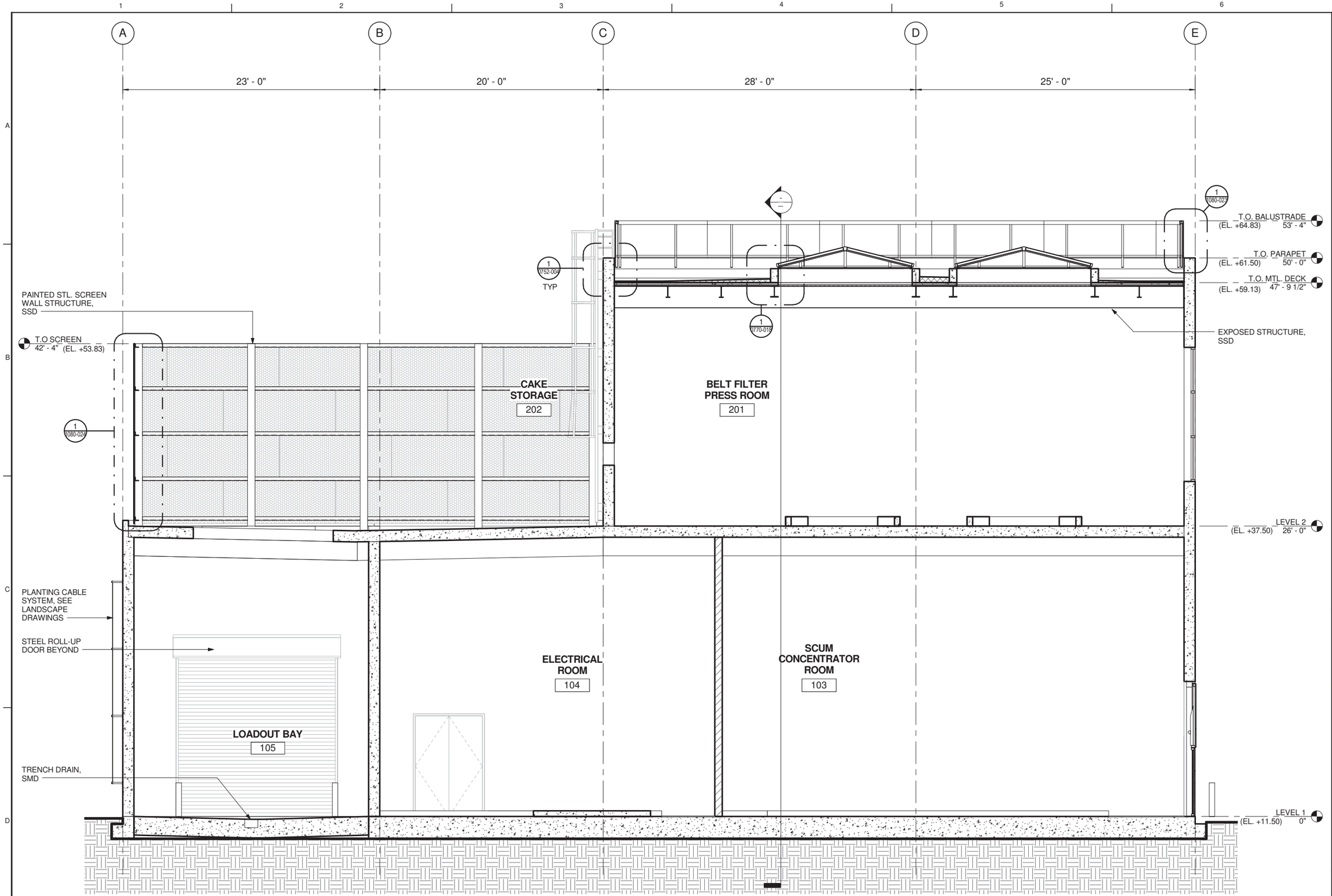
SECOND FLOOR PLAN AREA B

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	201501
DWG	260-A-2004
SHEET	100



BUILDING SECTION A

1/4" = 1'-0"

LICENSED ARCHITECT
ORIN T. SMITH
No. C-14328
4-30-17
RENEWAL DATE
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		XXX YYY		

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BUILDING SECTION A

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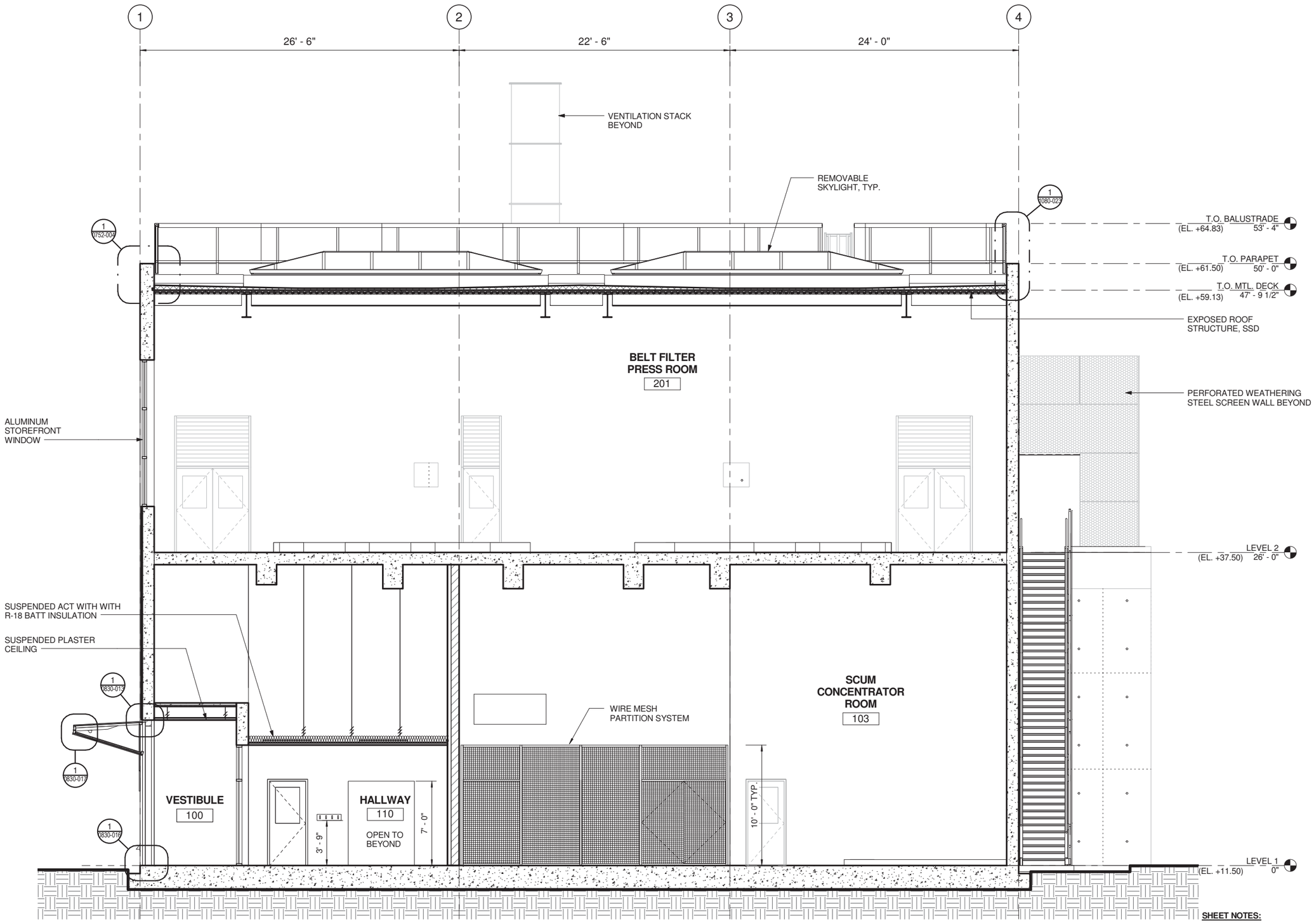

SHEET NOTES:

1. FOR ADDITIONAL NOTES AND DIMENSIONS, SEE A-3101.

BUILDING SECTION B

1/4" = 1'-0"

LICENSED ARCHITECT
ORIETON T. SMITH
No. C-14328
4-30-17
RENEWAL DATE
STATE OF CALIFORNIA

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ARCHITECTURE
BUILDING SECTION B

VERIFY SCALE
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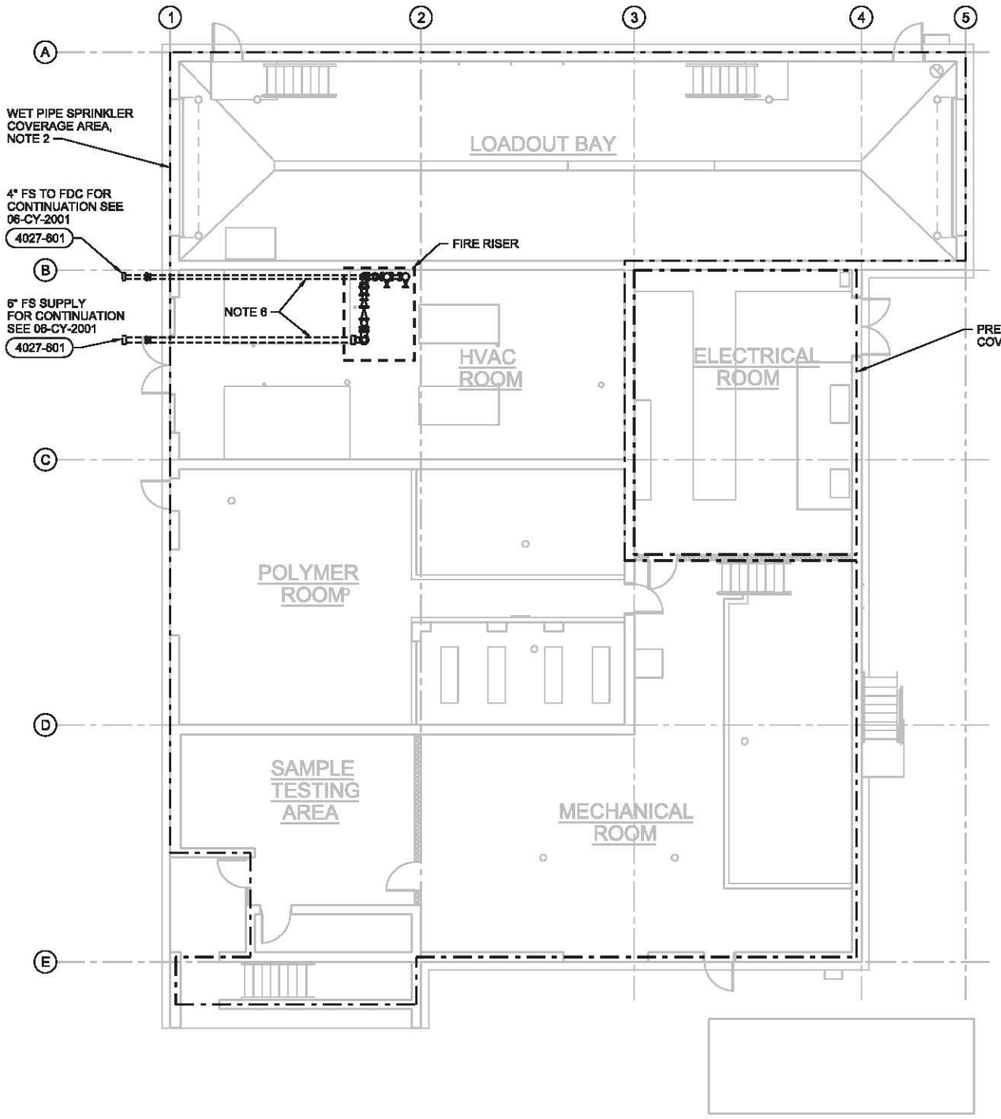
0 1"

DATE	NOVEMBER 2015
PROJ	201501
DWG	260-A-3102
SHEET	111

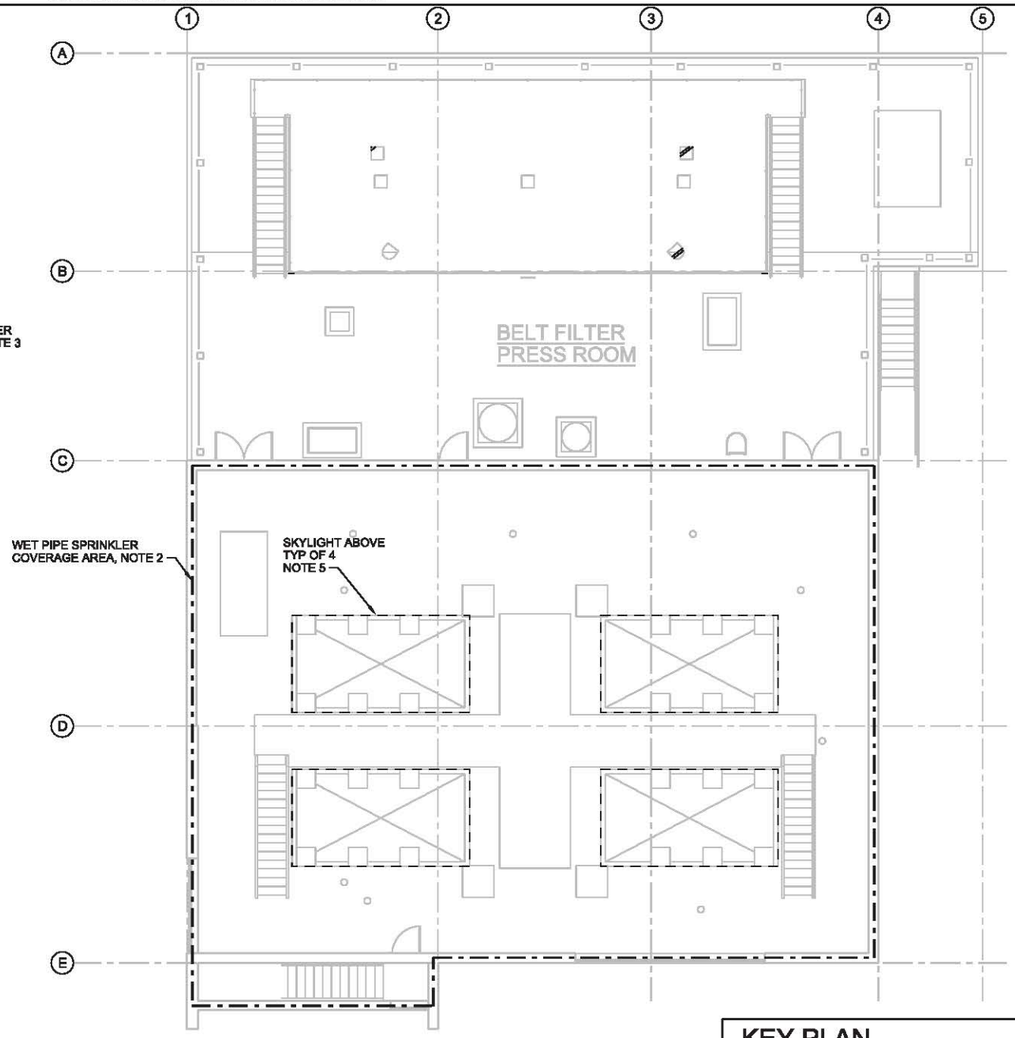
GENERAL SHEET NOTES

1. PROVIDE COVERAGE FOR ALL BUILDING AREAS. NO SPACE SHALL BE OMITTED FROM COVERAGE.
2. DESIGN WET PIPE SPRINKLER COVERAGE AREAS TO AN ORDINARY HAZARD, GROUP 1 WITH A DESIGN DENSITY OF 0.15 GPM PER SQUARE FOOT WITH AN OPERATIONAL AREA OF 1,500 SQUARE FEET.
3. DESIGN PRE ACTION SPRINKLER COVERAGE AREA FOR THE ELECTRICAL ROOM ONLY. TO AN ORDINARY HAZARD, GROUP 1 WITH A DESIGN DENSITY OF 0.15 GPM PER SQUARE FOOT WITH AN OPERATIONAL AREA TO COVER THE ENTIRE ROOM.
4. A HOSE STREAM ALLOWANCE OF 250 GPM SHALL BE ACCOUNTED FOR AS AN OUTSIDE HOSE STREAM AT NEAREST HYDRANT.
5. THE AREA BELOW EACH SKYLIGHT IS UTILIZED FOR EQUIPMENT REMOVAL. DO NOT ROUTE SPRINKLER PIPING THAT DOES NOT DIRECTLY SERVE THE SKYLIGHT AREA WITHIN THE AREAS INDICATED. THE FIRE SPRINKLERS WITHIN EACH SKYLIGHT SHALL BE SERVED BY A SINGLE BRANCH PIPE. THE SPRINKLER PIPING WITHIN THE SKYLIGHT AREA SHALL BE ATTACHED TO THE SKYLIGHT SO AS TO BE REMOVABLE WITH THE SKYLIGHT ASSEMBLY. ATTACH THE SKYLIGHT PIPING TO THE SYSTEM WITH A PIPE SEGMENT A MINIMUM 3 FEET LONG ATTACHED AT EACH END WITH MECHANICAL COUPLING TO ALLOW DISCONNECTION OF PIPING.
6. THE BELOW GRADE FIRE SERVICE PIPING FOR WATER SUPPLY AND FIRE DEPARTMENT CONNECTION THAT IS LOCATED UNDER THE BUILDING SHALL BE OF SEAMLESS CONSTRUCTION. NO MECHANICAL JOINTS ARE ALLOWED.



PLANT TRUE

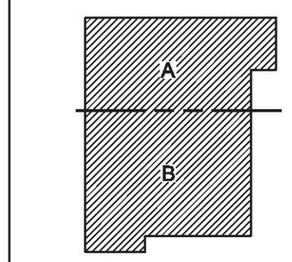
GROUND FLOOR PLAN
1/8"=1'-0"



PLANT TRUE

SECOND FLOOR PLAN
1/8"=1'-0"

KEY PLAN



REGISTERED PROFESSIONAL ENGINEER PATRICK R. RAUSCH No. 34000 Exp. 12-31-15 MECHANICAL STATE OF CALIFORNIA

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DATE	DSGN	REVISION	CHK	APVD	BY	APVD
		N FORESTER	S HOSTETLER	DR	PR RAUSCH		DW GREEN

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT
SLUDGE DEWATERING AND LOADOUT FACILITY

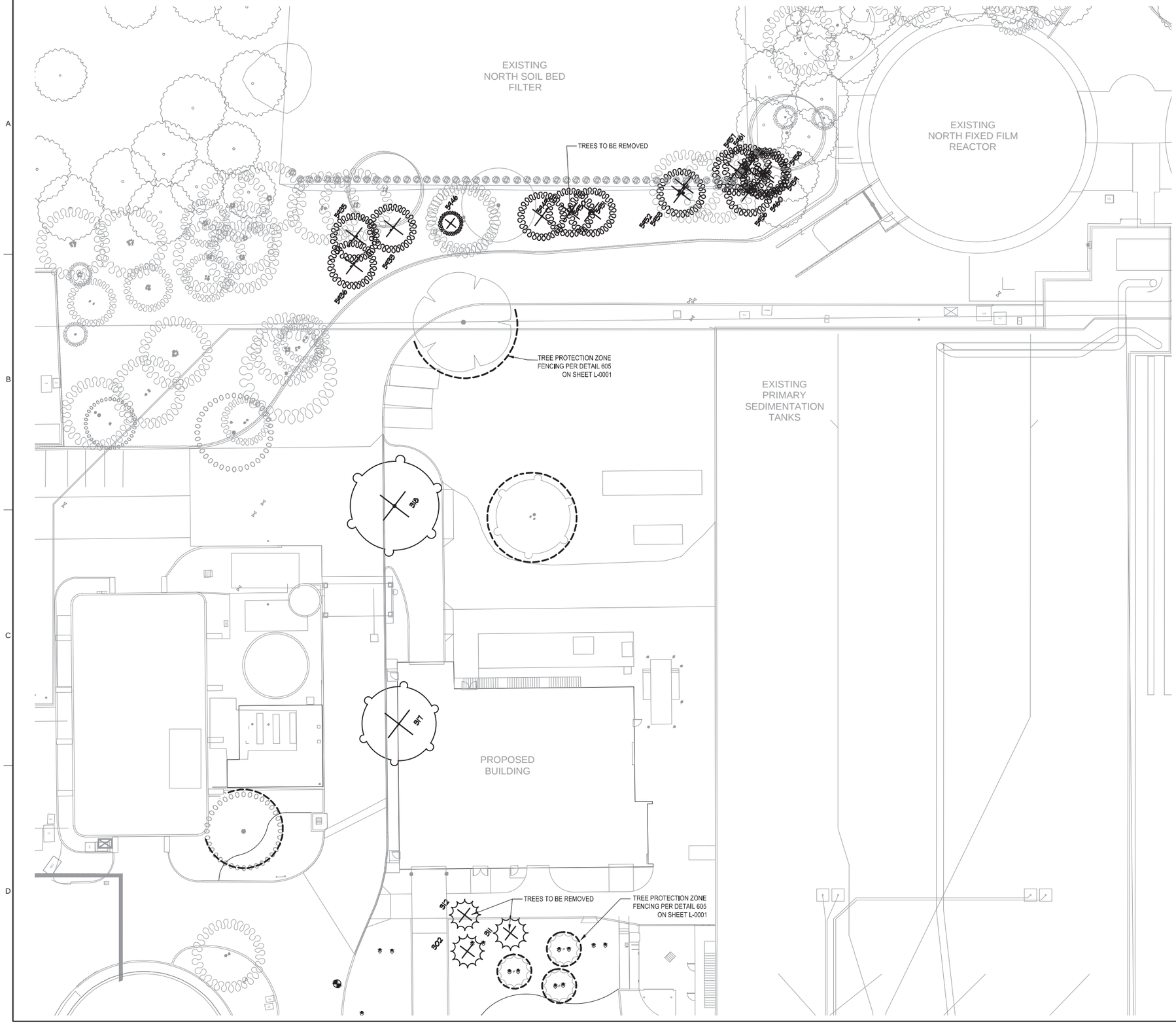
CH2MHILL.

SLUDGE DEWATERING AND LOADOUT FACILITY
FIRE PROTECTION OVERALL FLOOR PLANS

3/16"=1'-0"
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	658394
DWG	260-F-2000
SHEET	184

FILENAME: 260-F-2000_658394.dgn PLOT DATE: 2015\11\10 PLOT TIME: 3:31:21 PM



TREE REMOVAL

THE FOLLOWING TREES ARE TO BE REMOVED DURING THIS PROJECT AND NEW SCREEN TREES INSTALLED PER PLANTING PLAN L-3002 IN ACCORDANCE THE THE BAYLANDS MASTER PLAN REQUIREMENTS TO SCREEN THE FACILITIES.

TREE NO.	TREE
302	SEQUOIA SEMPERVIRENS
311	SEQUOIA SEMPERVIRENS
312	SEQUOIA SEMPERVIRENS
317	EUCALYPTUS CAMALDULENSIS
318	EUCALYPTUS CAMALDULENSIS
5933	MYOPORUM LAETUM
5935	MYOPORUM LAETUM
5936	MYOPORUM LAETUM
5946	MYOPORUM LAETUM
5949	MYOPORUM LAETUM
5950	MYOPORUM LAETUM
5951	MYOPORUM LAETUM
5952	MYOPORUM LAETUM
5953	MYOPORUM LAETUM
5956	MYOPORUM LAETUM
5957	MYOPORUM LAETUM
5958	MYOPORUM LAETUM
5959	MYOPORUM LAETUM

LICENSED LANDSCAPE ARCHITECT
ROBERT J. NORBUTAS JR.
No.5595
Signature
Exp. 11/30/16
STATE OF CALIFORNIA

PRELIMINARY
NOT FOR
CONSTRUCTION

NO.	DATE	REVISION	DR	CHK	APVD
DSGN	RJN		RJN	PJS	DW GREEN
				BY	APVD

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT

SLUDGE DEWATERING AND LOADOUT FACILITY

CH2MHILL

SLUDGE DEWATERING AND LOADOUT FACILITY

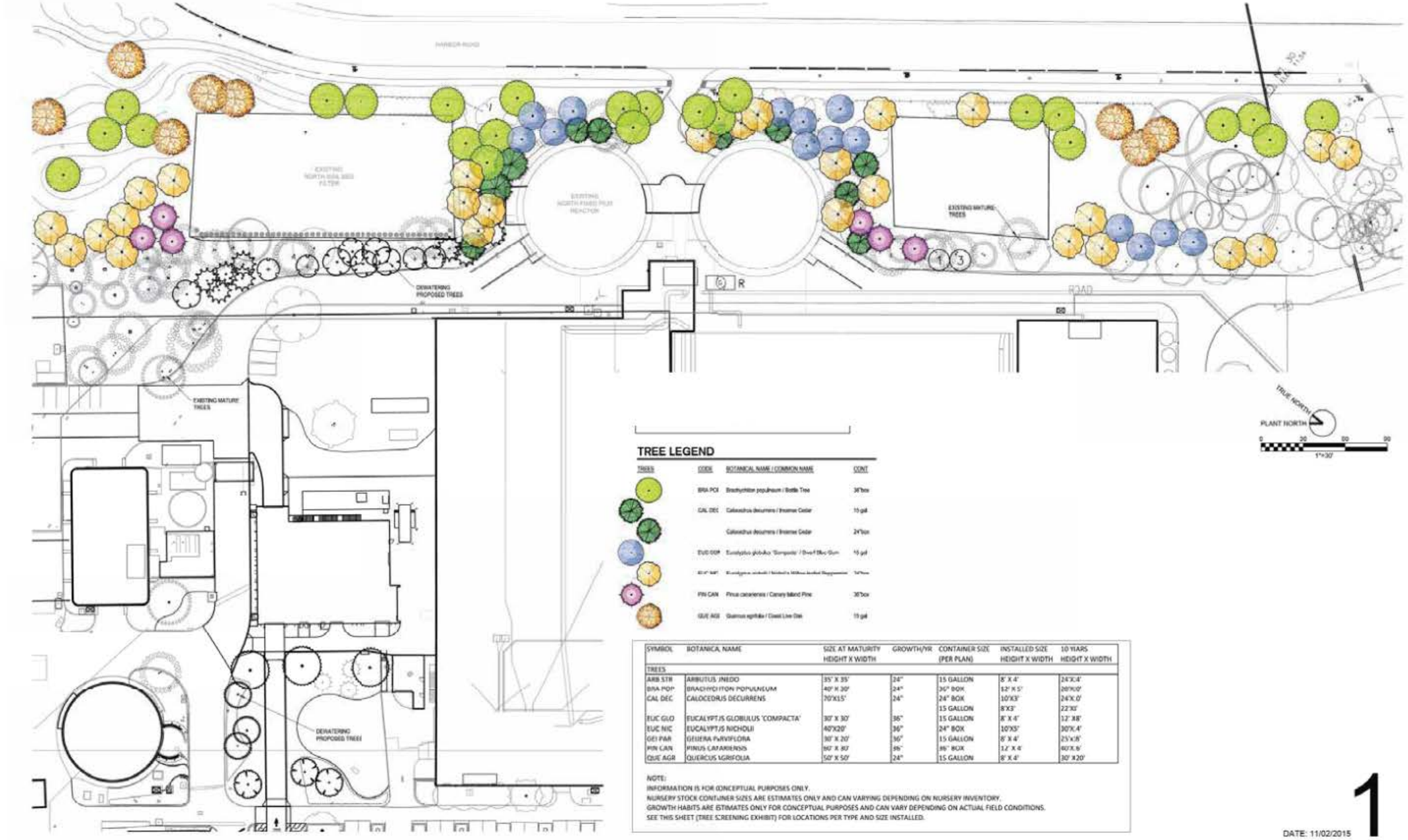
LANDSCAPING
TREE PROTECTION & REMOVAL PLAN

TRUE NORTH
PLANT NORTH
0 20 40 60
1"=20'

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	658394
DWG	07-L-0002
SHEET	36

FILENAME: 14213-L-0002-TREE PROTECTION AND REMOVAL PLAN.DWG 11/5/15 PLOT TIME: 4:46 PM



TREE LEGEND

TREES	CODE	BOTANICAL NAME / COMMON NAME	CONT
	BRA POI	Brachychiton populneum / Bottle Tree	36"box
	CAL DEC	Calocedrus decurrens / Incense Cedar	15 gal
		Calocedrus decurrens / Incense Cedar	24"box
	EUC GLO	Eucalyptus globulus 'Compacta' / Dwarf Blue Gum	15 gal
	PIN CAN	Pinus canariensis / Canary Island Pine	36"box
	QUE AGR	Quercus agrifolia / Coast Live Oak	15 gal

SYMBOL	BOTANICA. NAME	SIZE AT MATURITY HEIGHT X WIDTH	GROWTH/YR	CONTAINER SIZE (PER PLAN)	INSTALLED SIZE HEIGHT X WIDTH	10 YEARS HEIGHT X WIDTH
TREES						
ARB STR	ARBUTUS .INEDO	35' X 35'	24"	15 GALLON	8' X 4'	24'X.4'
BRA POP	BRACHYCI ITON POPULNEUM	40" X 20'	24"	36" BOX	12' X 5'	20'X.0'
CAL DEC	CALOCEDRUS DECURRENS	70'X15'	24"	24" BOX	10'X3'	24'X.0'
				15 GALLON	8'X3'	22'X0'
EUC GLO	EUCALYPT.IS GLOBULUS 'COMPACTA'	30' X 30'	36"	15 GALLON	8' X 4'	12' X8'
EUC NIC	EUCALYPT.IS NICHOLII	40'X20'	36"	24" BOX	10'X5'	30'X.4'
GEI PAR	GEIJERA PARVIFLORA	30' X 20'	36"	15 GALLON	8' X 4'	25'x.8'
PIN CAN	PINUS CAFARIENSIS	60' X 40'	36"	36" BOX	12' X 4'	40'X.6'
QUE AGR	QUERCUS AGRIFOLIA	50' X 50'	24"	15 GALLON	8' X 4'	30' X20'

NOTE:
INFORMATION IS FOR CONCEPTUAL PURPOSES ONLY.
NURSERY STOCK CONTAINER SIZES ARE ESTIMATES ONLY AND CAN VARYING DEPENDING ON NURSERY INVENTORY.
GROWTH HABITS ARE ESTIMATES ONLY FOR CONCEPTUAL PURPOSES AND CAN VARY DEPENDING ON ACTUAL FIELD CONDITIONS.
SEE THIS SHEET (TREE SCREENING EXHIBIT) FOR LOCATIONS PER TYPE AND SIZE INSTALLED.

1

DATE: 11/02/2015

Recently Planted RWQCP Tree Screening – Installed 2014
Palo Alto Regional Water Quality Control Plant

CH2MHILL

TREE LE E

TREES	CODE	BOTANICAL NAME / COMMON NAME	CONT	QTY
	ARB STR	Arbutus unedo / Strawberry Tree	15 gal	3
	BRA POP	Brachychiton populneum / Bottle Tree	36"box	4
	CAL DEC	Calocedrus decurrens / Incense Cedar	24"box	3
	EUC NIC	Eucalyptus nicholii / Nichol`s Willow-leafed Peppermint	24"box	6
	GEI PAR	Geijera parviflora / Australian Willow	15 gal	3
	PIN CAN	Pinus canariensis / Canary Island Pine	36"box	8

SYMBOL	BOTANICAL NAME	SIZE AT MATURITY HEIGHT X WIDTH	GROWTH/YR	CONTAINER SIZE PER PLANT	INSTALLED SIZE HEIGHT X WIDTH	10 YEARS HEIGHT X WIDTH
TREES						
ARB STR	ARBUTUS UNEDO	25' X 25'	24"	15 GALLON	8' X 4'	24'X24'
BRA POP	BRACHYCHITON POPULNEUM	40' X 30'	24"	36" BOX	12' X 3'	28'X20'
CAL DEC	CALOCEDRUS DECURRENS	70'X15'	24"	24" BOX	10'X3'	24'X10'
				15 GALLON	8'X3'	23'X9'
EUC G.O	EUCALYPTUS GIBBOSUS 'COMPACTA'	30' X 30'	36"	15 GALLON	8' X 4'	13' X 18'
EUC NIC	EUCALYPTUS NICHOLII	40'X35'	36"	24" BOX	10'X3'	30'X14'
GEI PAR	GEIJERA PARVIFLORA	30' X 30'	24"	15 GALLON	12' X 4'	25'X15'
PIN CAN	PINUS CANARIENSIS	60' X 30'	36"	36" BOX	12' X 4'	40'X16'
QUE AGA	QUERCUS AGRIFOLIA	50' X 50'	24"	15 GALLON	8' X 4'	30' X 20'

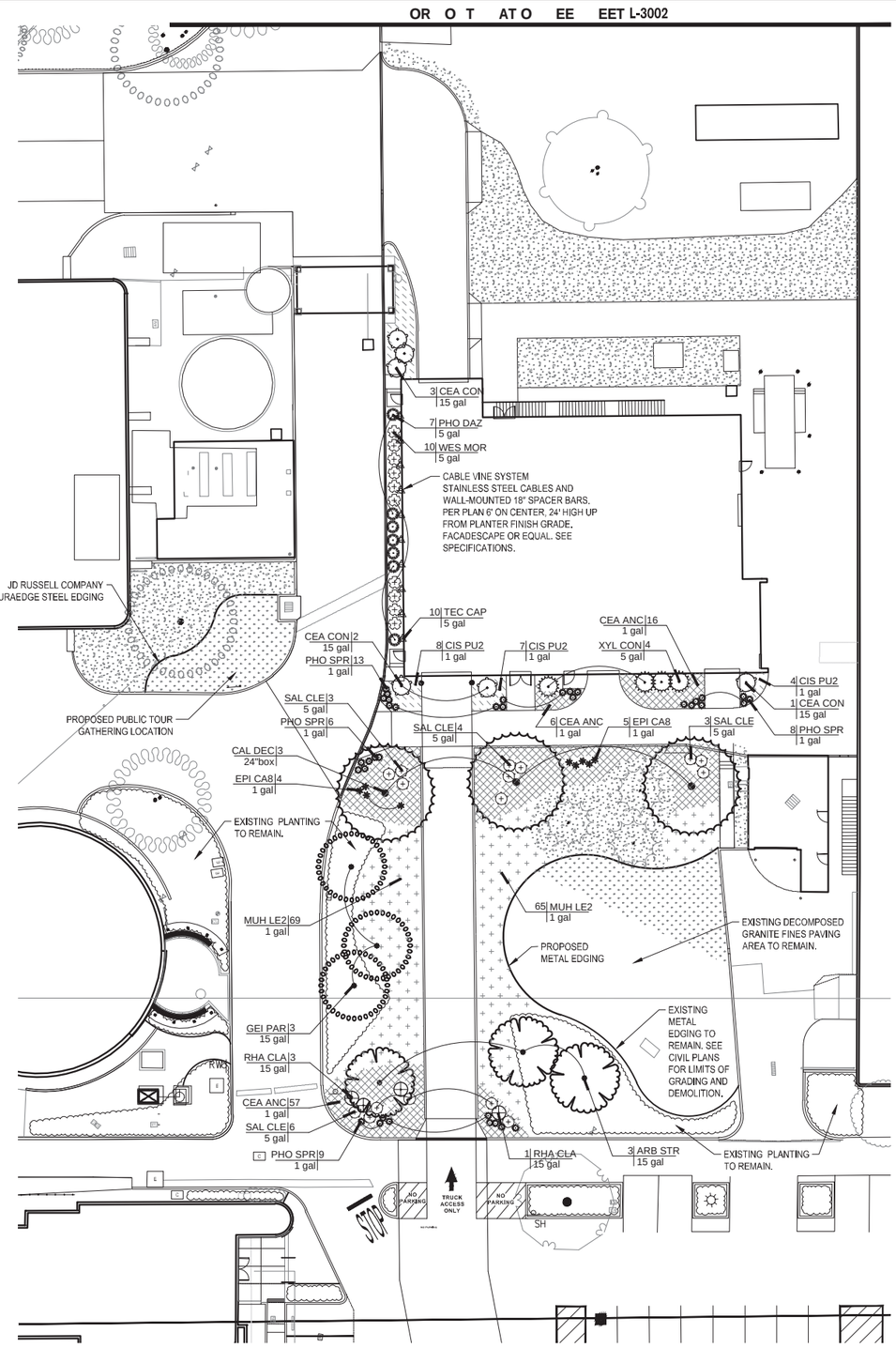
NOTE:
INFORMATION IS FOR CONCEPTUAL PURPOSES ONLY.
NURSERY STOCK CONTAINER SIZES ARE ESTIMATES ONLY AND CAN VARYING DEPENDING ON NURSERY INVENTORY.
GROWTH RATES ARE ESTIMATES ONLY FOR CONCEPTUAL PURPOSES AND CAN VARY DEPENDING ON ACTUAL FIELD CONDITIONS.
SEE THIS SHEET (TREE SCREENING SHEET) FOR LOCATIONS PER TYPE AND SIZE METHODS.

DATE: 11/03/2015

2

RWQCP Sludge Dewatering and Loadout Facility Tree Screening
Palo Alto Regional Water Quality Control Plant

CH2MHILL



LA T LE E

TREES	CODE	BOTANICAL NAME / COMMON NAME	CONT	QTY
	ARB STR	Arbutus unedo / Strawberry Tree	15 gal	3
	BRA POP	Brachychiton populneum / Bottle Tree	36"box	4
	CAL DEC	Calocedrus decurrens / Incense Cedar	24"box	3
	EUC NIC	Eucalyptus nicholii / Nichol`s Willow-leafed Peppermint	24"box	6
	GEI PAR	Geijera parviflora / Australian Willow	15 gal	3
	PIN CAN	Pinus canariensis / Canary Island Pine	36"box	8

SHRUBS	CODE	BOTANICAL NAME / COMMON NAME	CONT	QTY
	CEA CON	Ceanothus x `Concha` / California Lilac	15 gal	6
	EPI CA8	Epilobium canum `U.C. Hybrid` / Hummingbird Trumpet	1 gal	9
	PHO DAZ	Phormium tenax `Dazzler` / New Zealand Flax	5 gal	7
	PHO SPR	Phormium tenax `Jack Spratt` / New Zealand Flax	1 gal	36
	RHA CLA	Rhaphiolepis indica `Clara` / White Indian Hawthorn	15 gal	4
	SAL CLE	Salvia clevelandii / Cleveland Sage	5 gal	16
	WES MOR	Westringia fruticosa `Morning Light` / Morning Light Coast Rosemary	5 gal	10
	XYL CON	Xylosma congestum / Shiny Xylosma	5 gal	4

VINE/ESPALIER	CODE	BOTANICAL NAME / COMMON NAME	CONT	QTY
	TEC CAP	Tecomaria capensis / Cape Honeysuckle	5 gal	10

GROUND COVERS	CODE	BOTANICAL NAME / COMMON NAME	QTY
	CEA ANC	Ceanothus gloriosus `Anchor Bay` / Anchor Bay Lilac	2,017 sf
	CIS PU2	Cistus pulverulentus `Sunset` / Rockrose	313 sf
	MUH LE2	Muhlenbergia capillaris `Lenca` / Regal Mist Pink Muhly	2,289 sf

BARK MULCH-NO PLANTING
Natural bark mulch. 4" thick layer minimum. Landscape areas within the project site to receive City provided recycled natural bark mulch with no new planting. Stabilizing edges of pavement, areas of traffic and activity. In addition to these areas, all new tree and shrub planting areas to be installed with bark mulch.

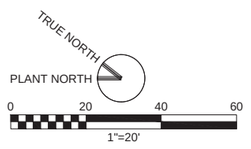
DECOMPOSED GRANITE FINES PAVEMENT
Decomposed granite fines with organic stabilizer. Paving area and public educational tour area to match existing material with 4" thick layer, laid in 2" lifts and compacted to 85% relative density over 6" layer of compacted subgrade. Aluminum edging to be installed when adjacent to planting beds.

LA T OTE

1. IF A DISCREPANCY BETWEEN THESE PLANS AND ACTUAL ON-SITE CONDITIONS OCCURS, THE CONTRACTOR IS TO NOTIFY THE OWNER IMMEDIATELY, BEFORE PROCEEDING WITH WORK, FOR A DECISION.
2. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE CITY OF PALO ALTO STANDARDS.
3. ALL PLANTS BROUGHT ONTO THE SITE SHALL BE WATERED AND PROTECTED FROM EXCESSIVE WIND, SUN, FROST, PHYSICAL DAMAGE AND THEFT UNTIL PLANTED.
4. ALL ASPHALT, BASE COURSE AND OTHER DEBRIS ARE TO BE REMOVED COMPLETELY BELOW PLANTING AREAS TO NATIVE SOIL LEVEL.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR POSITIVE SURFACE DRAINAGE AT 2% MINIMUM IN PLANTING AREAS EXCEPT WHERE SHOWN.
6. THE CONTRACTOR SHALL FURNISH AND APPLY THE APPROPRIATE PRE-EMERGENT HERBICIDE AT RATES PRESCRIBED BY LAW AND THE MANUFACTURER'S RECOMMENDATIONS. 'SURFLAN 75W' IS RECOMMENDED FOR GROUND COVER AND SHRUB AREAS. ALL PRE-EMERGENT HERBICIDES SHALL BE APPLIED BY LICENSED OPERATORS UNDER FAVORABLE WEATHER CONDITIONS.
7. ALL PLANTING AREAS SHALL BE ROTOTILLED (OR HAND CULTIVATED UNDER EXISTING TREES) TO A DEPTH OF 8". TAKE CARE NOT TO DAMAGE ROOTS.
8. THE CONTRACTOR TO BE RESPONSIBLE FOR OBTAINING A SOILS TEST AND PROVIDING THE APPROPRIATE AMENDMENTS BASED ON THE TEST RESULTS. FOR PURPOSES OF BIDDING, THE FOLLOWING AMENDMENTS WILL BE USED
   (PER 1000 SQ. FT.):
   -4 YDS. NITROLIZED OR REDWOOD OR FIR BARK COMPOST
   -200 LBS GRO-POWER PLUS (FERTILIZER MIX PER SPECIFICATIONS)
   ROTOTILL AMENDMENTS TO A DEPTH OF 8" IN TWO DIRECTIONS.
9. FINISH GRADE OF PLANTED AREAS TO BE ONE (1) INCH BELOW PAVING. WATER SOIL THOROUGHLY BEFORE PLANTING. ALL PLANTS TO BE INSTALLED 2" ABOVE THE FINISHED SURFACE BEFORE THE MULCH IS INSTALLED. ALL PLANTS SHALL BE SET AT SUCH A LEVEL THAT AFTER SETTLING THEY BEAR THE SAME RELATIONSHIP TO THE SURROUNDING FINISH GRADE AS THEY BORE TO THE SOIL LINE GRADE IN THE CONTAINER, UNLESS OTHERWISE NOTED.
10. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE DRAINAGE OF ALL PLANTINGS, SUFFICIENT TO INSURE HEALTHY GROWTH.
11. COVER ALL PLANTING AREAS AND OPEN SPACE AREAS SHOWN ON PLAN WITH A 4'-6" DEPTH OF CITY MULCH LANDSCAPE AREA AFTER FINAL SHAPING OF SAUCERS AND DRESS OFF NEATLY.
12. TREES ARE TO BE STAKED PER DETAIL. INSTALL 8 LF. OF ROOTBARRIER CENTERED ON TREES WITHIN 5 FEET OF WALKS, WALLS OR BUILDINGS. SEE SPECIFICATIONS.
13. AN AUTOMATIC IRRIGATION SYSTEM IS TO BE PROVIDED TO WATER ALL PLANTING AREAS. CONTRACTOR IS TO PROVIDE ADEQUATE COVERAGE FOR ALL INDICATED PLANTING AREAS PRIOR TO PLANT INSTALLATION.
14. TRIANGULAR SPACING FOR GROUND COVER PLANTING BEDS.
15. EXISTING TREES TO REMAIN AND BE PROTECTED DURING CONSTRUCTION. CARE SHOULD BE TAKEN WHEN GRADING OCCURS WITHIN THE DRIPLINE OF THE TREE.
16. CONTRACTOR TO NOTIFY LANDSCAPE ARCHITECT IMMEDIATELY IF ANY DISCREPANCIES OR QUESTIONS OF GRADING OR THE TREE PROTECTION OCCUR AT TIME CONSTRUCTION.
17. ALL WORK WITHIN THE EXISTING TREE ROOT ZONES SHALL BE DONE USING ALL POSSIBLE CARE TO AVOID INJURY TO ROOTS.
18. NO ROOTS LARGER THAN 3" SHALL BE CUT WITHOUT APPROVAL. CONTACT LANDSCAPE ARCHITECT IF PLANT MATERIAL PLACEMENT IS IN CONFLICT WITH EXISTING ROOTS.
19. FILLS INSIDE THE TREE ROOT ZONE SHOULD NOT EXCEED 4".
20. ROOT BARRIER,TO BE INSTALLED WHEN TREE IS WITHIN 5' OF SIDEWALKS, ROADWAYS, BUILDING OR CURBS.

T RE LA T TT TO

1. REFER TO RWQCP OWNER/REPRESENTATIVE FOR ANY FUTURE PLANTING SUBSTITUTIONS.
2. RWQCP HAS DEVELOPED A FACILITY LANDSCAPE PLANT PALETTE (RECYCLED WATER/SALT TOLERANCE) DATED APRIL 12, 2012
* GENERATED BY STAKEHOLDERS AND CONSULTANT'S COMMITTEE SPECIFICALLY FOR THE PROJECT SITE.



LICENSED LANDSCAPE ARCHITECT ROBERT J. NORBUT, SR. No.5595 Signature Exp. 11/30/16 CALIFORNIA
PRELIMINARY NOT FOR CONSTRUCTION

NO.	DATE	DSGN	REVISION	DR	CHK	APVD	BY	APPVD BY
				RJN	RJN	PJS		

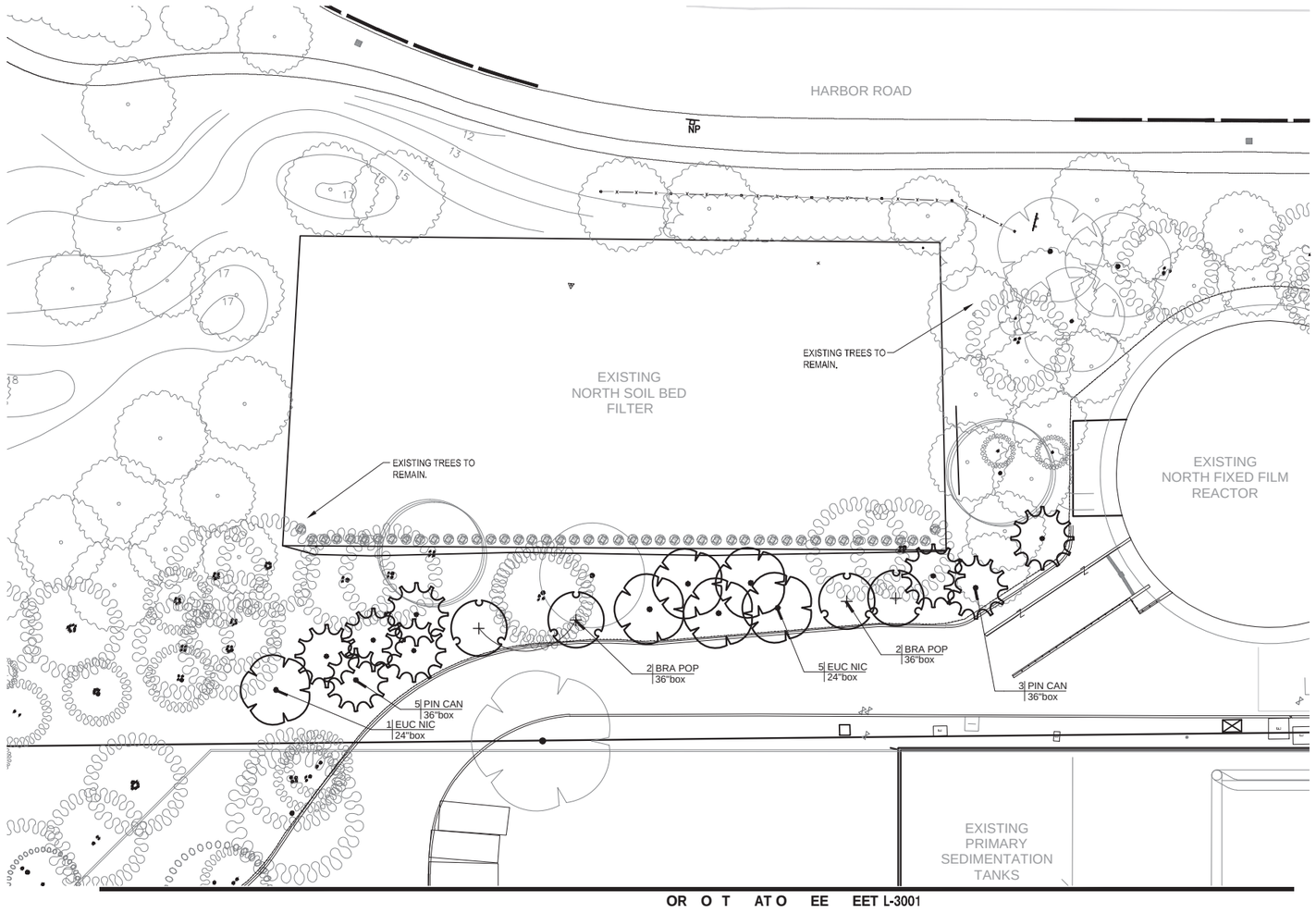
CITY OF PALO ALTO
CALIFORNIA
REGIONAL WATER QUALITY CONTROL PLANT
SLUDGE DEWATERING AND LOADOUT FACILITY

CH2MHILL
LANDSCAPING
PLANTING PLAN 1

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

DATE	NOVEMBER 2015
PROJ	658394
DWG	07-L-3001
SHEET	39

FILENAME: 14213-L-3001-PLANTING PLAN 1.DWG PLOT DATE: 11/5/15 PLOT TIME: 4:49 PM



OR O T AT O EE EET L-3001

SEE SHEET 07-L-3001 FOR PLANTING LEGEND AND NOTES

TRUE NORTH

PLANT NORTH

0 20 40 60

1"=20'

FILENAME: 14213-L-3002-PLANTING PLAN 2.DWG PLOT DATE: 11/5/15 PLOT TIME: 4:51 PM

LICENSED LANDSCAPE ARCHITECT
ROBERT J. NORBUTAS JR.
No.5595
Signature
Exp. 11/30/16
STATE OF CALIFORNIA
PRELIMINARY
NOT FOR
CONSTRUCTION

NO.	DATE	REVISION	DR	CHK	APVD	BY	APVD
DSGN			RJN	RJN	PJS		DW GREEN

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT

SLUDGE DEWATERING AND
LOADOUT FACILITY

CH2MHILL

SLUDGE DEWATERING AND LOADOUT FACILITY

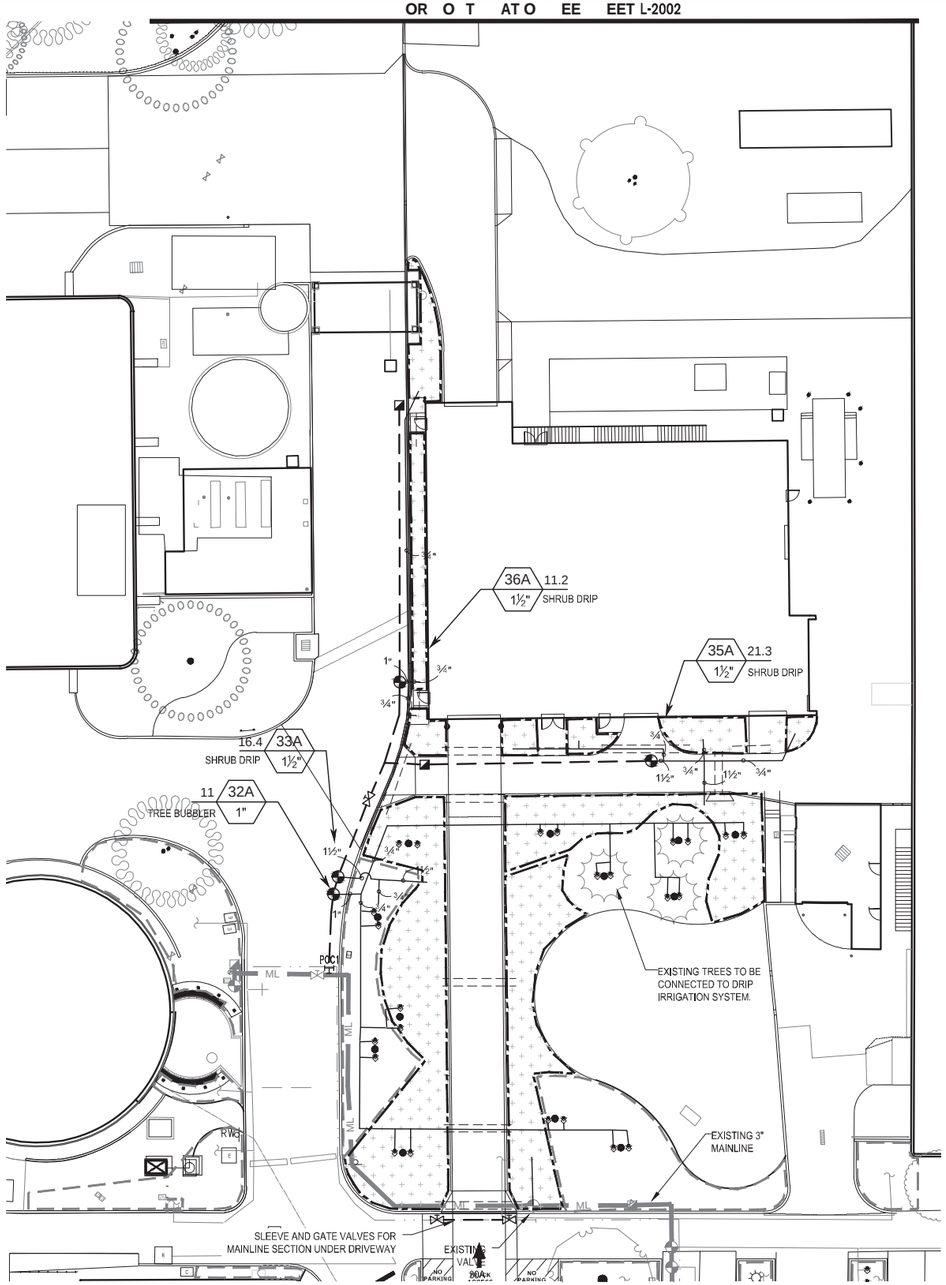
LANDSCAPING PLANTING PLAN 2

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	658394
DWG	07-L-3002
SHEET	40

OR O T AT O EE EET L-2002



RR AT O LE E

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Rain Bird PEB-PRS-D-NP-HAN 1", 1-1/2", 2" Plastic Industrial Valves. Low Flow Operating Capability, Globe Configuration. With Pressure Regulator Module, and Purple Flow Handle for Non-Potable Water Use.
	Rain Bird 44-NP 1" Brass Quick-Coupling Valve, with Corrosion-Resistant Stainless Steel Spring, Locking Non-Potable Purple Rubber Cover, and 2-Piece Body.
	Nibco T-113 or P-619-RW For 2.5" or smaller, use T-113. For 3" or larger, P-619-RW with joint restrails. Size same as mainline pipe diameter at valve location.
POC1	Point of Connection 3" Connection to existing recycled water irrigation mainline with source connection on W-4 onsite connection located inside planter at RWQCP entrance gate.
POC2	Point of Connection 3" Connection to existing 3" recycled water irrigation mainline located along Harbor Road.
	Irrigation Lateral Line: PVC Schedule 40 and Class 315 PVC Schedule 40 to 1-1/2", PVC Class 315 SDR 13.5 for pipes 2" and larger.
	Irrigation Mainline: PVC Schedule 40 and Class 315 PVC Schedule 40 to 1-1/2", PVC Class 315 SDR 13.5 for pipes 2" and larger.
	Pipe Sleeve: PVC Schedule 40 Typical pipe sleeve for irrigation pipe. Min. size 2x diameter of pipe being sleeved. Extend sleeves 18 inches beyond edges of paving or construction.

Valve Callout
- # = Valve Number
- # = Valve Flow
- #" = Valve Size

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
1401 1402	Rain Bird RWS-M-B-C-P-SOCK Mini Root Watering System with 4,0" diameter x 18,0" long with locking grate, semi-rigid mesh tube and Rain Bird 1401 0.25 gpm or 1402 0,5 gpm bubbler as indicated. With Check Valve, Purple Grate, and Sand Sock for sandy soil.
	Area to Receive Drip Emitters Rain Bird PCT Pressure Compensating Threaded Low-Flow Bubblers. Offered in 5 GPH, 7 GPH, and 10 GPH models, with 1/2" FPT threaded inlet. Light Brown = 5 GPH, Violet = 7 GPH, and Green = 10 GPH. Emitter Notes: 1 gal plant to receive 1 of 07 gph emitter. 15 gal plant to receive 2 of 10 gph emitters. 5 gal plant to receive 1 of 10 gph emitter.
	Existing Irrigation to be Modified Contractor responsible for modifications to existing irrigation adjacent to project area. Contractor to remove irrigation system and valves within project area and cap mainline system accordingly. Existing irrigation to be modified to maintain irrigation to existing plant material. New irrigation system shall be isolated to new controller at building and not connected to existing controller. Contractor to coordinate existing mainline system, shut-off and controller with Owner.
	Proposed Tree (trunk location for irrigation reference per planting plan)

ATER E E OTE

THE IRRIGATION SYSTEM SHALL MEET THE CITY AND STATE 'MODEL WATER EFFICIENT LANDSCAPE ORDINANCE' (AB 1881) WATER PRESERVATION REQUIREMENTS BASED ON THE USE OF DRIP AND WATER EFFICIENT IRRIGATION, LOW AND MODERATE WATER-USE PLANT SPECIES AND 'SMART' CONTROLLERS INSTALLED.
THE 'SMART' IRRIGATION CONTROLLERS CAPABILITIES ARE:
- WEATHER-BASED CONTROL
- RAIN SENSOR/MONITORING SHUTOFF
- PLANT ZONE ET CALCULATIONS AUTOMATIC SCHEDULING
- WATER BUDGETING CAPABILITIES

IRRIGATION SCHEDULING NOTE
PROJECT INCLUDES A NEW IRRIGATION SYSTEM AND REQUIRES THE FOLLOWING MEASURES TO BE MET:

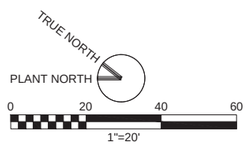
1. IRRIGATION MUST BE SCHEDULED BETWEEN 8:00 P.M. AND 10:00 A.M. UNLESS WEATHER CONDITIONS PREVENT IT.
2. OPERATION OF THE IRRIGATION SYSTEM OUTSIDE THE NORMAL WATERING WINDOW IS ALLOWED FOR AUDITING AND SYSTEM MAINTENANCE.
3. TOTAL ANNUAL APPLIED WATER SHALL BE LESS THAN OR EQUAL TO MAXIMUM APPLIED WATER ALLOWANCE (MAWA) AS CALCULATED PER THE POTABLE WATER USE REDUCTION TIER. PAMC 16.14.310 (ORD. 5220 PARAGRAPH 1 (PART), 2013.

E ERAL RR AT O OTE

1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH CITY OF PALO ALTO STANDARDS.
2. THE IRRIGATION SYSTEM IS DESIGNED TO OPERATE AT 30 PSI (ROTATORS) AND 30 PSI (AT DRIP EMITTERS), AND WITH A MAXIMUM FLOW RATE OF 50 GPM. THE SUBCONTRACTOR IS TO PERFORM A STATIC AND DYNAMIC PRESSURE TEST; VERIFY AT LEAST 60 PSI STATIC, WITH A MAXIMUM OF 200 PSI STATIC. REPORT FINDINGS TO THE LANDSCAPE ARCHITECT. IF THE CONTRACTOR FAILS TO DO SO, THE SUBCONTRACTOR WILL TAKE FULL RESPONSIBILITY FOR ANY NECESSARY REVISIONS.
3. THE INTENT OF THIS IRRIGATION SYSTEM IS TO PROVIDE THE MINIMUM AMOUNT OF WATER REQUIRED TO SUSTAIN GOOD PLANT HEALTH. LANDSCAPE SUBCONTRACTOR SHALL GUARANTEE 100% COVERAGE OF SYSTEM. QUANTITIES (IF SHOWN) ARE FOR REFERENCE ONLY.
4. IRRIGATION CONTROLLER TO BE LOCATED PER PLANS, SCREENED FROM CASUAL VIEW.
5. SPLICING OF 24 VOLT WIRES IS NOT PERMITTED EXCEPT IN VALVE BOXES. LEAVE A 36" LONG, 6" DIAMETER COIL OF EXCESS WIRE AT EACH SPLICE AND A 36" LONG EXPANSION LOOP EVERY 100 FEET ALONG WIRE RUN. TAPE WIRE TOGETHER EVERY TEN FEET. TAPING WIRES IS NOT REQUIRED INSIDE SLEEVES. RUN WIRE FROM EACH REMOTE CONTROL VALVE TO THE CONTROLLER. ALL CONTROLLER WIRES TO BE LABELED AT VALVES AND CONTROLLER.
6. PLASTIC VALVE BOX LIDS TO BE T-STYLE NON-HINGED COVERS. BOX BODY SHALL HAVE KNOCK-OUTS WITH BOLT-DOWN LIDS.
7. INSTALL NEW REMOTE CONTROL VALVE BOXES 12" FROM WALK, CURB, LAWN, HEADER BOARD, BUILDING, OR LANDSCAPE FEATURE. AT MULTIPLE VALVE BOX GROUPS, EACH BOXSHALL BE AN EQUAL DISTANCE FROM THE WALK, CURB, LAWN, ETC. AND EACH BOX SHALL BE 12" APART.
8. SHORT SIDE OF RECTANGULAR VALVE BOXES SHALL BE PARALLEL TO WALK, CURB, LAWN, ETC.
9. THIS PLAN IS DIAGRAMMATIC. ALL PIPING, VALVES, ETC. SHOWN WITHIN PAVED AREAS IS FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS WHERE POSSIBLE. AVOID ANY CONFLICTS BETWEEN THE IRRIGATION SYSTEM AND PLANTING AND ARCHITECTURAL FEATURES.
10. THE IRRIGATION CONTRACTOR SHALL FLUSH ALL LINES AND ADJUST ALL HEADS FOR MAXIMUM PERFORMANCE AND TO MINIMIZE OVERSPRAY ON TO WALKS, WALLS, FENCES, DRIVES, AND BUILDINGS AS MUCH AS POSSIBLE. THIS SHALL INCLUDE SELECTING THE BEST DEGREE OF ARC TO FIT EXISTING CONDITIONS AND REDUCE RADIUS AT EACH HEAD TO.
11. COMMON WIRE TO BE U.L. LISTED DIRECT BURY #12 GAUGE, WHITE. ALL CONTROL WIRE TO BE U.L. LISTED DIRECT BURY #14 GAUGE WIRE, RED.
12. CONTRACTOR SHALL LABEL VALVE BOX LIDS PER STANDARDS. REMOTE CONTROL VALVES SHALL BE LABELED WITH STATION NUMBER. QUICK COUPLERS WITH "QCV" AND GATE VALVES WITH "GV".
13. CONTRACTOR SHALL PROVIDE TWO (2) COPIES OF 11x17 LAMINATED CONTROLLER CHARTS PRIOR TO FINAL ACCEPTANCE BY OWNER. CONTROLLER CHARTS SHALL BE COLOR-CODED INDICATING EACH VALVE AND THE SYSTEM IT OPERATES. CHARTS SHALL BE REDUCTIONS OF THE IRRIGATION PLANS.
14. SEE SPECIFICATIONS FOR COMMON TRENCHING REQUIREMENTS.
15. ALL PVC SLEEVES UNDER PAVEMENT AND ROADWAYS TO BE SCH. 40. PVC, TWICE THE DIAMETER OF PIPE OR WIRE BUNDLE THAT WILL PASS THROUGH SLEEVE.
16. INSTALL CHECK VALVES OR IN-HEAD CHECK VALVES TO ELIMINATE LOW HEAD DRAINAGE WHERE NECESSARY.
17. SUBSTITUTION FOR IRRIGATION EQUIPMENT SPECIFIED ON THE PLANS MAY BE DONE ONLY WITH THE APPROVAL OF THE OWNER'S REPRESENTATIVE.
18. PROVIDE A MINIMUM 24" COVER OVER ALL MAIN LINE PIPING AND 18" OVER ALL LATERAL LINES.
19. CONTRACTOR SHALL NOT WILLFULLY INSTALL THE SYSTEM AS DESIGNED WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS OR GRADE DIFFERENCES EXIST THAT WERE NOT IDENTIFIED IN THE DRAWINGS. SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE. OTHERWISE, THE CONTRACTOR MUST ASSUME FULL RESPONSIBILITY FOR ANY NECESSARY REVISIONS.
20. ALL WIRE CONNECTIONS TO BE MADE IN VALVE BOX WITH WATER TIGHT CONNECTORS PER THE MANUFACTURERS DIRECTIONS. WIRE SPLICES SHALL NOT BE PERMITTED UNLESS APPROVED BY THE OWNER'S REPRESENTATIVE. WIRE SPLICE LOCATIONS MUST BE INDICATED ON "AS-BUILTS" PER THE SPECIFICATIONS.
21. ALL PIPE 2 1/2" AND SMALLER TO BE SOLVENT WELD AND ALL PIPE 3" AND OVER TO BE RING-TITE WITH JOINT RESTRAINTS.
22. CONTRACTOR TO VERIFY LOCATIONS OF ALL ON-SITE UTILITIES. RESTORATION OF DAMAGED UTILITIES SHALL BE MADE AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE CITY.
23. CONTRACTOR TO MARK IRRIGATION STREET CROSSINGS OF WATER LINES WITH A CHISELED "I" IN THE CURB.
24. ALL HOSE BIBBS SHALL HAVE PERMANENTLY ATTACHED YELLOW IDENTIFICATION TAG WITH THE FOLLOWING STATEMENT OR APPROVED EQUAL IN ENGLISH ON ONE SIDE AND SPANISH ON THE REVERSE:
"NON POTABLE WATER - FOR IRRIGATION USE ONLY - DO NOT DRINK"
25. SEE IRRIGATION DETAILS FOR ADDITIONAL INFORMATION.

RE LE ATER RR AT O OTE

1. IRRIGATION SYSTEM USING RECYCLED WATER SHALL COMPLY WITH ALL STATE AND LOCAL RULES (CITY OF PALO ALTO MUNICIPAL CODE CHAPTER 16.12) AND CODES REGARDING USE OF RECYCLED WATER INCLUDING CHAPTER 3, DIVISION 4, TITLE 22, SECTION 60301 OF THE CALIFORNIA CODE OF REGULATIONS.
2. NOTIFY RECLAIMED WATER PURVEYOR'S AUTHORIZED REPRESENTATIVE NO LESS THAN 5 WORKING DAYS PRIOR TO START OF WORK FOR INSPECTION SCHEDULE COORDINATION.
3. RECYCLED WATER MAINLINE CAN NOT BE INSTALLED PARALLEL IN ELEVATION TO, OR DIRECTLY ON TOP OF A POTABLE WATER LINE.
4. RECYCLED WATER LINES AND ALL APPURTENANCES MUST MAINTAIN 10'-0" HORIZONTAL DISTANCE AND 1'-0" VERTICAL SEPARATION FROM POTABLE WATER LINES AND APPURTENANCES.
5. ALL RECYCLED WATER PIPE, VALVES, HEADS, AND OTHER APPURTENANCES SHALL HAVE INTEGRAL PURPLE COLOR AND STENCILING. ALL MARKINGS SHALL INCLUDE THE FOLLOWING STATEMENT OR APPROVED SIMILAR:
"CAUTION - RECYCLED WATER - DO NOT DRINK".
6. ALL PIPING OF RECYCLED WATER IRRIGATION SYSTEM SHALL BE CONSTRUCTED SO THAT SPRAY OR RUNOFF SHALL NOT ENTER A DWELLING, FOOD HANDLING FACILITY OR EATING AREA AND SHALL NOT CONTACT ANY DRINKING WATER FOUNTAINS. IRRIGATION WITH RECYCLED WATER SHALL BE ACCOMPLISHED AT A TIME AND MANNER THAT MINIMIZES THE POSSIBILITY OF HUMAN CONTACT.
7. NO HOSE BIBS SHALL BE USED FOR RECYCLED WATER SYSTEMS. QUICK-COUPLING VALVES SHALL BE CONSTRUCTED OF BRASS, WITH A PURPLE RUBBER OR VINYL COVER.
8. LIDS TO ALL VALVE, QUICK COUPLER AND EMITTER BOXES MUST BE PURPLE IN COLOR.
9. IRRIGATION MAINTENANCE PROGRAM SHALL INCLUDE A PROVISION FOR REPORTING PROBLEM AREAS (PONDING, RUNOFF, OVERSPRAY, LEAKS, BREAKS, ETC.) TO THE WATER PURVEYOR. IF THE WATER PURVEYOR HAS NO CONTINGENCY PLAN, THEN DEVELOP A CONTINGENCY PLAN REGARDING ACTION TO BE TAKEN TO CORRECT PROBLEMS IF RECYCLED WATER QUALITY FAILS TO MEET REQUIRED STANDARDS.
10. ALL PRESSURE MAINLINE PIPING FROM THE RECYCLED WATER SYSTEM SHALL BE INSTALLED TO MAINTAIN 10 FEET MINIMUM HORIZONTAL SEPARATION FROM ALL POTABLE WATER PIPING. WHERE RECYCLED AND POTABLE WATER PRESSURE MAINLINE PIPING CROSS, THE RECYCLED WATER PIPING SHALL BE INSTALLED 12" BELOW THE POTABLE WATER PIPING OUTSIDE DIAMETER (OD) TO OD, WHERE THE RECYCLED WATER PRESSURE MAINLINE MUST PASS ABOVE POTABLE WATER PIPING, THE RECYCLED WATER PIPING SHALL INSTALLED IN A SCHEDULE 40 PURPLE COLORED PVC SLEEVE WHICH EXTENDS A MINIMUM OF FIVE FEET ON EITHER SIDE OF THE POTABLE WATER PIPING. A 12" VERTICAL SEPARATION OD TO OD MUST BE MAINTAINED. CONVENTIONAL (WHITE) PVC PIPE MAY BE USED FOR SLEEVE MATERIAL IF IT IS TAPED WITH THREE-INCH WIDE PURPLE WARNING TAPE, WHICH READS 'RECYCLED WATER- DO NOT DRINK'.



LICENSED LANDSCAPE ARCHITECT
ROBERT J. NORBUTAS JR.
No.5595
Signature
Exp. 11/30/16
PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
		RJN	RJN	PJS	APVD	DW GREEN	

CITY OF PALO ALTO
CALIFORNIA

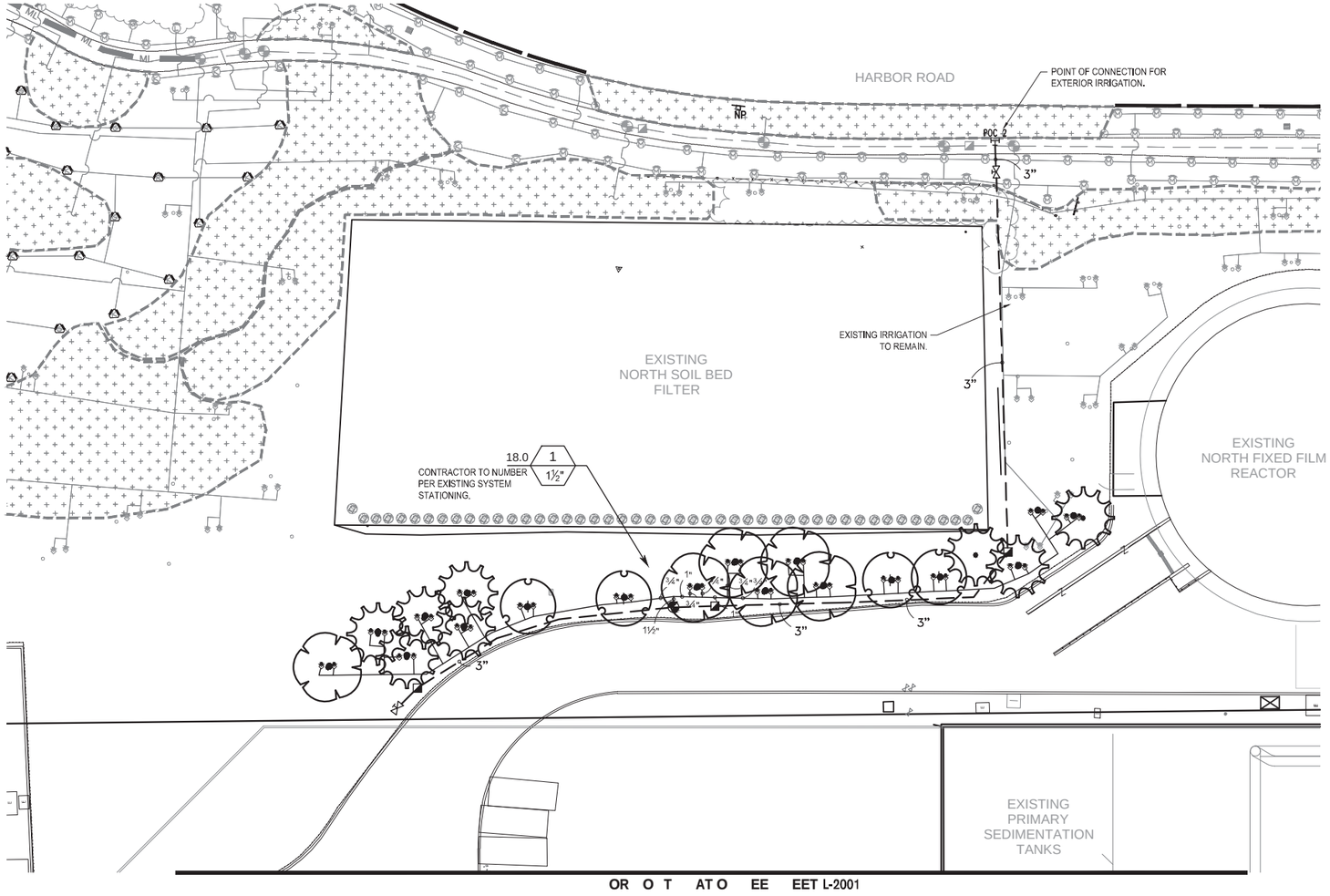
REGIONAL WATER QUALITY CONTROL PLANT
SLUDGE DEWATERING AND LOADOUT FACILITY

CH2MHILL
SLUDGE DEWATERING AND LOADOUT FACILITY

LANDSCAPING
IRRIGATION PLAN 1

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	658394
DWG	07-L-2001
SHEET	37



OR O T AT O EE EET L-2001

ATER E E OTE

THE IRRIGATION SYSTEM SHALL MEET THE CITY AND STATE 'MODEL WATER EFFICIENT LANDSCAPE ORDINANCE' (AB 1881) WATER PRESERVATION REQUIREMENTS BASED ON THE USE OF DRIP AND WATER EFFICIENT IRRIGATION, LOW AND MODERATE WATER-USE PLANT SPECIES AND 'SMART' CONTROLLERS INSTALLED.
THE 'SMART' IRRIGATION CONTROLLERS CAPABILITIES ARE:
- WEATHER-BASED CONTROL
- RAIN SENSOR/MONITORING SHUTOFF
- PLANT ZONE ET CALCULATIONS AUTOMATIC SCHEDULING
- WATER BUDGETING CAPABILITIES

IRRIGATION SCHEDULING NOTE
PROJECT INCLUDES A NEW IRRIGATION SYSTEM AND REQUIRES THE FOLLOWING MEASURES TO BE MET:

1. IRRIGATION MUST BE SCHEDULED BETWEEN 8:00 P.M. AND 10:00 A.M. UNLESS WEATHER CONDITIONS PREVENT IT.
2. OPERATION OF THE IRRIGATION SYSTEM OUTSIDE THE NORMAL WATERING WINDOW IS ALLOWED FOR AUDITING AND SYSTEM MAINTENANCE.
3. TOTAL ANNUAL APPLIED WATER SHALL BE LESS THAN OR EQUAL TO MAXIMUM APPLIED WATER ALLOWANCE (MAWA) AS CALCULATED PER THE POTABLE WATER USE REDUCTION TIER. PAMC 16.14.310 (ORD. 5220 PARAGRAPH 1 (PART), 2013.

SEE SHEET 07-L-2001 FOR IRRIGATION LEGEND AND NOTES

TRUE NORTH
PLANT NORTH
0 20 40 60
1"=20'

LICENSED LANDSCAPE ARCHITECT ROBERT J. NORBUTAS JR. No.5595 Signature Exp. 11/30/16 CALIFORNIA
PRELIMINARY NOT FOR CONSTRUCTION

NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
		RJN	RJN	PJS	DW GREEN	APVD	

CITY OF PALO ALTO
CALIFORNIA

REGIONAL WATER QUALITY CONTROL PLANT
SLUDGE DEWATERING AND LOADOUT FACILITY

CH2MHILL.

SLUDGE DEWATERING AND LOADOUT FACILITY
LANDSCAPING
IRRIGATION PLAN 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	NOVEMBER 2015
PROJ	658394
DWG	07-L-2002
SHEET	38

FILENAME: 14213-L-2002-IRRIGATION PLAN 2.DWG PLOT DATE: 11/5/15 PLOT TIME: 4:47 PM

City of Palo Alto
Department of Planning and Community Environment
California Environmental Quality Act

***PROPOSED* MITIGATED NEGATIVE DECLARATION**

I. DESCRIPTION OF PROJECT

Date:	December 15, 2015
Project Name:	Palo Alto Regional Water Quality Control Plant Sludge Dewatering and Loadout Facility
Application Nos.:	Not Applicable
Address of Project:	2501 Embarcadero Way
Assessor's Parcel Numbers:	008-03-029
Applicant:	City of Palo Alto Regional Water Quality Control Plant
Owner:	City of Palo Alto 250 Hamilton Avenue, 5th Floor Palo Alto, CA 94301

Project Description and Location:
The proposed project would include the construction and operation of a sludge dewatering and truck loadout facility at the Palo Alto Regional Water Quality Control Plant (RWQCP). The City's vision for future biosolids management encompasses the need to address the RWQCP's aging solids handling infrastructure, to proactively comply with changing and uncertain regulations affecting biosolids, and to respond to community goals to increase the beneficial use of recovered organic resources city-wide. To respond to this, the City developed a Biosolids Facility Plan (BFP) that provides a long-term roadmap to enable the City to reliably and sustainably manage and beneficially reuse the wastewater solids produced at the RWQCP through year 2045. The BFP was developed as a companion document to the City of Palo Alto Long Range Facilities Plan for the Regional Water Quality Control Plant Final Report (LRFP). The BFP builds on the LRFP, allowing solids processing recommendations in the BFP to move forward in concert with other planned improvements at the RWQCP (as defined in the LRFP). Together, the two documents provide a comprehensive long-term plan for the RWQCP. The proposed project analyzed in this document is the dewatering and loadout facility, also known as Component 1 of the BFP. The dewatering and loadout facility would have independent utility as a backup sludge dewatering and haul off facility that can be used long-term even if additional BFP components are not built.

The proposed project includes the construction of a new building to accommodate the installation of four belt filter presses. The project also includes mechanisms to convey the resulting cake from the belt filter presses to three storage bins, and to load the cake from the bins into trucks. These activities would occur within the new

dewatering and truck loadout facility building. The new building would be a two story, cast-in-place concrete structure that would contain space for the belt filter presses, truck loadout, and other miscellaneous support areas. The facility would have a building footprint of approximately 7,500 square feet and a building height of 50 feet. The facility would include a robust system for odor control. The roof would include removable skylights over the BFPs for the purpose of facilitating future removal/replacement. These skylights would also provide light into the room, reducing the need for electric lights during the daytime. Various minor modifications to the yard piping system would be needed in order to accommodate the new facility. In addition to the dewatering and truck loadout facility itself, a standby diesel engine generator will be installed to provide backup. The generator is sized to handle the load for the facility as well as other nearby facilities. Fuel storage will be provided by means of a sub-base fuel tank.

II. DETERMINATION

In accordance with the City of Palo Alto's procedures for compliance with the California Environmental Quality Act (CEQA), the City has conducted an Initial Study to determine whether the proposed project could have a significant effect on the environment. On the basis of that study, the City makes the following determination:

_____ **The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION is hereby adopted.**

___X___ **Although the project, as proposed, could have a significant effect on the environment, there will not be a significant effect on the environment in this case because mitigation measures have been added to the project and, therefore, a MITIGATED NEGATIVE DECLARATION is hereby adopted.**

The initial study prepared for this project described above incorporates all relevant information regarding the potential environmental effects of the project and confirms the determination that an EIR is not required for the project. The following describes the areas of analysis and any mitigation measures incorporated into the proposed project in accordance with CEQA:

A. AESTHETICS. The project will not have a significant impact on aesthetics or visual resources, therefore no mitigation is required.

B. AGRICULTURAL RESOURCES. The project will not have a significant impact on agricultural resources, therefore no mitigation is required.

C. AIR QUALITY. The project will not have a significant impact on air quality, therefore no mitigation is required.

D. BIOLOGICAL RESOURCES.

Impact BIO (a): The proposed project may have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special-status species.

Avoidance Measures for Special-Status Wildlife Species. The proposed project includes the following avoidance and minimization measures to reduce impacts on species covered by the MBTA during construction to a less-than-significant level:

- Pre-construction nesting surveys will be conducted before undertaking work during the nesting season (February through August). Any nest found within 50 feet for songbirds and 300 feet for raptors will be

avoided, and a designated construction-free buffer zone will be established until the nests are no longer active.

- Biological monitoring of work activities for active bird nests found during the nesting season will be conducted by a qualified biologist.
- A qualified biologist will conduct onsite informational meetings with all construction personnel before construction begins. The purpose of these training sessions will be to familiarize construction personnel with the procedures regarding nesting birds they are to follow if they are encountered.

E. CULTURAL RESOURCES. The project will not have a significant impact on cultural resources, therefore no mitigation is required.

F. GEOLOGY, SOILS, AND SEISMICITY. The project will not have a significant impact on geology, soils, and seismicity, therefore no mitigation is required.

G. GREENHOUSE GAS EMISSIONS. The project will not have a significant impact on greenhouse gas emissions, therefore no mitigation is required.

H. HAZARDS AND HAZARDOUS MATERIALS. The project will not have a significant impact on hazards and hazardous materials, therefore no mitigation is required.

I. HYDROLOGY AND WATER QUALITY. The project will not have a significant impact on hydrology and water quality, therefore no mitigation is required.

J. LAND USE AND PLANNING. The project will not have a significant impact on land use and planning, therefore no mitigation is required.

K. MINERAL RESOURCES. The project will not have a significant impact on mineral resources, therefore no mitigation is required.

L. NOISE. The project will not have a significant impact on noise, therefore no mitigation is required.

M. POPULATION AND HOUSING. The project will not have a significant impact on population and housing, therefore no mitigation is required.

N. PUBLIC SERVICES. The project will not have a significant impact on public services, therefore no mitigation is required.

O. RECREATION. The project will not have a significant impact on recreation, therefore no mitigation is required.

P. TRANSPORTATION AND TRAFFIC. The project will not have a significant impact on transportation and traffic, therefore no mitigation is required.

Q. UTILITIES AND SERVICE SYSTEMS. The project will not have a significant impact on utilities and service systems, therefore no mitigation is required.

R. MANDATORY FINDINGS OF SIGNIFICANCE. As indicated throughout this Initial Study, impacts on all environmental resources were deemed to result in either ‘no impact,’ a ‘less-than-significant impact,’ or ‘less than significant with mitigation incorporation.’ As a result, the project with proposed mitigation measures would not create environmental effects that would 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 community, or eliminate important examples of major periods of California history or prehistory.

PUBLIC REVIEW PERIOD

The public review period begins on December 15, 2015 and ends on January 13, 2016. Comments on the Draft Mitigated Negative Declaration may be submitted to:

Amy French, Chief Planning Official
City of Palo Alto
250 Hamilton Avenue, 5th Floor
Palo Alto, CA 94301

_____ _____

Project Planner **Date**

INITIAL STUDY

Palo Alto Regional Water Quality Control Plant Sludge Dewatering and Loadout Facility Project

Prepared for

City of Palo Alto

250 Hamilton Ave, 5th Floor
Palo Alto, CA 94301

December 2015

2485 Natomas Park Drive
Suite 600
Sacramento, CA 95833

Contents

Section Page

Acronyms and Abbreviations

ADC	alternative daily cover
BAAQMD	Bay Area Air Quality Management District
BFP	Biosolids Facility Plan
BMP	best management practice
CalEEMod	California Emissions Estimator Model
CalRecycle	California Department of Resources Recycling and Recovery
CAPCOA	California Air Pollution Control Officers Association
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFC	California Fire Code
CFR	Code of Federal Regulations
CGP	Construction General Permit
CH_4	methane
City	City of Palo Alto
CO	carbon monoxide
CO_2	carbon dioxide
CWA	Clean Water Act
dBA	a-weighted decibels
DMG	Division of Mines and Geology
DOC	California Department of Conservation
FEMA	Federal Emergency Management Agency
GHG	greenhouse gas
IS	Initial Study
LRFP	City of Palo Alto Long Range Facilities Plan for the Regional Water Quality Control Plant Final Report
MGD	million gallons per day
MBTA	Migratory Bird Treaty Act
N_2O	nitrous oxide
NO_x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
O_3	ozone
OHWM	ordinary high water mark
PC	Planned Community

PF	Public Facilities
$PM_{2.5}$	particulate matter with aerodynamic diameter equal to or less than 2.5 microns
PM_{10}	particulate matter with aerodynamic diameter equal to or less than 10 microns
proposed project	sludge dewatering and loadout facility project
PRC	Public Resources Code
ROG	reactive organic gases
ROLM(E)	Research, Office and Limited Manufacturing Subdistrict - Embarcadero
RWQCP	Regional Water Quality Control Plant
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SOx	sulfur oxide
SRA	Shaded Riverine Aquatic (type of habitat)
SWPPP	stormwater pollution prevention plan
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WDR	waste discharge requirements

SECTION 1

Background Information

1.1 Project Title

Palo Alto Regional Water Quality Control Plant Sludge Dewatering and Loadout Facility Project

1.2 Lead Agency Name and Address

City of Palo Alto
250 Hamilton Avenue, 5th Floor
Palo Alto, CA 94301

1.3 Lead Agency Contact Person and Phone Number

Amy French, AICP
Chief Planning Official
City of Palo Alto
(650) 329-2336

1.4 Project Location

The project is located within the existing Regional Water Quality Control Plant (RWQCP), which is located in Palo Alto at the southern end of the San Francisco Bay in Santa Clara County, California. Access to the site is via U.S. Highway 101, and Embarcadero Rd, approximate latitude/longitude 37°27'8.39"N/ 122° 6'40.47"W. See Figure 1.

1.5 Project Sponsor's Name and Address

Mr. Padmakar M. Chaobal, P.E.
City of Palo Alto Regional Water Quality Control Plant
2501 Embarcadero Way
Palo Alto, CA 94303

1.6 General Plan Designation

The Palo Alto Comprehensive Plan 1998-2010 (updated June 2014) designates the project site as Major Institution/Special Facilities. This land use designation allows for institutional, academic, governmental, and community service uses and lands that are either publicly owned or operated as non-profit organizations.

1.7 Zoning

The project site is zoned as Public Facilities with a site and design review overlay, PF (D).

1.8 Background and Description of the Project

This Initial Study (IS) is being prepared by the City of Palo Alto (City) to identify and analyze the anticipated environmental impacts of the proposed sludge dewatering and loadout facility project (proposed project) in Palo Alto, California. The proposed project would include the construction and

operation of a sludge dewatering and truck loadout facility at the Palo Alto Regional Water Quality Control Plant (RWQCP). The City has prepared this IS as lead agency to comply with the California Environmental Quality Act (CEQA). This document also identifies Standard Project Conditions and mitigation measures that would be implemented to reduce project impacts to a less than significant level.

The City of Palo Alto has operated the RWQCP for more than 80 years. Originally constructed in 1934, the RWQCP is an advanced treatment facility that provides treatment and disposal of wastewater for the cities of Palo Alto, Mountain View, and Los Altos; the Town of Los Altos Hills; the East Palo Alto Sanitary District; and Stanford University. The RWQCP has undergone several expansions and upgrades throughout the years and currently has a designed average dry weather flow capacity of 39 million gallons per day (MGD) and a current average flow of about 18 MGD. The RWQCP effluent is partly discharged to the San Francisco Bay, and partly diverted to the RWQCP recycled water facility for reuse.

The City's vision for future biosolids management encompasses the need to address the RWQCP's aging solids handling infrastructure, to proactively comply with changing and uncertain regulations affecting biosolids, and to respond to community goals to increase the beneficial use of recovered organic resources city-wide. To respond to this, the City developed a Biosolids Facility Plan (BFP) that provides a long-term roadmap to enable the City to reliably and sustainably manage and beneficially reuse the wastewater solids produced at the RWQCP through year 2045. The BFP was developed as a companion document to the City of Palo Alto Long Range Facilities Plan for the Regional Water Quality Control Plant Final Report (LRFP) (Carollo Engineers, 2012). The BFP builds on the LRFP, allowing solids processing recommendations in the BFP to move forward in concert with other planned improvements at the RWQCP (as defined in the LRFP). Together, the two documents provide a comprehensive long-term plan for the RWQCP. The project analyzed in this is the dewatering and loadout facility, also known as Component 1 of the BFP. The dewatering and loadout facility would have independent utility as a backup sludge dewatering and haul off facility that can be used long-term even if additional BFP components are not built.

1.8.1 Project Features

The proposed project includes the construction of a new building to accommodate the installation of four belt filter presses. The project also includes mechanisms to convey the resulting cake from the belt filter presses to three storage bins, and to load the cake from the bins into trucks. These activities would occur within the new dewatering and truck loadout facility building. The new building would be a two story, cast-in-place concrete structure that would contain space for the belt filter presses, truck loadout, and other miscellaneous support areas. The facility would have a building footprint of approximately 7,500 square feet and a building height of 50 feet. The facility would include a robust system for odor control. The roof would include removable skylights over the belt filter presses for the purpose of facilitating future removal/replacement. These skylights would also provide light into the room, reducing the need for electric lights during the daytime. Various minor modifications to the yard piping system would be needed in order to accommodate the new facility. The location of the new dewatering and loadout facility within the existing RWQCP is shown on Figure 2. Building elevation drawings are shown on Figure 3.

In addition to the dewatering and truck loadout facility itself, a standby diesel engine generator will be installed to provide backup. The generator is sized to handle the load for the facility as well as other nearby facilities. Fuel storage will be provided by means of a sub-base fuel tank.

1.8.2 Project Construction

The sludge dewatering and loadout facility would be constructed over a period of approximately 24 months, beginning in April 2016 and continuing through Spring 2018. Project construction would

consist of site preparation and minor demolition activities; building construction; and equipment installation, startup, and testing. Most of the construction activities would occur during building construction, which would include modifications to nearby yard piping. Construction access would be from Embarcadero Way, and is expected to average 10 vehicles per day (counted as 20 *trips* per day) over the construction period.

1.8.3 Operations and Maintenance

The dewatering and truck loadout facility is part of the RWQCP solids processing system. The belt filter presses are large machines that use physical pressure to separate solids from the liquid waste stream (i.e., dewatering). All dewatering activities will occur within the new building, effectively isolating the continuous machinery operations from the environment. Compressed solids produced by the belt filter presses – the "cake" – would be conveyed to the bins for offsite disposal. Trucks would enter the building through a roll-up door on the southwest side, and would receive the waste load from the overhead bins. Up to five trucks per day (counted as *ten* trips per day) are expected to fully meet the waste load generated by the dewatering operations. The BFP provides several options for beneficial reuse within the Bay Area and surrounding counties.

The project does not require specialized maintenance, and all facilities would undergo routine maintenance as part of overall RWQCP operations.

1.8.4 Permits and Approvals

Construction of the proposed project would require permits and approvals from the following agencies.

- Bay Area Air Quality Management District (BAAQMD) – Authority to Construct/Permit to Operate
- State Water Resources Control Board (SWRCB) – Clean Water State Revolving Fund grant funding

LEGEND

Project Location

North

0 500 1,000

Approximate scale in feet

FIGURE 1
Project Location
Sludge Dewatering and Loadout Facility
City of Palo Alto
Palo Alto, CA

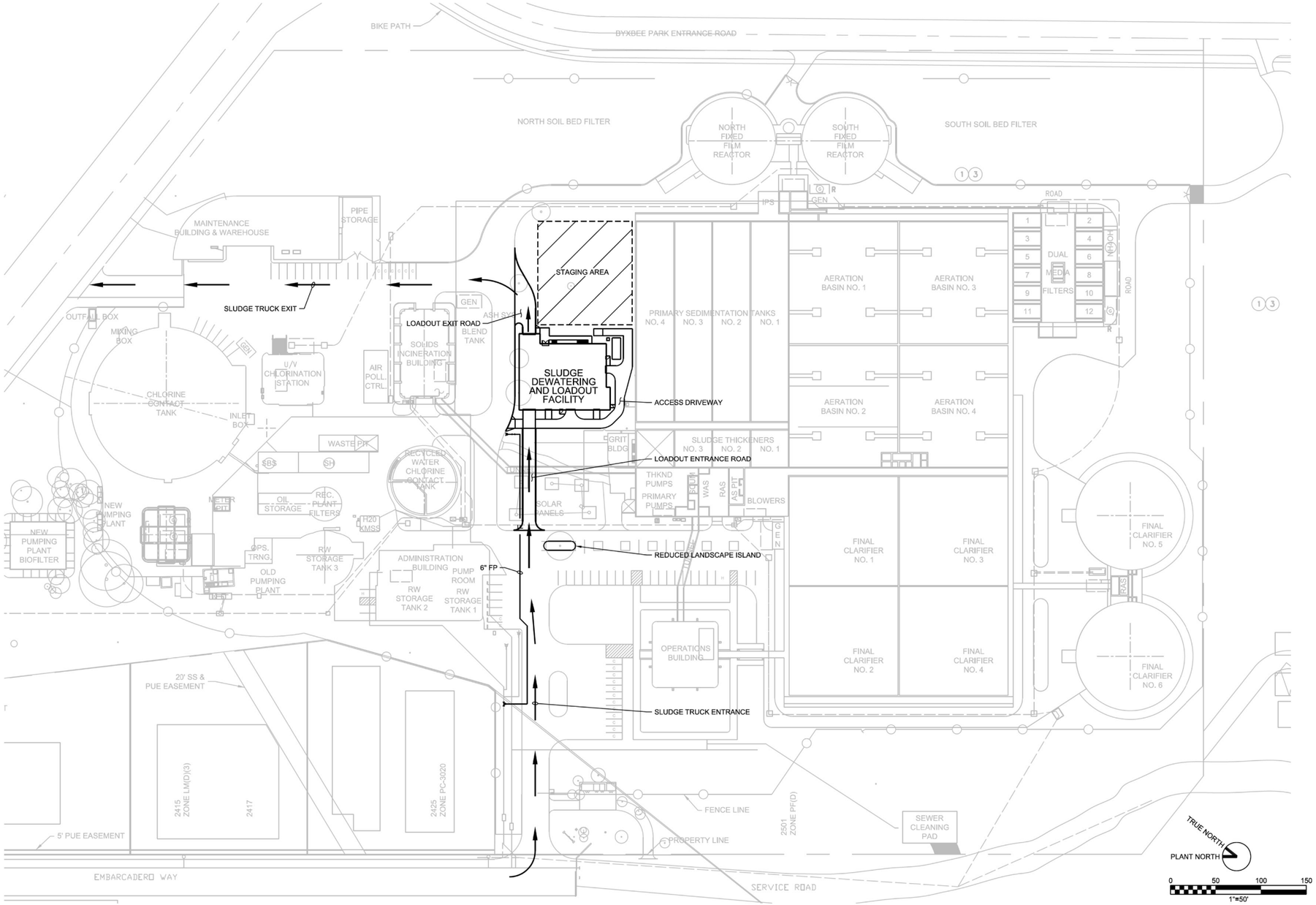


FIGURE 2
Site Plan
Sludge Dewatering and Loadout Facility
City of Palo Alto
Palo Alto, CA

FIGURE 3a
Architectural Elevations
Sludge Dewatering and Loadout Facility
City of Palo Alto
Palo Alto, CA

FIGURE 3b
Architectural Elevations
Sludge Dewatering and Loadout Facility
City of Palo Alto
Palo Alto, CA

SECTION 2

Environmental Determination

2.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, i.e. involve at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

2.2 Determination

Determination: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ 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 in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Title	Agency

SECTION 3

Evaluation of Environmental Impacts

3.1 Aesthetics

Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

3.1.1 Setting

The RWQCP is within an urbanized area of the City of Palo Alto, and the sludge dewatering and loadout facility would be located approximately in the middle of the existing plant. Adjacent land uses are a commercial/light industrial business park to the west, the Palo Alto Airport to the north, and Baylands and park uses to the east and south. Distances from the closest edge of the sludge dewatering and loadout facility site are as follows:

- California Self Storage adjacent to RWQCP, at nearest building – 195 feet.
- Business park office building across from RWQCP entrance, at building frontage – 475 feet.
- Palo Alto Airport, at entrance road – 850 feet.
- Palo Alto Baylands east of the site, at closest point of the trail – 500 feet.
- Palo Alto Baylands/Byxbee Park south of the site, at Embarcadero road entrance – 600 feet.

3.1.2 Impact Analysis

a. Would the project have a substantial adverse effect on a scenic vista?

NO IMPACT. The project is not located in an area that contains scenic vistas.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

NO IMPACT. The proposed project is not located within a state scenic highway and does not contain scenic resources.

c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

LESS-THAN-SIGNIFICANT IMPACT. The project site is located on RWQCP site. Views toward the site from most nearby uses (e.g., mini-storage, office buildings, airport) have low visual character and quality consistent with the low-density urban setting. High-quality views from the adjacent Palo Alto

Baylands, including an unpaved trail, are *toward* the bay itself. Inland views from the Baylands are dominated by Embarcadero Road, and by two prominent tank features on the RWQCP site – the north and south fixed film reactors. The new sludge dewatering and loadout facility may be visible from portions of the Baylands, most likely from due north at the trail access from Embarcadero Road. However, the scale of the building would be consistent with other visible RWQCP features such as the solids incineration building. Additionally, the project is required to obtain site and design review approval from the City of Palo Alto. Meeting the City's approval findings would ensure the project's aesthetic compatibility with the surrounding area. Because the project would be located on an existing RWQCP, would be similar in scale to existing features, and would meet the City's approval findings, the visual character and quality of views from the Palo Alto Baylands would not be substantially degraded. Impacts would be less than significant.

d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

NO IMPACT. The project is located within the existing RWQCP site, and does not include any additional lighting other than incidental, downward-facing safety lighting. Therefore there would be no impact.

3.2 Agriculture and Forest Resources

Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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 use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code (PRC) Section 12220(g) or timberland (as defined in PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.2.1 Setting

The dewatering and loadout facility would be constructed on the already existing Palo Alto RWQCP. The RWQCP location is designated as Major Institution/Special Facilities by the City of Palo Alto.

3.2.2 Impact Analysis

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

NO IMPACT. The project is not located on or near land designated for agricultural use as defined by the Farmland Mapping and Monitoring Program or the Williamson Act. The project is located on an existing wastewater treatment plant site in a commercial/industrial zoned area. No farmlands are present nor would any agricultural lands be converted to non-agricultural use; therefore there would be no impact.

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

NO IMPACT. The proposed project is not located on land zoned for agriculture or under a Williamson Act contract.

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC section 1220(g)) or timberland (as defined in PRC section 4526)?

NO IMPACT. No forest or timber land is present at the project site or in the project vicinity nor would be affected by the project.

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

NO IMPACT. No forest land is present at the project site or in the project vicinity nor would be affected by the project.

e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in the conversion of Farmland, to non-agricultural use?

NO IMPACT. The project would not involve other changes that could result in the conversion of farmland to non-agricultural use.

3.3 Air Quality

Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
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 which exceed quantitative thresholds for ozone (O3) precursors)?	☐	☐	☒	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

3.3.1 Setting

The proposed project is located in Santa Clara County within the San Francisco Bay Area air basin. Santa Clara County is currently designated as nonattainment for the federal standards for ozone and particulate matter with aerodynamic diameter equal to or less than 2.5 microns ($PM_{2.5,}$), and maintenance for carbon monoxide (CO). Under state standards, the project area is designated as nonattainment for ozone, particulate matter with aerodynamic diameter equal to or less than 10 microns (PM_{10}), and $PM_{2.5}$. The project area is designated as attainment/unclassified for all other pollutants.

Construction activities have the potential to generate air pollutants that degrade air quality and increase local human exposure to air contaminants. The Bay Area Air Quality Management District (BAAQMD) has published guidelines for evaluating, measuring, and mitigating a project's air quality impacts, including impacts associated with criteria air pollutants (such as ozone and particulate matter) and toxic air contaminants (BAAQMD, 2012).

3.3.2 Impact Analysis

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

NO IMPACT. The most recent air quality plan prepared by BAAQMD in response to federal planning requirements is the *San Francisco Bay Area 2001 Ozone Attainment Plan for the 1-hour National Ozone Standard* (BAAQMD, 2001). BAAQMD also adopted the *Bay Area 2010 Clean Air Plan* in September 2010, which provides an integrated, multi-pollutant control strategy to reduce emissions of ozone, particulates, air toxics, and greenhouse gases (GHGs) (BAAQMD, 2010a). The project would be constructed in compliance with the applicable BAAQMD regulations and policies and best management practices (BMPs), and would be implemented to reduce criteria pollutant emissions. Therefore, project activities would be consistent with the regional and local air quality planning strategy, with no impact to air quality.

b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

LESS-THAN-SIGNIFICANT IMPACT. Construction of the proposed project would cause temporary minor increases in ambient air pollutant concentrations. BAAQMD adopted new CEQA thresholds of significance in June 2010 (BAAQMD, 2010b). Although the adoption of the new thresholds are the subject of recent judicial actions (BAAQMD, 2012), the Lead Agency concluded that Appendix D of the BAAQMD CEQA Air Quality Guidelines (BAAQMD, 2010b), in combination with BAAQMD's *Revised Draft Options and Justification Report* (BAAQMD, 2009), provide substantial evidence to support the BAAQMD-recommended thresholds. Therefore, the BAAQMD 2010 thresholds were used in this analysis to evaluate the significance of the project's impacts.

Short-term construction emissions of ozone precursors (oxides of nitrogen [NOx] and reactive organic gases [ROG]), CO, oxides of sulfur (SOx), PM_{10}, and $PM_{2.5}$ were evaluated. Construction emissions were estimated using methodology consistent with the California Emissions Estimator Model (CalEEMod) (California Air Pollution Control Officers' Association [CAPCOA], 2013). Emissions from onroad vehicles (delivery trucks, material haul trucks, pickup trucks, and worker commute vehicles) and offroad vehicles (fuel and water trucks) were calculated using emission factors from EMFAC2014 for the year 2016 vehicle fleet in Santa Clara County and default trip distances from the *CalEEMod User's Guide* (ENVIRON, 2013). Fugitive dust emissions (PM_{10} and $PM_{2.5}$) from on- and offroad vehicle travel were estimated using methodology from *AP-42* (U.S. Environmental Protection Agency [EPA], 2011; EPA, 2006). Emissions from construction equipment were calculated using default horsepower ratings, load factors, and emission factors from the *CalEEMod User's Guide* (ENVIRON, 2013). Fugitive dust emissions (PM_{10} and $PM_{2.5}$) from disturbed surfaces and

material handling, as either cut/fill or aggregates, were estimated using methodology from the *Software User's Guide: URBEMIS2007 for Windows* (Jones & Stokes Associates, 2007) and/or the *CalEEMod User's Guide* (ENVIRON, 2013). Off-gassing emissions (ROG) from paving activities were estimated using emission factors from the *CalEEMod User's Guide* (ENVIRON, 2013). Project-specific construction schedules and equipment/vehicle usage were used to determine the sequence of activities and potential overlap in resulting construction emissions. Appendix A contains the complete construction emission calculations and assumptions used. Estimated construction emissions would be below BAAQMD thresholds, as shown in Table 1.

table 1 Project Construction Emissions and Comparisons to 2010 BAAQMD CEQA Thresholds

	ROG (lb/day)	**CO (lb/day)**	**NO_x (lb/day)**	**SO_x (lb/day)**	**PM_{10} Exhaust (lb/day)**	**$PM_{2.5}$ Exhaust (lb/day)**	**PM_{10} Fugitive Dust (lb/day)**	**$PM_{2.5}$ Fugitive Dust (lb/day)**
2016 (Average Daily)	4	25	47	0.1	2	2	80	15
BAAQMD 2010 Threshold (Daily Average Emissions, lb/day)	54	N/A	54	N/A	82	54	N/A	N/A
Exceed BAAQMD CEQA Threshold?	No	N/A	No	N/A	No	No	N/A	N/A

Notes:

Thresholds are from BAAQMD CEQA Guidelines (BAAQMD, 2010b)

N/A = not applicable

Construction emissions would be below the BAAQMD CEQA thresholds. During construction, the project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. In addition, the proposed project would implement applicable criteria pollutant control measures identified by the BAAQMD in its latest CEQA guidelines (BAAQMD, 2012). Applicable construction emission control measures may include, but are not limited to, the following:

- All exposed surfaces (for example, parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered twice per day.
- All haul trucks transporting soil, sand, or other loose material offsite shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once a day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of *California Code of Regulations*). Clear signage shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- A publicly visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Once the few facility is operational, all equipment would be powered by electricity with the exception of the diesel-powered emergency backup generator. The generator would be permitted by the BAAQMD to operate on an emergency basis, with limited periodic testing, consistent with Air Resources Board emissions standards. In addition, there would be negligible emissions from the five trucks per day used to haul the dewatered solids for offsite reuse.

Construction and operation of the project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation and therefore would have less-than-significant impacts.

c. Would the project 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 which exceed quantitative thresholds for ozone precursors)?

LESS-THAN-SIGNIFICANT IMPACT. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable (BAAQMD, 2010c). Projects that do not exceed the significance thresholds are not considered to be cumulatively significant. As described above, project construction emissions would be lower than the BAAQMD significance thresholds. Additionally, the construction emissions would be temporary, and the maximum daily emissions would occur for only a portion of the construction period. Because the project would emit pollutants below the thresholds of significance for an individual project, it would not result in a cumulative considerable emission increase of nonattainment pollutants (PM_{10}, $PM_{2.5}$, and the ozone precursors NO_x and ROG), and the air quality impact on nonattainment criteria pollutants would be less than significant.

d. Would the project expose sensitive receptors to substantial pollutant concentrations?

LESS-THAN-SIGNIFICANT IMPACT. As discussed in previous sections, project construction emissions would be temporary and below the BAAQMD CEQA thresholds and therefore would not expose nearby receptors to a substantial amount of criteria pollutants. Exhaust emissions from construction equipment contain toxic air contaminants, such as diesel particulate matter, that have potential cancer and non-cancer chronic health effects.

The project site is bounded by office/commercial land use on the west side, and otherwise by open space. The closest residential receptor is approximately 3,275 feet to the northwest, and the closest school is more than 1 mile from the site. Given the distance, short-term construction emissions would not expose sensitive receptors to substantial pollutant concentrations. In addition, the project construction is required to implement the BMPs and follow emission control measures, including minimizing idling times and maintaining equipment in good condition. These measures will help minimize any potential exposure to construction-related pollutants. Therefore, impacts would be less than significant.

e. Would the project create objectionable odors affecting a substantial number of people?

LESS-THAN-SIGNIFICANT IMPACT. The sludge dewatering and loadout facility would be a new source of odor at the RWQCP. In addition, changes to overall RWQCP sludge handling processes may affect odor generation from other units that feed sludge to the new dewatering facility. Existing RWQCP operations include odor-control treatments such as adding sodium hypochlorite to sludge prior to storage. These practices would continue under the proposed project. The project also includes the addition of an odor-control system, likely a two-stage system consisting of a biotrickling filter followed by a mixed media adsorber. This type of system is proven to be effective in sharply reducing the concentration of odorous substances in wastewater treatment facilities.

Odor is regulated by the BAAQMD (Regulation 7 – Odorous Substances) as a two-part process. First, thresholds are triggered only if the BAAQMD receives odor complaints from at least 10 individuals in a 90-day period. If sufficient complaints are received, then the generator must demonstrate that odors at the property line are not odorous after dilution with four parts of odor-free air. In other words, a dilution-to-threshold ratio (D/T) of no greater than 5 must be met. Air dispersion modeling conducted for the project indicates that odors at the property line would be substantially less than the 5 D/T threshold. Based on the expected performance of the odor-control system and the results of dispersion modeling, odor impacts would be less than significant.

3.4 Biological Resources

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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 California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c.	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (CWA) (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local or regional habitat conservation plan?	☐	☐	☐	☒

3.4.1 Setting

The project site is within a highly developed area in Palo Alto, within the middle of the existing RWQCP. One biotic habitat was identified within the project area: developed/ruderal lands.

Vegetation. The lands within the RWQCP including the project footprint are developed and accented by patches of ornamental shrubs and trees such as privet (*Ligustrum vulgare*), myoporum (*Myoporum laetum*), and blue gum (*Eucalyptus globulus*). Ruderal vegetation includes invasive forbs and nonnative annual grasses including Italian thistle (*Carduus pycnocephalus*), black mustard (*Brassica nigra*) and wild oats (*Avena fatua*). Native natural communities do not occur on the site. The boundaries of the Palo Alto Baylands nature preserve occur approximately 500 feet to the east and 800 feet to the south of the site. A tall, dense thicket of privet trees line the eastern boundary of the site creating a natural barrier between the site, the adjacent roadway (Embarcadero Road), and the preserve lands to the east. The southern portion of the RWQCP developed lands is lined with coast live oak trees (*Quercus agrifolia*) and Embarcadero Road separate the project site and the preserve lands to the south. To the north and northwest is the Palo Alto Airport of Santa Clara County and the Palo Alto Golf Course. Additional commercial properties occur to the west.

Wildlife. Developed areas can support certain wildlife species adapted to the unique nesting and foraging opportunities found there, but wildlife abundance and diversity is generally low in these areas. Striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and Virginia opossum (*Didelphis virginiana*) occur regularly in urban habitats. Bird species adapted to urban landscapes include house finch (*Carpodacus mexicanus*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), house sparrow (*Passer domesticus*), and rock dove (*Columba livia*).

The Palo Alto Baylands preserve is home to a variety of native resident wildlife species. Common birds include great and snowy egrets (*Ardea alba* and *Egretta thula*), great blue heron (*Ardea herodias*), black-crowned night heron (*Nycticorax nycticorax*), green-winged teal (*Anas crecca*), mallard (*Anas platyrhnchos*), northern pintail (*Anas acuta*), American coot (*Fulica americana*), killdeer (*Charadrius vociferus*), black-necked stilt (*Himantopus mexicanus*), and American avocet (*Recurvirostra americana*). Small mammals such as red fox (*Vulpes vulpes*), deer mouse, and California vole are also known to occur. Populations of two federally-and state endangered wildlife species, the California clapper rail (*Rallus longirostris obsoletus*) and saltmarsh harvest mouse (*Reithrodontomys raviventris*), occur in the tidal salt marsh habitats within the region. The aquatic habitat is also known to be nursery grounds for several special-status salmonid species including Central California Coast steelhead (*Oncorhynchus mykiss*). Although the project site is within 500 feet of the preserve, native marshland and aquatic habitats are absent from the site.

Special-Status Species. The developed/ruderal lands identified on the project site are limited in size and generally disturbed characterized by compact gravel surfaces, thereby precluding occurrence of most special-status species in the region, which typically occur in open grassland, marshlands, and woodlands. Furthermore, the sparely vegetated areas onsite are dominated by nonnative and invasive plant species, which significantly reduces their capacity to support special-status wildlife species. Therefore, special-status species known from the region including the California clapper rail and saltmarsh harvest mouse, are not expected to occur at the project site. Special-status bird species known from the region may fly over the site when migrating from the southern end to the north end of the preserve. However, these sensitive birds are not expected to stop and forage within the project site due to the lack of suitable foraging habitat and increased human activity.

The California Natural Diversity Database was queried for special-status species records within a 5-mile radius of the project site (CDFW, 2015). None of the plant species known from the region are expected to occur as suitable habitat conditions including alkaline and clay soils within the project site do not

exist. In addition, special-status wildlife species, including the federally- and state-endangered California clapper rail and saltmarsh harvest mouse, are not expected to occur onsite as suitable native habitats including coastal salt marshlands, are not present. The closest known occurrences for both the California clapper rail and saltmarsh harvest mouse are approximately 1 mile northeast of the project site within salt marsh habitats just south of the Dumbarton Bridge.

Common bird species adapted to urban lands may nest in the ornamental vegetation onsite during the nesting season (February to August). Nesting birds are covered under the Migratory Bird Treaty Act (MBTA) and would be considered a sensitive resource if active nests occur onsite during construction.

Ordinance-Size Trees. The City of Palo Alto Tree Ordinance defines trees in three categories according to the Palo Alto Municipal Code, Title 8, Trees and Vegetation: 1) protected trees; 2) street trees; and 3) designated trees. Each category is defined below.

- Category 1: All coast live oak, valley oak (*Quercus lobata*) trees that are 11.5-inches or greater in diameter (36-inches in circumference measured at 54-inches above natural grade) and coast redwood (*Sequoia sempervirens*) trees that are 18-inches or greater in diameter (57-inches in circumference measured at 54-inches above natural grade) and Heritage Trees, individual trees of any size or species designated as such by City Council.
- Category 2: All trees growing within the street right-of-way (publicly-owned), outside of private property.
- Category 3: All trees, when associated with a development project, that are specifically designated by the City to be saved and protected on a public or private property which is subject to a discretionary development review (such as a variance, home improvement exception, architectural review, site and design, subdivision, etc.). Tree removal is considered a minor change to the existing site plan—and requires review approval from the Planning Division.

Three blue gum trees ranging from 30-35 inches in circumference and six coast redwood plantings ranging from 15 to 18 inches in circumference measured at 54-inches above natural grade were observed onsite. The six coast redwood trees were planted by the RQWCP as part of a tree experiment using recycled water. The nine trees onsite would not fall under Categories 1 or 2 of the tree ordinance, and would not likely fall under Category 3.

3.4.2 Impact Analysis

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, 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 Game or U.S. Fish and Wildlife Service?

LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED.

Impacts on Special-Status Plant Species. The project area does not contain suitable habitat for special-status plants as suitable habitat conditions including alkaline and clay soils do not exist onsite. The reconnaissance survey was conducted during the blooming periods for most species, and none were observed within or adjacent to the project site. In addition, none of these species are known from past occurrences to be within or adjacent to the project site (CDFW, 2015). Therefore, special-status plant species are presumed to be absent and no further surveys are warranted. Impacts on these species are considered to be negligible.

Impacts on Wildlife, Including Special-Status Species. Several special-status wildlife species have the potential to occur in the eastern and southern areas of the project region within the Palo Alto Baylands preserve; however none of these species are expected to occur onsite due to the developed nature of the site, lack of suitable marshland habitat, and the increased human activity

associated with the existing RWQCP operations. Special-status birds may occur as occasional flyovers during the spring and fall migration periods, but because these special-status bird species are not likely to forage or nest in the project area, the project construction activities would not result in significant impacts. In addition, avoidance measures, including preconstruction nesting surveys, biological monitoring, and establishing construction-free buffer zones as described below would be implemented during the nesting season (February through August) to protect birds covered under the MBTA that may nest within the project area. Therefore, impacts on resident and migratory birds in the area would be reduced to a less-than-significant level.

Wildlife currently found in and around the project site is likely tolerant to levels of disturbance typically associated with ongoing operations of the RWQCP, air traffic from the existing airport to the north, and surrounding industrial and commercial development. The visual and acoustic disturbance to wildlife associated with the proposed project is not expected to be significantly higher than what currently exists, and wildlife in the adjacent areas are expected to habituate to these new levels of disturbance. The RWQCP is closed at 5pm; therefore, impacts on nocturnal wildlife would not be expected.

Avoidance Measures for Special-Status Wildlife Species. The proposed project includes the following avoidance and minimization measures to reduce impacts on species covered by the MBTA during construction to a less-than-significant level:

- Pre-construction nesting surveys will be conducted before undertaking work during the nesting season (February through August). Any nest found within 50 feet for songbirds and 300 feet for raptors will be avoided, and a designated construction-free buffer zone will be established until the nests are no longer active.
- Biological monitoring of work activities for active bird nests found during the nesting season will be conducted by a qualified biologist.
- A qualified biologist will conduct onsite informational meetings with all construction personnel before construction begins. The purpose of these training sessions will be to familiarize construction personnel with the procedures regarding nesting birds they are to follow if they are encountered.

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

NO IMPACT. Because all construction activities associated with the proposed project would occur within graveled surfaces, paved roads, and other previously disturbed areas, no temporary or permanent construction impacts or ongoing operations impacts are anticipated to sensitive habitats identified by CDFW or USFWS.

c. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

NO IMPACT. Federally protected wetlands, as defined by Section 404 of the Clean Water Act, do not occur within the project area; therefore, no permanent or temporary impacts would occur as a result of construction. In addition, natural water features do not occur within the project area. Therefore, no permanent or temporary impacts on wetland or other aquatic resources are expected.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

NO IMPACT. Because all construction activities associated with the proposed project would occur within the existing developed RWQCP site, the project would not disturb any natural habitats including riparian, wetland, or aquatic habitats used by local wildlife species. Therefore, the proposed construction and operation activities would not interfere with the movement of native resident or migratory fish, wildlife species, native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites because these are not currently onsite. Changes in vegetation from removal of nonnative, invasive herbaceous species would not present significant barriers to movement of fish or wildlife.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

LESS-THAN-SIGNIFICANT IMPACT. The project would not conflict with any local policies or ordinances protecting biological resources. Tree pruning may be required for construction access and up to nine non-ordinance-sized trees may be removed including three blue gum trees and six coast redwood plantings previously planted as part of a recycled water use experiment conducted by the RWQCP. Tree removal would not conflict with the City of Palo Alto Tree Ordinance.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

NO IMPACT. The project would not conflict with the provisions of a Habitat Conservation Plan or Natural Community Conservation Plan, or other governmental habitat conservation plan. The site is outside of the boundaries of the nearest Habitat Conservation Plan (Santa Clara Valley Habitat Plan); therefore, there would be no impact.

3.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

3.5.1 Setting

The proposed project site is within the existing City of Palo Alto RWQCP, which is completely developed and paved. The original ground surface is not visible. Prior to human settlement, the project area consisted of coastal littoral land cover characterized by a series of microenvironments including estuaries, bays, marshes, and grassy terraces. Although it was originally salt marsh, the RWQCP property

is situated entirely on imported fill that was placed from the early 1930s to the 1950s for the development of the RWQCP and other nearby uses including the airport and golf course (William Self Associates, 2007). Although the site has been used for wastewater treatment purposes since 1934, no pre-1950s buildings remain on the site.

3.5.2 Impact Analysis

a. Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

NO IMPACT. A records and information search was conducted at the Northwest Information Center at Sonoma State University. The results from this search indicated that there were no recorded historical sites within the project area or within 0.25 mile of the project. Additionally, the record search showed that three cultural resources were conducted within 0.25 mile of the project area; however, no cultural materials were identified in any of the three studies (William Self Associates, 2007). Additionally, a field study of the project area did not identify any historical resources within or around the project site. There would be no impact to historical resources as a result of this project.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

LESS THAN SIGNIFICANT IMPACT. The project site and its surrounding area was prehistorically open marshland, but is now completely paved and developed. Given the location of the project area and its relation to its original (native) context along the marshy bank of the Palo Alto Baylands, it is possible that the prehistoric people utilized the project area for hunting and raw material procurement, but it's less likely that it would have been a suitable location for permanent habitation (William Self Associates, 2007). A records and information search conducted at the Northwest Information Center at Sonoma State University indicated that no previously recorded archaeological resources have been identified in the project area or within 0.25 mile of the surrounding area (William Self Associates, 2007). As such, there is a low potential for exposing significant archaeological resources during construction. Additionally, the record search showed that three cultural resources were conducted within 0.25 mile of the project area; however, no cultural materials were identified in any of the three studies (William Self Associates, 2007). If archeological resources are exposed during construction, work would stop in accordance with applicable local, state, and federal regulations until such time that the resources can be evaluated by a qualified archaeologist and appropriate mitigation actions can be implemented. Based on these standard requirements, impacts would be less than significant.

c. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

NO IMPACT. No impacts to paleontological resources are expected because the project site is already highly disturbed as a result of past activities. Work would be done either in an existing roadway or in areas previously disturbed. Since the project site and much of the surrounding area has been previously graded and developed, these deposits are likely to have a low potential to contain fossil resources, and are thus, considered to have little to no paleontological sensitivity.

d. Would the project disturb any human remains, including those interred outside of formal cemeteries?

LESS THAN SIGNIFICANT IMPACT. No recorded instances of prehistoric or historic human remains are known to be within or adjacent to the project area. In the event of an unexpected discovery of human remains, California Health and Safety Code (Section 7050.5[b]) would be followed and the County

Coroner would be notified. Based on these standard requirements, impacts would be less than significant.

3.6 Geology and Soils

Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on 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 and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

3.6.1 Setting

A geotechnical analysis was conducted for the project area (CH2M HILL, 2015). The project site is located in Palo Alto, which is a relatively flat portion of the Santa Clara Valley. The project site has an elevation of approximately 10 feet. The geotechnical analysis described the subsurface conditions as consisting of medium dense to very dense sand and soft to stiff lean clay. While the entire state is a seismically active area, the project site is not located within any California-designated Alquist-Priolo Zone.

3.6.2 Impact Analysis

a. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on 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 and Geology Special Publication 42.

NO IMPACT. There are no Alquist-Priolo Earthquake Fault Zones that have been designated at the Palo Alto RWQCP. Additionally, the project site is not identified by the County of Santa Clara as being in a County Fault Rupture Hazard Zone. Therefore there would be no impact as a result of this project.

ii) Strong seismic ground shaking?

LESS-THAN-SIGNIFICANT IMPACT. It is expected that the site would be subject to seismic events over the life of the project. The project is designed to incorporate standard construction specifications and recommendations consistent with the 2013 California Building Code (CBC, 2013) and as recommended by the American Society of Civil Engineers' ASCE-7 – *Minimum Design Loads for Buildings and Other Structures* (ASCE, 2010). Compliance with these standards would ensure that the project could withstand these types of events; therefore, impacts resulting from seismic events would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

LESS-THAN-SIGNIFICANT IMPACT. The project location consists of subsurface soils that are not susceptible to liquefaction (CH2M HILL, 2015). While it is possible that some of the soils identified in the geotechnical memorandum have the possibility to liquefy during an earthquake, the overall potential for liquefaction is low. Additionally, the project is designed to incorporate standard construction specifications and recommendations consistent with the 2013 California Building Code (CBC, 2013) and as recommended by the American Society of Civil Engineers' ASCE-7 – *Minimum Design Loads for Buildings and Other Structures* (ASCE, 2010). Therefore, there would be a less-than-significant impact as a result of this project.

iv) Landslides?

NO IMPACT. The project location is flat with no potential for landslides or mudflows.

b. Would the project result in substantial soil erosion or the loss of topsoil?

LESS-THAN-SIGNIFICANT IMPACT. The project site is flat, with little potential for soil erosion. As described in Section 3.9.2(a), erosion and water quality impacts would be minimized during construction by following standard practices for erosion control. Therefore, impacts would be less than significant.

c. Would the project be located on a geologic unit or soils that is unstable, or that would become unstable as a result of the project, and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

LESS-THAN-SIGNIFICANT IMPACT. The project would not be located on a geologic unit or soils that are unstable or that would become unstable as a result of the project, potentially resulting in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse. The project is designed to incorporate standard construction specifications and recommendations consistent with the 2013 California Building Code (CBC, 2013) and as recommended by the American Society of Civil Engineers' ASCE-7 – *Minimum Design Loads for Buildings and Other Structures* (ASCE, 2010). Additionally, the project would be completed using the most up-to-date construction and engineering techniques to ensure safe construction; therefore, there would be a less-than-significant impact.

d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

LESS-THAN-SIGNIFICANT IMPACT. The project would be designed and constructed to avoid or minimize potential damage from expansive soils. As stated in the geotechnical analysis (CH2MHILL, 2015), the project would incorporate standard construction specifications and recommendations consistent with the 2013 California Building Code (CBC, 2013) and as recommended by the American Society of Civil Engineers' ASCE-7 – *Minimum Design Loads for Buildings and Other Structures* (ASCE, 2010). Based on complying with these requirements, impacts would be less-than-significant.

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

NO IMPACT. The project does not include the use of septic tanks for alternative wastewater disposal systems. Therefore, there would be no impact.

3.7 Greenhouse Gas Emissions

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
a.	Generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b.	Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?	☐	☐	☐	☒

3.7.1 Setting

Various gases in the earth's atmosphere play an important role in moderating the earth's surface temperature. Solar radiation enters earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. GHGs are transparent to solar radiation, but are effective in absorbing infrared radiation. Consequently, radiation that would otherwise escape back into space is retained, resulting in a warming of the earth's atmosphere. This phenomenon is known as the greenhouse effect.

GHGs include both naturally occurring and anthropogenic gases that trap heat in the earth's atmosphere. GHGs include, but are not limited to, carbon dioxide (CO_2), methane, nitrous oxide, hydrochlorofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Although there is disagreement as to the speed of global warming and the extent of the impacts attributable to human activities, the majority of the scientific community now agrees that there is a direct link between increased emission of GHGs and long-term global temperature.

In the United States, the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the largest category of GHG-emitting sources (CARB, 2013). In 2011, the annual California statewide GHG emissions were 448.11 million metric tons of CO_2-equivalent (CARB, 2013). The transportation sector accounts for about 38 percent of the statewide GHG emissions

inventory. The electric power sector accounts for about 19 percent of the total statewide GHG emissions inventory. The dominant GHG emitted is CO_2, primarily from fossil fuel combustion.

3.7.2 Impact Analysis

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

LESS-THAN-SIGNIFICANT IMPACT. There are no GHG emission thresholds for construction activities in BAAQMD's 2010 thresholds of significance. Rather, the guidelines suggest evaluating impact significance in relation to meeting GHG reduction strategies. The operational threshold for GHGs from stationary source operations is 10,000 metric tons per year. The threshold for other non-stationary source projects is 1,100 metric tons per year (BAAQMD, 2010c).

GHG impacts from the proposed project were based on the GHG emissions from offroad construction equipment and on- and offroad vehicle usage during the construction period. CO_2 emissions from offroad construction equipment and on- and offroad vehicles were estimated using methodology described in Section 3.3.2. The project is not expected to result in measurable emissions of other GHGs. Appendix A contains the complete construction calculations used to assess GHG impacts.

Table 2 Project Construction Greenhouse Gas Emissions

	CO_2 (Million Metric Tons/Year)
2016 through 2018 Emissions	0.001
2007 BAAQMD Inventory	95.8
2010 State Inventory	448.11
State GHG Goal 2020 (Assembly Bill 32)	427

The GHG emissions from project construction would be temporary and would occur only during the approximately 24 months of construction from April 2016 through Spring 2018. GHG emissions from construction would be temporary and negligible compared to the local and State GHG inventory.

Once the few facility is operational, all equipment would be powered by electricity with the exception of the diesel-powered emergency backup generator. The generator would be permitted by the BAAQMD to operate on an emergency basis, with limited periodic testing, consistent with Air Resources Board emissions standards. In addition, there would be negligible emissions from the five trucks per day used to haul the dewatered solids for offsite reuse.

The minimal GHG emissions during construction and operation are not expected to contribute substantially to the regional GHG emissions inventory, or contribute to global climate change. Therefore, the project would result in a less-than-significant impact from GHG emissions.

b. Would the project conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

NO IMPACT. The BAAQMD established a climate protection program in 2005 to explicitly acknowledge the link between climate change and air quality, and has prepared a GHG emissions inventory to support its climate protection activities. Based on the BAAQMD inventory, total GHG emissions within the San Francisco Bay Area air basin were 95.8 million metric tons in 2007 (BAAQMD, 2010d).

As shown in Table 2, the short-term construction GHG emissions would be negligible compared to the State or BAAQMD GHG inventories and GHG emissions goal for 2020. The project would not interfere with the Assembly Bill 32 Scoping Plan and the long-term goal of Assembly Bill 32 to reduce GHG emissions to 1990 levels by 2020. The proposed project would not conflict with applicable plans, policies, or regulations intended to reduce GHG emissions and would, therefore, have no impact on climate change.

3.8 Hazards and Hazardous Materials

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d.	Be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
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 result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
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?	☐	☐	☐	☒
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.8.1 Setting

The project is located at the existing RWQCP, a publicly owned treatment works managed by the City of Palo Alto. The RWQCP uses various chemicals as part of its normal operations. The project involves changes in the solids dewatering and handling processes, and would not affect other wastewater treatment operations including most of the existing chemical uses.

3.8.2 Impact Analysis

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

LESS-THAN-SIGNIFICANT IMPACT. Project construction will involve the use of construction equipment at the site for approximately 17 months. The type of equipment used would be typical for industrial building construction, and could result in some potential for release of hazardous materials such as fuel, oil, and similar pollutants derived from vehicle use. Given the small size of the construction project and the limited number of vehicles expected to be required for construction, the potential for impacts is small. In addition, the job site would be maintained consistent with standard construction requirements for pollution and water quality control. For these reasons, impacts would be less than significant. Any residual pollution from construction equipment could be transported by stormwater runoff, but all onsite drainage is captured and treated as part of the wastewater treatment system - this would be effective for pollutant removal.

Project operations would involve the transport of biosolids from the project site for offsite beneficial reuse. Potential impact would be limited as biosolids would be treated consistent with applicable federal regulations. California's biosolids program is regulated by USEPA Region IX pursuant to 40 Code of Federal Regulations (CFR) 503, "Standards for the Use and Disposal of Sewage Sludge" (i.e., the 503 Rule). The 503 Rule establishes standards such as pollutant limits, pathogen reduction requirements, and vector attraction reduction requirements. Therefore, impacts would be less than significant.

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?

LESS-THAN-SIGNIFICANT IMPACT. See response to "a" above.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

NO IMPACT. The proposed project is not within one-quarter mile of any existing or proposed school, therefore, there would be no impacts.

d. Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

NO IMPACT. The project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and is not expected to create a significant hazard to the public or environment. An investigation of the Envirostor database, also known as the Cortese List, did not identify any contaminated sites within the project area (California Department of Toxic Substances Control, 2015).

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 result in a safety hazard for people residing or working in the project area?

LESS-THAN-SIGNIFICANT IMPACT. The RWQCP is 750 feet south of the Palo Alto Airport. Based on Santa Clara County General Plan requirements for land uses adjacent to the airport, all structures on the RWQCP are restricted to heights of less than 150 feet. Because the new sludge dewatering and loadout facility would be less than 150 feet in height, impacts would be less than significant.

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?

NO IMPACT. The project is not located near a private airstrip; therefore, impacts would be less than significant.

g. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

NO IMPACT. The project would be constructed within the existing RWQCP, and does not include design features that would impede emergency access. City of Palo Alto Ordinance 1111 was passed in November 2007 and lists adoption of the California Fire Code (CFC) and changes required for the City. In Sections 15.04.150 and 15.04.160, the ordinance states that the fire access road should be 20 feet wide, comply with the requirements of Section 503.1.1 of the CFC, and extend within 150 feet of all portions of the facility and all portions of the exterior walls of the first story of the building. The existing access road along the north side of the new building is 25 feet wide and the furthest point on the building is approximately 143 feet away. Therefore, the existing road meets the requirements for fire access and additional roads are not required. There would be no impacts as a result of this project.

h. Would the project 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. The project would be constructed within the property of the existing RWQCP, and is 500 feet away from the nearest open space region. Therefore, there would be no impact to wildlands as a result of this project.

3.9 Hydrology and Water Quality

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
a.	Violate any water quality standards or waste discharge requirements (WDR)?	☐	☐	☒	☐
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)?	☐	☐	☐	☒
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 onsite or offsite?	☐	☐	☒	☐
d.	Substantially alter the existing drainage pattern of the 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 onsite or offsite?	☐	☐	☒	☐

e.	Create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f.	Otherwise substantially degrade water quality?	☐	☐	☒	☐
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?	☐	☐	☒	☐
h.	Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☒	☐
i.	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j.	Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

3.9.1 Setting

The project is located at the existing RWQCP site near the Palo Alto Baylands and the Mayfield Slough, which both connect to the San Francisco Bay.

3.9.2 Impact Analysis

a. Would the project violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality?

LESS-THAN-SIGNIFICANT IMPACT. The RWQCP is heavily regulated by the San Francisco Bay Regional Water Quality Control Board (RWQCB) under Order No. R2-2014-0024 (NPDES Permit No. CA0037834), which establishes waste discharge requirements for disposal of treated wastewater into San Francisco Bay. The onsite storm drainage system discharges into the wastewater treatment system, and therefore site stormwater also is regulated under Order No. R2-2014-0024. The proposed project would add a minor amount of impervious surface to the overall RWQCP with the addition of the new building and the loss of the undeveloped land. Because stormwater is included in Order No. R2-2014-0024, the proposed project would be consistent with applicable water quality standards and waste discharge requirements.

Under both the construction and operation phases, the proposed project would not substantially degrade water quality due to the plant's available capacity to handle the small increase in stormwater runoff. All stormwater runoff at the site is directed into the wastewater treatment system, which is highly effective in removing pollutants from onsite storm drainage. Therefore, impacts to water quality would be less than significant.

b. Would the project 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?

NO IMPACT. The project would not deplete groundwater supplies or interfere with recharge. Groundwater in this area is not beneficially used; therefore, there would be no impacts as a result of this project.

c. Would the project 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 onsite or offsite?

LESS-THAN-SIGNIFICANT IMPACT. The project site consists of several solar panels on undeveloped land, where stormwater permeates into the ground. Under the proposed project, the site would become impervious due to the new dewatering and truck loadout facility. The facility has designed to direct rain water away from buildings in the direction of the existing stormwater collection system, which conveys storm runoff to the 72-inch joint sewer that ultimately discharges to the plant pump station. Roof drainage will discharge to ground on splash blocks or will be hard piped to an existing storm drain. Where storm drainage is required, all components of the system will be designed to convey the 10-year storm, and 100-year storm runoff will be conveyed away from the building without creating or contributing to the downstream or upstream flooding conditions per the *Santa Clara County, California, Drainage Manual.* Because surface flow is treated in the plant, none is leaving the site requiring detention/retention.

No streams or rivers would be affected by project construction or operation, nor would alterations of existing drainage patterns on the site area be affected, other than the minor change in impervious surfaces. The RWQCP has adequate capacity to handle the additional inflow of stormwater runoff from the project site; therefore, these minimal changes would result in less-than-significant impacts.

d. Would the project substantially alter the existing drainage pattern of the 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 onsite or offsite?

LESS-THAN-SIGNIFICANT IMPACT. The proposed project would not alter the existing drainage pattern of the site or area and would result in less-than-significant impacts; see answer (c) for more information, above.

e. Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

LESS-THAN-SIGNIFICANT IMPACT. The proposed project would not create or contribute runoff water and would result in less-than-significant impacts; see answers (a) and (c) for more information, above.

f. Would the project otherwise substantially degrade water quality?

LESS-THAN-SIGNIFICANT IMPACT. The proposed project would not substantially degrade water quality; all potential water quality impacts are discussed in (a), (c), and (d) above.

g. Would the project 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?

NO IMPACT. No housing construction is proposed as a part of the project. Therefore, construction and operation of the project would result in no flood hazard impacts to housing.

h. Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

LESS-THAN-SIGNIFICANT IMPACT. The RQWCP is located in an area designated a high risk flood zone (Zone AE) with a base flood elevation of 11 feet by the Federal Emergency Management Agency (FEMA). While the proposed project would be within a 100-year floodplain, the facility will have a finished floor elevation of 11.5 feet. Because the finished floor would be above the base flood elevation, project impacts would be less than significant.

i. Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

LESS-THAN-SIGNIFICANT IMPACT. While the proposed project is located in an area that is designated a high risk food zone (Zone AE), the proposed building will be above the base flood elevation of 11 feet and would not expose people or structures to a significant risk of loss, injury, or death as a result of flooding. Additionally, there are no levees or dams near the project area; therefore, impacts would be less than significant.

j. Would the project result in inundation by seiche, tsunami, or mudflow?

NO IMPACT. The project area is not subject to inundation by seiche, tsunami, or mudflow, therefore there are no impacts anticipated as a result of the proposed project.

3.10 Land Use and Planning

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
a.	Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

3.10.1 Setting

The project is within the existing RWQCP property in the City of Palo Alto in Santa Clara County, CA. Land use designation at the project site is Public Facilities, with a site and design review overlay, PF (D). Surrounding zoning districts and land uses include Public Facilities (PF), Planned Community (PC), and Research, Office and Limited Manufacturing Subdistrict – Embarcadero [ROLM(E)].

3.10.2 Impact Analysis

a. Would the project physically divide an established community?

NO IMPACT. The project is located within the existing RWQCP and would involve the installation of three BFPs with room to install a future unit for filtration purposes. Construction and operation would occur on site, with trucks transporting waste away from the facility via City roads. It would not divide an established community.

b. Would the project 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?

NO IMPACT. The project would not conflict with any applicable land use plan, policy, or regulation, it is consistent with its general plan and zoning designations.

c. Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

NO IMPACT. The project area is not located within a Habitat Conservation Plan or Natural Community Conservation Plan.

3.11 Mineral Resources

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
a.	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.11.1 Setting

The project is not located in an area of known mineral resources. According to the Natural Environment Element of the City of Palo Alto's Comprehensive Plan, the City of Palo Alto does not contain any mineral deposits of regional significance and therefore does not include any policies relating to mineral resources (City of Palo Alto, 2007).

3.11.2 Impact Analysis

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or 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?

NO IMPACT. The project area is within Mineral Resource Zone MRZ-1, as classified by the California Department of Conservation (DOC), Division of Mines and Geology (DMG). MRZ-1 is defined as "Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources." (DMG, 1996). Additionally, the City of Palo Alto's Comprehensive Plan has noted that it does not contain any mineral deposits of regional significance (City of Palo Alto, 2007). Therefore, there would be no change associated with the proposed project.

b. Would the project 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?

NO IMPACT. The proposed project would not result in the loss of availability of a mineral resource recovery site as described in "a." above.

3.12 Noise

	Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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?	☐	☐	☒	☐
b.	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c.	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d.	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
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 or working in the project area to excessive noise levels?	☐	☐	☒	☐
f.	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.12.1 Setting

The project site is located east of U.S. Highway 101, near the Palo Alto Baylands and commercial/office uses. The nearest residence is located approximately 0.7 mile from the project site.

3.12.2 Impact Analysis

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?

LESS-THAN-SIGNIFICANT IMPACT. Noise generated by project construction is expected to vary depending on construction activities. Project construction would occur on weekdays, typically from 8:00 a.m. to 6:00 p.m., Monday through Friday, and from 9:00 a.m. to 6:00 p.m. on Saturdays in accordance with the City of Palo Alto municipal code. Project construction would generate noise from the heavy equipment used. Individual pieces of construction equipment are likely to generate noise levels of 80 to 85 a-weighted decibels (dBA) at 50 feet from the source. Pilings would be installed to support the sludge dewatering building; however, the piles would be installed using an auger and no pile driving would occur. The nearest sensitive receptors would be users of the recreational trails on the adjacent Palo Alto Baylands, approximately 500 feet away. Given the lack of nearby sensitive receptors, and by following City of Palo Alto noise standards, construction noise impacts would be less than significant.

Project operations would generate noise from equipment (e.g., belt filter presses and conveyor) and from haul truck trips. Equipment noise would be contained within the building, and would not contribute to an increase in exterior ambient noise levels. Truck trips would be limited to

approximately five truckloads per day. Trucks would enter the RWQCP via Embarcadero Way and would exit via Embarcadero Road. These roads run through a commercial and industrial area, and would not drive near sensitive land uses like the Palo Alto Baylands. For these reasons, truck trips would not contribute to a substantial increase in noise levels that would affect sensitive receptors; impacts, therefore, would be less than significant.

b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

LESS-THAN-SIGNIFICANT IMPACT. The project construction may temporarily expose persons to ground vibrations above ambient levels but due to the short duration of the construction project they would remain less than significant.

c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

LESS-THAN-SIGNIFICANT IMPACT. See the response to "a" above.

d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

LESS-THAN-SIGNIFICANT IMPACT. See the response to "a" above.

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 or working in the project area to excessive noise levels?

NO IMPACT. While the project is 0.5 miles away from the Palo Alto Airport, the project would not expose people to excessive noise levels from the airport. No impact would occur as a result of the project.

f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

NO IMPACT. The project is not within the vicinity of a private airstrip.

3.13 Population and Housing

Would the project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.13.1 Setting

The proposed project would be constructed within the existing RWQCP, is surrounded by office/commercial and public facilities land uses, and would not conflict with populations or housing resources.

3.13.2 Impact Analysis

a. Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

NO IMPACT. The proposed project does not expand the capacity of the RWQCP. For this reason, the project is not expected to induce population growth; therefore there would be no growth inducing impacts.

b. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

NO IMPACT. The project would be constructed at the existing RWQCP along developed city streets, within already developed areas of the City of Palo Alto. Therefore, the project would not displace any existing housing.

c. Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

NO IMPACT. The project would be constructed at the existing RWQCP along developed city streets, within already developed areas of the City of Palo Alto. Therefore, the project would not displace any people and would not necessitate the construction of replacement housing elsewhere.

3.14 Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	**Potentially Significant Impact**	**Less-Than-Significant with Mitigation Incorporation**	**Less-Than-Significant Impact**	**No Impact**
a. Fire protection?	☐	☐	☒	☐
b. Police protection?	☐	☐	☐	☒
c. Schools?	☐	☐	☐	☒
d. Parks?	☐	☐	☐	☒
e. Other public facilities?	☐	☐	☐	☒

3.14.1 Setting

Public services and facilities are provided and maintained by local municipalities, including fire, police, and public works.

3.14.2 Impact Analysis

a. Fire protection?

LESS-THAN-SIGNIFICANT IMPACT. Construction and operation of the project is not expected to increase the demand for fire protection services in the project area. During construction of the project, emergencies could occur at the project site; however, appropriate notification to local emergency service providers prior to construction would address impacts that could affect emergency response times such as lane closures.

b. Police protection?

NO IMPACT. The project would not increase population and is not anticipated to affect crime rates in the vicinity. Therefore, additional police protection is not needed.

c. Schools?

NO IMPACT. This is a non-residential project, therefore there would not be a secondary impact associated with increased demand for schools. The project would not generate additional population or students during construction or operation.

d. Parks?

NO IMPACT. This is a non-residential project, therefore there would not be a secondary impact associated with increased demand for parks. The project would not increase the use of existing neighborhood and regional parks or other recreational facilities.

e. Other public facilities?

NO IMPACT. This is a non-residential project, therefore there would not be a secondary impact associated with increased demand for public facilities. The project would not result in an increase in population during project construction or operation; therefore, the project would not affect other government services or public facilities.

3.15 Recreation

		Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
a.	Would the project 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?	☐	☐	☐	☒
b.	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.15.1 Setting

The proposed project is located in a non-residential area of the City of Palo Alto, north of the Palo Alto Baylands and less than 0.5 miles away from the Palo Alto Golf Course.

3.15.2 Impact Analysis

a. Would the project 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?

NO IMPACT. This is a non-residential project, therefore there would not be a secondary impact associated with increased demand for recreational facilities. Therefore, there would be no impacts as a result of this project.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

NO IMPACT. The project would not increase population, and therefore does not include or require the construction or expansion of recreational facilities.

3.16 Transportation/Traffic

Would the Project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☐	☒
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e. Result in inadequate emergency access?	☐	☐	☐	☒
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

3.16.1 Setting

The project area is located east of U.S. Highway 101, off of Embarcadero Road and Embarcadero Way in the City of Palo Alto. The project would involve the use of existing public and private roadways by construction equipment and crews, and for the operation of transporting the waste load generated by

the dewatering operations. During construction, approximately 10 vehicles per day are expected to access the job site. When the facility is operational, an estimated five trucks per day are expected to access the site for sludge loadout and hauling. All traffic would use Embarcadero Road and Embarcadero Way to access the truck loadout facility building.

3.16.2 Impact Analysis

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?

LESS-THAN-SIGNIFICANT IMPACT. Project operations would require the use of Embarcadero Road and Embarcadero Way for waste hauling. As identified in the City of Palo Alto Comprehensive Plan, Embarcadero Road is classified as an arterial roadway that connects business parks and other uses and channels traffic to U.S. Highway 101. Embarcadero Road is a four-lane arterial with a designated bike lane and street parking traffic. This portion of Embarcadero Road is not used for public transit. Applicable plans include *Plan Bay Area: Strategy for a Sustainable Region*, but nothing in the applicable plans address the low levels of traffic generated by the project. Therefore, impacts would be less than significant.

As described in Section 1.8.2, up to 10 trucks would use Embarcadero Road and Embarcadero Way to access the site during the construction period. Construction activities would temporarily generate a negligible amount of additional traffic, and local street capacity would not be affected. Therefore, impacts would be less than significant.

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?

LESS THAN SIGNIFICANT IMPACT. See response to "a" above.

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?

NO IMPACT. The project would have no impact on air traffic patterns.

d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

NO IMPACT. The project would be constructed within the existing RWQCP, and does not include design features that would affect local roadways.

e. Result in inadequate emergency access?

NO IMPACT. The project would be constructed within the existing RWQCP, and does not include design features that would impede emergency access. Internal circulation around the new building would exceed the minimum requirements of the California Fire Code.

f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

NO IMPACT. The project would be constructed within the existing RWQCP, and does not include design features that would impede public transit, bicycle, or pedestrian facilities.

3.17 Utilities and Service Systems

Would the Project:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable RWQCB?	☐	☐	☐	☒
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 effects?	☐	☐	☐	☒
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 effects?	☐	☐	☐	☒
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e. Result in a determination by the wastewater treatment provider which 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?	☐	☐	☐	☒
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g. Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

3.17.1 Setting

The proposed project is located within an urbanized environment within the City of Palo Alto where utility infrastructure is in place. The proposed project would not include any elements that would expand or adversely affect most utility services, but would require the offsite disposal of the biosolids generated by the sludge dewatering facility. The project is being designed based on a need to handle approximately 32 dry tons per day of biosolids, which is expected to require five trucks (i.e. ten truck trips) per day to haul offsite for beneficial reuse. At this time, the City may choose one of several options for disposal.

3.17.2 Impact Analysis

a. Exceed wastewater treatment requirements of the applicable RWQCB?

NO IMPACT. The proposed project site is within an existing RWQCP. The project would introduce a change in the solids handling process at the plant, but the liquids processing facilities would not be changed. Therefore, there would be no change in discharges to the San Francisco Bay.

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 effects?

NO IMPACT. The proposed project includes the construction of a new dewatering and truck loadout facility building, a two story cast-in-place concrete structure that would contain space for the belt filter presses, truck loadout, and other support areas. These features are new components of an existing wastewater treatment plant, and would not result in the need for new water or wastewater treatment services.

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 effects?

NO IMPACT. The proposed project would construct the new dewatering and truck loadout facility building on an existing water quality control plant on property that is already paved with existing drainage infrastructure. The project would not result or require the construction of new stormwater drainage facilities or expand an existing one; therefore there would be no impact.

d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

NO IMPACT. There would be no water use from the proposed project, other than minor dust control during site preparation.

e. Result in a determination by the wastewater treatment provider which 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?

NO IMPACT. The project features are new components of an existing wastewater treatment plant, and would not result in the need new wastewater treatment services.

f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

LESS-THAN-SIGNIFICANT IMPACT. The proposed project would generate up to approximately 32 dry tons per day of material for offsite beneficial reuse, requiring up to five haul trucks (ten trips total) per day. Although the final destination is not known, one option is for biosolids reuse as alternative daily cover (ADC) at the Potrero Hills or Hay Road landfills in Solano County.[1] Both facilities accept biosolids for beneficial use. Capacity at landfills located closer to Palo Alto where biosolids are accepted for ADC is unlikely; for example, ADC needs at the Newby Island Landfill are already being fully met by biosolids from the San José-Santa Clara Regional Wastewater Facility. Because of the willingness of the Solano County landfills to accept biosolids as ADC, impacts would be less than significant.

g. Comply with federal, state, and local statutes and regulations related to solid waste?

LESS-THAN-SIGNIFICANT IMPACT. The project includes beneficial reuse of biosolids, consistent with state regulations. The regulation of biosolids in California involves multiple agencies at the federal, state, and local levels. The extent to which biosolids are regulated is greatly dependent on the treatment technology used, as well as the end use of the biosolids. California's biosolids program is regulated by USEPA Region IX pursuant to 40 Code of Federal Regulations (CFR) 503, "Standards for the Use and Disposal of Sewage Sludge" (i.e., the 503 Rule). The 503 Rule establishes standards such as pollutant limits, pathogen reduction requirements, and vector attraction reduction requirements.

[1] Alternative daily cover means cover material other than earthen material placed on the surface of the active face of a municipal solid waste landfill at the end of each operating day to control vectors, fires, odors, blowing litter, and scavenging. Federal regulations require landfill operators to use six inches of earth material as daily cover unless other materials are allowed as alternatives. CalRecycle has approved 11 ADC material types, including biosolids from municipal wastewater treatment plants.

In addition, the California Department of Resources Recycling and Recovery (CalRecycle) has approved the use of biosolids from municipal wastewater treatment facilities as ADC. ADC is not considered landfill *disposal* because it provides beneficial use as landfill cover. With compliance with existing regulations for biosolids reuse, impacts would be less than significant.

3.18 Mandatory Findings of Significance

	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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?	☐	☒	☐	☐
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?	☐	☐	☒	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

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?

LESS-THAN-SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED. As indicated throughout this Initial Study, impacts on all environmental resources were deemed to result in either 'no impact,' a 'less-than-significant impact,' or 'less than significant with mitigation incorporation.' As a result, the project with proposed mitigation measures would not create environmental effects that would 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 community, or eliminate important examples of major periods of California history or prehistory.

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?

LESS-THAN-SIGNIFICANT IMPACT. As indicated throughout this Initial Study, impacts on all environmental resources were deemed to result in either 'no impact,' a 'less-than-significant

impact,' or 'less than significant with mitigation incorporation.' As a result, the project with proposed mitigation measures would not create environmental effects that would have impacts that are individually limited but cumulatively considerable.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

LESS-THAN-SIGNIFICANT IMPACT. As indicated throughout this Initial Study, impacts on all environmental resources were deemed to result in either 'no impact,' a 'less-than-significant impact,' or 'less than significant with mitigation incorporation.' As a result, the project with proposed mitigation measures would not create environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

SECTION 4

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SECTION 5

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Appendix A
Air Quality and Greenhouse Gas Emissions Output Files

TABLE A-1

Construction Emissions Summary

Palo Alto Dewatering Building Project

Construction Emissions

Construction Activities	Criteria Pollutant Emissions [a]							
	VOC	CO	NOx	SOx	$PM_{10\_Exhaust}$	$PM_{2.5\_Exhaust}$	$PM_{10\_Fugitive}$	$PM_{2.5\_Fugitive}$
Max Daily Emissions (lbs/day)	3.96	25.27	47.41	0.07	2.14	1.94	80.14	14.83
Project Emissions (tons/project)	0.31	1.94	3.67	0.01	0.16	0.14	0.30	0.06
BAAQMD Thresholds of Significance (lbs/day) [b]	54	N/A	54	N/A	82	54	N/A	N/A
Exceeds Threshold (Y/N)?	N	N	N	N	N	N	N	N

Construction Activities	GHG Emissions [a]	
	CO_2	CO_2e [c]
Max Daily Emissions (lbs/day)	6,921	7,267
Project Emissions (metric tons/project)	554	581.95
CARB Thresholds of Significance (metric tons/year) [d]	N/A	7,000
Exceeds Threshold (Y/N)?	N	N

Notes:

[a] It was assumed that the four construction phases would occur sequentially and that, within each phase, some equipment/vehicles may operate concurrently but that sub-tasks would largely occur sequentially. Refer to Table 1.A-1 for clarification on what sub-tasks may occur concurrently.

[b] BAAQMD Thresholds of Significance taken from Table 2-1 of the *Draft CEQA Air Quality Guidelines* (BAAQMD, 2010).

[c] Only CO_2 emission factors were available for all types of construction equipment utilized for this project. According to the EPA, emissions of CH_4 and N_2O from passenger vehicles are expected to be much lower than emissions of CO_2, contributing in the range of 5 to 6 percent of the total CO_2e emissions (EPA, 2005). Therefore, assuming the passenger vehicle research is applicable to all mobile emission sources, the CO_2 emissions were conservatively increased by 5 percent to calculate CO_2e emissions, accounting for the potential CH_4 and N_2O emissions associated with construction activities.

[d] CARB Thresholds of Significance taken as the statewide interim thresholds of significance for GHGs (CARB, 2008).

TABLE A-2
Construction Emissions
Palo Alto Dewatering Building Project

Equipment / Vehicle List [a]	Equipment / Vehicle Type	Quantity [a]	Quantity Units	Number of Days Used [a]	Hours per Day [b]	Miles per Day [c]	Emissions (lbs/day) [d]								
							VOC	CO	NOx	SOx	$PM_{10\_Exhaust}$	$PM_{2.5\_Exhaust}$	$PM_{10\_Fugitive}$	$PM_{2.5\_Fugitive}$	CO_2
Sitework															
Earthwork (Test Pits and Survey)															
Cat 420 E	Construction Equipment	1	--	2	10	--	0.430	3.047	4.111	0.004	0.316	0.291	--	--	408.761
Pickup [e]	Offsite Light-duty Truck	4	--	2	--	14.6	0.005	0.198	0.020	0.000	0.005	0.002	0.034	0.008	37.958
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	2	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Earthwork (Rough Grading and Survey)															
Cat D 6	Construction Equipment	1	--	2	10	--	0.885	3.555	11.924	0.010	0.460	0.423	--	--	1,000.393
Pickup [e]	Offsite Light-duty Truck	4	--	2	--	14.6	0.005	0.198	0.020	0.000	0.005	0.002	0.034	0.008	37.958
Grader Cat 140M 17	Construction Equipment	1	--	2	10	--	1.281	6.195	13.049	0.008	0.733	0.674	--	--	816.410
Fugitive Dust [g]	Disturbed Surface	0.70	acres	2	--	--	--	--	--	--	--	--	3.512	0.731	--
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	2	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Earthwork (Mass Excavation and Survey)															
Cat D 6	Construction Equipment	1	--	1	10	--	0.885	3.555	11.924	0.010	0.460	0.423	--	--	1,000.393
Pickup [e]	Offsite Light-duty Truck	3	--	1	--	14.6	0.004	0.170	0.017	0.000	0.005	0.002	0.029	0.007	32.536
Water Truck	Onsite Heavy-duty Diesel	1	--	1	--	5	0.022	0.055	0.228	0.000	0.003	0.003	9.961	0.996	37.572
Grader Cat 140M 17	Construction Equipment	1	--	1	10	--	1.281	6.195	13.049	0.008	0.733	0.674	--	--	816.410
Scraper Cat 621 G	Construction Equipment	1	--	1	10	--	1.733	13.815	22.055	0.019	0.889	0.818	--	--	1,939.670
Fugitive Dust [h]	Onsite Cut/Fill	560	yd[a]	1	--	--	--	--	--	--	--	--	66.080	13.745	--
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	1	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
AC Paving (Fine Grade Roadway) and Concrete Paving															
Grader 30000 lbs	Construction Equipment	1	--	1	10	--	1.281	6.195	13.049	0.008	0.733	0.674	--	--	816.410
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	4	--	1	--	14.6	0.025	0.100	0.759	0.002	0.020	0.012	0.039	0.010	218.619
Concrete Material Loads [e]	Offsite Heavy-duty Diesel	1	--	1	--	40	0.017	0.068	0.520	0.001	0.014	0.008	0.026	0.007	149.739
Fugitive Dust [g]	Disturbed Surface	0.17	acres	1	--	--	--	--	--	--	--	--	0.000	0.000	--
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	1	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
AC Paving (Sidewalk/Drive Concrete) and Concrete Paving															
Vibraplate	Construction Equipment	1	--	1	10	--	0.050	0.263	0.314	0.001	0.012	0.012	--	--	43.099
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	4	--	1	--	14.6	0.025	0.100	0.759	0.002	0.020	0.012	0.039	0.010	218.619
Concrete Material Loads [e]	Offsite Heavy-duty Diesel	1	--	1	--	40	0.017	0.068	0.520	0.001	0.014	0.008	0.026	0.007	149.739
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	1	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
AC Paving (Base Course) and Concrete Paving															
Grader 30000 lbs	Construction Equipment	1	--	1	10	--	1.281	6.195	13.049	0.008	0.733	0.674	--	--	816.410
25 Ton Vibrating Roller	Construction Equipment	1	--	1	10	--	0.426	2.548	3.940	0.003	0.290	0.267	--	--	344.849
Dozer 300 hp	Construction Equipment	1	--	1	10	--	1.132	7.804	15.013	0.014	0.582	0.535	--	--	1,451.359
1.5 CY Loader	Construction Equipment	1	--	1	10	--	0.624	2.305	8.119	0.008	0.277	0.255	--	--	799.451
Water Truck	Onsite Heavy-duty Diesel	1	--	1	--	5	0.022	0.055	0.228	0.000	0.003	0.003	9.961	0.996	37.572
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	4	--	1	--	14.6	0.025	0.100	0.759	0.002	0.020	0.012	0.039	0.010	218.619
Concrete Material Loads [e]	Offsite Heavy-duty Diesel	3	--	1	--	40	0.051	0.204	1.559	0.004	0.042	0.025	0.079	0.020	449.218
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	1	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
AC Paving (Sub Base) and Concrete Paving															
Grader 30000 lbs	Construction Equipment	1	--	1	10	--	1.281	6.195	13.049	0.008	0.733	0.674	--	--	816.410
25 Ton Vibrating Roller	Construction Equipment	1	--	1	10	--	0.426	2.548	3.940	0.003	0.290	0.267	--	--	344.849
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	4	--	1	--	14.6	0.025	0.100	0.759	0.002	0.020	0.012	0.039	0.010	218.619
Concrete Material Loads [e]	Offsite Heavy-duty Diesel	3	--	1	--	40	0.051	0.204	1.559	0.004	0.042	0.025	0.079	0.020	449.218
Fugitive Dust [i]	Aggregates	146	tons	1	--	--	--	--	--	--	--	--	2.958	0.448	--
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	1	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
AC Paving (Bituminous Stabilizer) and Concrete Paving															
3000 Gal Tanker	Onsite Heavy-duty Diesel	1	--	1	--	40	0.179	0.441	1.826	0.003	0.028	0.021	79.685	7.968	300.573
Tractor Truck 380 hp	Offsite Heavy-duty Diesel	1	--	1	--	14.6	0.006	0.025	0.190	0.001	0.005	0.003	0.010	0.002	54.655
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	4	--	1	--	14.6	0.025	0.100	0.759	0.002	0.020	0.012	0.039	0.010	218.619
Concrete Material Loads [e]	Offsite Heavy-duty Diesel	3	--	1	--	40	0.051	0.204	1.559	0.004	0.042	0.025	0.079	0.020	449.218
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	1	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
AC Paving (Plant Mix AC Paving) and Concrete Paving															
Paving Machine 130 hp	Construction Equipment	1	--	1	10	--	0.387	3.203	4.493	0.005	0.223	0.205	--	--	524.853
10 Ton Steel Roller	Construction Equipment	1	--	1	10	--	0.426	2.548	3.940	0.003	0.290	0.267	--	--	344.849
12 Ton Pneumatic Roller	Construction Equipment	1	--	1	10	--	0.426	2.548	3.940	0.003	0.290	0.267	--	--	344.849
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	4	--	1	--	14.6	0.025	0.100	0.759	0.002	0.020	0.012	0.039	0.010	218.619
Concrete Material Loads [e]	Offsite Heavy-duty Diesel	1	--	1	--	40	0.017	0.068	0.520	0.001	0.014	0.008	0.026	0.007	149.739
Fugitive Dust [i]	Aggregates	61	tons	1	--	--	--	--	--	--	--	--	0.000	0.000	--
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	1	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
AC Paving (Place Concrete) and Concrete Paving															
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	5	--	1	--	14.6	0.031	0.124	0.949	0.003	0.025	0.015	0.048	0.012	273.274
Concrete Material Loads [e]	Offsite Heavy-duty Diesel	1	--	1	--	40	0.017	0.068	0.520	0.001	0.014	0.008	0.026	0.007	149.739
Fugitive Dust [j]	Paving	0.0376	acres	1	--	--	0.099	--	--	--	--	--	--	--	--
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	1	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961

TABLE A-2
Construction Emissions
Palo Alto Dewatering Building Project

Equipment / Vehicle List [a]	Emissions (tons/project) [d]								CO_2 Emissions (metric tons/project) [d]
	VOC	CO	NOx	SOx	$PM_{10\_Exhaust}$	$PM_{2.5\_Exhaust}$	$PM_{10\_Fugitive}$	$PM_{2.5\_Fugitive}$	
Sitework									
Earthwork (Test Pits and Survey)									
Cat 420 E	0.000	0.003	0.004	0.000	0.000	0.000	--	--	0.371
Pickup [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.034
Worker Commute [f]	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.300
Earthwork (Rough Grading and Survey)									
Cat D 6	0.001	0.004	0.012	0.000	0.000	0.000	--	--	0.908
Pickup [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.034
Grader Cat 140M 17	0.001	0.006	0.013	0.000	0.001	0.001	--	--	0.741
Fugitive Dust [g]	--	--	--	--	--	--	0.004	0.001	--
Worker Commute [f]	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.300
Earthwork (Mass Excavation and Survey)									
Cat D 6	0.000	0.002	0.006	0.000	0.000	0.000	--	--	0.454
Pickup [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.015
Water Truck	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.017
Grader Cat 140M 17	0.001	0.003	0.007	0.000	0.000	0.000	--	--	0.370
Scraper Cat 621 G	0.001	0.007	0.011	0.000	0.000	0.000	--	--	0.880
Fugitive Dust [h]	--	--	--	--	--	--	0.033	0.007	--
Worker Commute [f]	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.150
AC Paving (Fine Grade Roadway) and Concrete Paving									
Grader 30000 lbs	0.001	0.003	0.007	0.000	0.000	0.000	--	--	0.370
2 Ton Flatbed Crew Truck [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.099
Concrete Material Loads [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.068
Fugitive Dust [g]	--	--	--	--	--	--	0.000	0.000	--
Worker Commute [f]	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.150
AC Paving (Sidewalk/Drive Concrete) and Concrete Paving									
Vibraplate	0.000	0.000	0.000	0.000	0.000	0.000	--	--	0.020
2 Ton Flatbed Crew Truck [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.099
Concrete Material Loads [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.068
Worker Commute [f]	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.150
AC Paving (Base Course) and Concrete Paving									
Grader 30000 lbs	0.001	0.003	0.007	0.000	0.000	0.000	--	--	0.370
25 Ton Vibrating Roller	0.000	0.001	0.002	0.000	0.000	0.000	--	--	0.156
Dozer 300 hp	0.001	0.004	0.008	0.000	0.000	0.000	--	--	0.658
1.5 CY Loader	0.000	0.001	0.004	0.000	0.000	0.000	--	--	0.363
Water Truck	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.017
2 Ton Flatbed Crew Truck [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.099
Concrete Material Loads [e]	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.204
Worker Commute [f]	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.150
AC Paving (Sub Base) and Concrete Paving									
Grader 30000 lbs	0.001	0.003	0.007	0.000	0.000	0.000	--	--	0.370
25 Ton Vibrating Roller	0.000	0.001	0.002	0.000	0.000	0.000	--	--	0.156
2 Ton Flatbed Crew Truck [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.099
Concrete Material Loads [e]	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.204
Fugitive Dust [i]	--	--	--	--	--	--	0.001	0.000	--
Worker Commute [f]	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.150
AC Paving (Bituminous Stabilizer) and Concrete Paving									
3000 Gal Tanker	0.000	0.000	0.001	0.000	0.000	0.000	0.040	0.004	0.136
Tractor Truck 380 hp	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025
2 Ton Flatbed Crew Truck [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.099
Concrete Material Loads [e]	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.204
Worker Commute [f]	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.150
AC Paving (Plant Mix AC Paving) and Concrete Paving									
Paving Machine 130 hp	0.000	0.002	0.002	0.000	0.000	0.000	--	--	0.238
10 Ton Steel Roller	0.000	0.001	0.002	0.000	0.000	0.000	--	--	0.156
12 Ton Pneumatic Roller	0.000	0.001	0.002	0.000	0.000	0.000	--	--	0.156
2 Ton Flatbed Crew Truck [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.099
Concrete Material Loads [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.068
Fugitive Dust [i]	--	--	--	--	--	--	0.000	0.000	--
Worker Commute [f]	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.150
AC Paving (Place Concrete) and Concrete Paving									
2 Ton Flatbed Crew Truck [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.124
Concrete Material Loads [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.068
Fugitive Dust [j]	0.000	--	--	--	--	--	--	--	--
Worker Commute [f]	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.150

TABLE A-2
Construction Emissions
Palo Alto Dewatering Building Project

Equipment / Vehicle List [a]	Equipment / Vehicle Type	Quantity [a]	Quantity Units	Number of Days Used [a]	Hours per Day [b]	Miles per Day [c]	Emissions (lbs/day) [d]								
							VOC	CO	NOx	SOx	$PM_{10\_Exhaust}$	$PM_{2.5\_Exhaust}$	$PM_{10\_Fugitive}$	$PM_{2.5\_Fugitive}$	CO_2
Buried 4" DIP (Excavation), Buried 6" DIP (Excavation), Buried 6" PVC (Excavation), Copper Pipe (Excavation), and Buried HDPE 2" (Excavation)															
Cat 320 DL	Construction Equipment	1	--	3	10	--	0.488	4.312	5.573	0.007	0.274	0.252	--	--	691.629
Cat 416E	Construction Equipment	1	--	2	10	--	0.430	3.047	4.111	0.004	0.316	0.291	--	--	408.761
Fugitive Dust [h]	Onsite Cut/Fill	930	yd^3	3	--	--	--	--	--	--	--	--	36.584	7.609	--
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	3	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Buried 4" DIP (Backfill Pipe Zone), Buried 6" DIP (Backfill Pipe Zone), Buried 6" PVC (Backfill Pipe Zone), Copper Pipe (Backfill Pipe Zone), and Buried HDPE 2" (Backfill Pipe Zone)															
Cat 320 DL	Construction Equipment	1	--	3	10	--	0.488	4.312	5.573	0.007	0.274	0.252	--	--	691.629
Loader Cat 938 H	Construction Equipment	1	--	3	10	--	0.624	2.305	8.119	0.008	0.277	0.255	--	--	799.451
Roller Bomag BW65H [e]	Construction Equipment	2	--	3	10	--	0.710	4.247	6.566	0.006	0.483	0.445	--	--	574.749
Pipe Bedding Material Loads [e]	Offsite Heavy-duty Diesel	2	--	2	--	40	0.034	0.136	1.040	0.003	0.028	0.016	0.053	0.013	299.478
Offhaul Loads	Offsite Heavy-duty Diesel	1	--	1	--	40	0.017	0.068	0.520	0.001	0.014	0.008	0.026	0.007	149.739
Cat 416E	Construction Equipment	1	--	2	10	--	0.430	3.047	4.111	0.004	0.316	0.291	--	--	408.761
Fugitive Dust [h]	Offsite Cut/Fill	88	yd^3	3	--	--	--	--	--	--	--	--	12.962	2.696	--
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	3	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Buried 4" DIP (Backfill Above Pipe Zone) and Buried 6" DIP (Backfill Above Pipe Zone)															
Loader 950H	Construction Equipment	1	--	2	10	--	0.624	2.305	8.119	0.008	0.277	0.255	--	--	799.451
Water Truck	Onsite Heavy-duty Diesel	1	--	2	--	5	0.022	0.055	0.228	0.000	0.003	0.003	9.961	0.996	37.572
50" Vibratory Roller	Construction Equipment	1	--	2	10	--	0.426	2.548	3.940	0.003	0.290	0.267	--	--	344.849
Pipe Bedding Material Loads [e]	Offsite Heavy-duty Diesel	15	--	2	--	40	0.255	1.022	7.797	0.021	0.209	0.123	0.397	0.099	2,246.089
Offhaul Loads [e]	Offsite Heavy-duty Diesel	6	--	2	--	40	0.094	0.375	2.859	0.008	0.077	0.045	0.146	0.036	823.566
Fugitive Dust [h]	Offsite Cut/Fill	41	yd^3	2	--	--	--	--	--	--	--	--	0.000	0.000	--
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	2	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Buried 4" DIP (Pipe Installations), Buried 6" DIP (Pipe Installations), Buried 6" PVC (Pipe Installations), Copper Pipe (Pipe Installations), and Buried HDPE 2" (Pipe Installations)															
Cat 416E	Construction Equipment	1	--	8	10	--	0.430	3.047	4.111	0.004	0.316	0.291	--	--	408.761
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	2	--	13	--	14.6	0.011	0.042	0.321	0.001	0.009	0.005	0.016	0.004	92.493
Rammax	Construction Equipment	1	--	8	10	--	0.426	2.548	3.940	0.003	0.290	0.267	--	--	344.849
Cat 320 DL	Construction Equipment	1	--	13	10	--	0.488	4.312	5.573	0.007	0.274	0.252	--	--	691.629
Loader Cat 938 H	Construction Equipment	1	--	13	10	--	0.624	2.305	8.119	0.008	0.277	0.255	--	--	799.451
Pickup [e]	Offsite Light-duty Truck	1	--	13	--	14.6	0.002	0.061	0.006	0.000	0.002	0.001	0.010	0.003	11.679
66" Vibratory Roller [e]	Construction Equipment	1	--	13	10	--	0.459	2.744	4.243	0.004	0.312	0.287	--	--	371.376
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	13	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Buried 4" DIP (Tie in Existing) and 48" Manholes															
Cat 416E	Construction Equipment	1	--	1	10	--	0.430	3.047	4.111	0.004	0.316	0.291	--	--	408.761
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	2	--	1	--	14.6	0.012	0.050	0.379	0.001	0.010	0.006	0.019	0.005	109.310
Rammax	Construction Equipment	1	--	1	10	--	0.426	2.548	3.940	0.003	0.290	0.267	--	--	344.849
Crane 30 Ton	Construction Equipment	1	--	1	10	--	0.900	3.731	10.664	0.007	0.484	0.445	--	--	732.781
Cat 320 DL	Construction Equipment	1	--	1	10	--	0.488	4.312	5.573	0.007	0.274	0.252	--	--	691.629
Loader Cat 938 H	Construction Equipment	1	--	1	10	--	0.624	2.305	8.119	0.008	0.277	0.255	--	--	799.451
Pickup	Offsite Light-duty Truck	1	--	1	--	14.6	0.001	0.057	0.006	0.000	0.002	0.001	0.010	0.002	10.845
66" Vibratory Roller	Construction Equipment	1	--	1	10	--	0.426	2.548	3.940	0.003	0.290	0.267	--	--	344.849
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	1	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Sitework Maximum							**3.960**	**25.267**	**47.414**	**0.044**	**2.141**	**1.941**	**80.141**	**14.830**	**4,582.487**
Dewatering Building															
Crane and 24" Thick Slab															
150 Ton Crane [e]	Construction Equipment	1	--	40	10	--	0.900	3.731	10.664	0.007	0.484	0.445	--	--	732.781
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	3	--	67	--	14.6	0.021	0.083	0.634	0.002	0.017	0.010	0.032	0.008	182.727
Concrete Pump	Construction Equipment	1	--	5	10	--	0.836	4.828	6.137	0.008	0.445	0.445	--	--	778.780
Concrete Material Loads	Offsite Heavy-duty Diesel	1	--	67	--	40	0.017	0.068	0.520	0.001	0.014	0.008	0.026	0.007	149.739
Fugitive Dust [g]	Disturbed Surface	0.18	acres	67	--	--	--	--	--	--	--	--	0.026	0.005	--
Fugitive Dust [i]	Aggregates	513	tons	67	--	--	--	--	--	--	--	--	0.156	0.024	--
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	67	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Crane, 12" Straight Walls, 24" Straight Walls, Concrete Stairs, and Masonry 8" Walls															
150 Ton Crane [e]	Construction Equipment	1	--	30	10	--	0.900	3.731	10.664	0.007	0.484	0.445	--	--	732.781
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	18	--	46	--	14.6	0.109	0.436	3.328	0.009	0.089	0.053	0.170	0.042	958.836
Concrete Pump [e]	Construction Equipment	2	--	6	10	--	1.533	8.851	11.250	0.015	0.817	0.817	--	--	1,427.764
Concrete Material Loads [e]	Offsite Heavy-duty Diesel	2	--	46	--	40	0.034	0.136	1.040	0.003	0.028	0.016	0.053	0.013	299.478
Fugitive Dust [i]	Aggregates	421	tons	46	--	--	--	--	--	--	--	--	0.186	0.028	--
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	46	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Crane and 12" Elevated Slab															
150 Ton Crane [e]	Construction Equipment	1	--	30	10	--	0.900	3.731	10.664	0.007	0.484	0.445	--	--	732.781

TABLE A-2
Construction Emissions
Palo Alto Dewatering Building Project

Equipment / Vehicle List [a]	Emissions (tons/project) [d]								CO_2 Emissions (metric tons/project) [d]
	VOC	CO	NOx	SOx	$PM_{10\_Exhaust}$	$PM_{2.5\_Exhaust}$	$PM_{10\_Fugitive}$	$PM_{2.5\_Fugitive}$	
Buried 4" DIP (Excavation), Buried 6" DIP (Excavation), Buried 6" PVC (Excavation), Copper Pipe (Excavation), and Buried HDPE 2" (Excavation)									
Cat 320 DL	0.001	0.006	0.008	0.000	0.000	0.000	--	--	0.941
Cat 416E	0.000	0.003	0.004	0.000	0.000	0.000	--	--	0.371
Fugitive Dust [h]	--	--	--	--	--	--	0.055	0.011	--
Worker Commute [f]	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.450
Buried 4" DIP (Backfill Pipe Zone), Buried 6" DIP (Backfill Pipe Zone), Buried 6" PVC (Backfill Pipe Zone), Copper Pipe (Backfill Pipe Zone), and Buried HDPE 2" (Backfill Pipe Zone)									
Cat 320 DL	0.001	0.006	0.008	0.000	0.000	0.000	--	--	0.941
Loader Cat 938 H	0.001	0.003	0.012	0.000	0.000	0.000	--	--	1.088
Roller Bomag BW65H [e]	0.001	0.006	0.010	0.000	0.001	0.001	--	--	0.782
Pipe Bedding Material Loads [e]	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.272
Offhaul Loads	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.068
Cat 416E	0.000	0.003	0.004	0.000	0.000	0.000	--	--	0.371
Fugitive Dust [h]	--	--	--	--	--	--	0.019	0.004	--
Worker Commute [f]	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.450
Buried 4" DIP (Backfill Above Pipe Zone) and Buried 6" DIP (Backfill Above Pipe Zone)									
Loader 950H	0.001	0.002	0.008	0.000	0.000	0.000	--	--	0.725
Water Truck	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.001	0.034
50" Vibratory Roller	0.000	0.003	0.004	0.000	0.000	0.000	--	--	0.313
Pipe Bedding Material Loads [e]	0.000	0.001	0.008	0.000	0.000	0.000	0.000	0.000	2.038
Offhaul Loads [e]	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.747
Fugitive Dust [h]	--	--	--	--	--	--	0.000	0.000	--
Worker Commute [f]	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.300
Buried 4" DIP (Pipe Installations), Buried 6" DIP (Pipe Installations), Buried 6" PVC (Pipe Installations), Copper Pipe (Pipe Installations), and Buried HDPE 2" (Pipe Installations)									
Cat 416E	0.002	0.012	0.016	0.000	0.001	0.001	--	--	1.483
2 Ton Flatbed Crew Truck [e]	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.545
Rammax	0.002	0.010	0.016	0.000	0.001	0.001	--	--	1.251
Cat 320 DL	0.003	0.028	0.036	0.000	0.002	0.002	--	--	4.078
Loader Cat 938 H	0.004	0.015	0.053	0.000	0.002	0.002	--	--	4.714
Pickup [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.069
66" Vibratory Roller [e]	0.003	0.018	0.028	0.000	0.002	0.002	--	--	2.190
Worker Commute [f]	0.000	0.010	0.001	0.000	0.000	0.000	0.002	0.001	1.952
Buried 4" DIP (Tie in Existing) and 48" Manholes									
Cat 416E	0.000	0.002	0.002	0.000	0.000	0.000	--	--	0.185
2 Ton Flatbed Crew Truck [e]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.050
Rammax	0.000	0.001	0.002	0.000	0.000	0.000	--	--	0.156
Crane 30 Ton	0.000	0.002	0.005	0.000	0.000	0.000	--	--	0.332
Cat 320 DL	0.000	0.002	0.003	0.000	0.000	0.000	--	--	0.314
Loader Cat 938 H	0.000	0.001	0.004	0.000	0.000	0.000	--	--	0.363
Pickup	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005
66" Vibratory Roller	0.000	0.001	0.002	0.000	0.000	0.000	--	--	0.156
Worker Commute [f]	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.150
Sitework Maximum	**0.031**	**0.201**	**0.344**	**0.000**	**0.018**	**0.016**	**0.179**	**0.031**	**38.306**
Dewatering Building									
Crane and 24" Thick Slab									
150 Ton Crane [e]	0.018	0.075	0.213	0.000	0.010	0.009	--	--	13.295
2 Ton Flatbed Crew Truck [e]	0.001	0.003	0.021	0.000	0.001	0.000	0.001	0.000	5.553
Concrete Pump	0.002	0.012	0.015	0.000	0.001	0.001	--	--	1.766
Concrete Material Loads	0.001	0.002	0.017	0.000	0.000	0.000	0.001	0.000	4.551
Fugitive Dust [g]	--	--	--	--	--	--	0.001	0.000	--
Fugitive Dust [i]	--	--	--	--	--	--	0.005	0.001	--
Worker Commute [f]	0.001	0.049	0.005	0.000	0.002	0.001	0.011	0.003	10.058
Crane, 12" Straight Walls, 24" Straight Walls, Concrete Stairs, and Masonry 8" Walls									
150 Ton Crane [e]	0.014	0.056	0.160	0.000	0.007	0.007	--	--	9.972
2 Ton Flatbed Crew Truck [e]	0.003	0.010	0.077	0.000	0.002	0.001	0.004	0.001	20.006
Concrete Pump [e]	0.005	0.027	0.034	0.000	0.002	0.002	--	--	3.886
Concrete Material Loads [e]	0.001	0.003	0.024	0.000	0.001	0.000	0.001	0.000	6.249
Fugitive Dust [i]	--	--	--	--	--	--	0.004	0.001	--
Worker Commute [f]	0.001	0.034	0.003	0.000	0.001	0.000	0.008	0.002	6.906
Crane and 12" Elevated Slab									
150 Ton Crane [e]	0.014	0.056	0.160	0.000	0.007	0.007	--	--	9.972

TABLE A-2
Construction Emissions
Palo Alto Dewatering Building Project

Equipment / Vehicle List [a]	Equipment / Vehicle Type	Quantity [a]	Quantity Units	Number of Days Used [a]	Hours per Day [b]	Miles per Day [c]	Emissions (lbs/day) [d]								
							VOC	CO	NOx	SOx	$PM_{10\_Exhaust}$	$PM_{2.5\_Exhaust}$	$PM_{10\_Fugitive}$	$PM_{2.5\_Fugitive}$	CO_2
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	14	--	45	--	14.6	0.086	0.344	2.627	0.007	0.071	0.042	0.134	0.033	756.666
Concrete Pump	Construction Equipment	1	--	5	10	--	0.836	4.828	6.137	0.008	0.445	0.445	--	--	778.780
Concrete Material Loads	Offsite Heavy-duty Diesel	1	--	45	--	40	0.017	0.068	0.520	0.001	0.014	0.008	0.026	0.007	149.739
Fugitive Dust [i]	Aggregates	203	tons	45	--	--	--	--	--	--	--	--	0.092	0.014	--
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	45	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Crane and Elevated 12" Walls															
150 Ton Crane [e]	Construction Equipment	1	--	12	10	--	0.900	3.731	10.664	0.007	0.484	0.445	--	--	732.781
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	15	--	22	--	14.6	0.095	0.380	2.898	0.008	0.078	0.046	0.148	0.037	834.728
Concrete Pump	Construction Equipment	1	--	3	10	--	0.836	4.828	6.137	0.008	0.445	0.445	--	--	778.780
Concrete Material Loads	Offsite Heavy-duty Diesel	1	--	22	--	40	0.017	0.068	0.520	0.001	0.014	0.008	0.026	0.007	149.739
Fugitive Dust [i]	Aggregates	98	tons	22	--	--	--	--	--	--	--	--	0.090	0.014	--
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	22	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Structural Steel, Metal Decking, Metal Screens, and Metal Stairs															
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	2	--	52	--	14.6	0.014	0.057	0.434	0.001	0.012	0.007	0.022	0.006	125.075
Welder [e]	Construction Equipment	1	--	52	10	--	1.000	3.504	3.206	0.005	0.253	0.253	--	--	369.065
90 Ton Crane	Construction Equipment	1	--	7	10	--	0.900	3.731	10.664	0.007	0.484	0.445	--	--	732.781
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	52	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Steel Trusses															
90 Ton Crane	Construction Equipment	1	--	53	10	--	0.900	3.731	10.664	0.007	0.484	0.445	--	--	732.781
Welder	Construction Equipment	1	--	53	10	--	0.703	2.462	2.253	0.003	0.178	0.178	--	--	259.343
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	1	--	53	--	14.6	0.007	0.026	0.200	0.001	0.005	0.003	0.010	0.003	57.748
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	53	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Waterproofing															
2 Ton Flatbed Crew Truck	Offsite Heavy-duty Diesel	1	--	14	--	14.6	0.006	0.025	0.190	0.001	0.005	0.003	0.010	0.002	54.655
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	14	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
BUR Roofing and Skylights															
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	2	--	5	--	14.6	0.011	0.045	0.342	0.001	0.009	0.005	0.017	0.004	98.379
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	5	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Doors and Windows															
2 Ton Flatbed Crew Truck	Offsite Heavy-duty Diesel	1	--	45	--	14.6	0.006	0.025	0.190	0.001	0.005	0.003	0.010	0.002	54.655
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	45	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Finishes Painting															
Pickup	Offsite Light-duty Truck	1	--	10	--	14.6	0.001	0.057	0.006	0.000	0.002	0.001	0.010	0.002	10.845
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	10	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Bridge Cranes															
2 Ton Flatbed Crew Truck	Offsite Heavy-duty Diesel	1	--	10	--	14.6	0.006	0.025	0.190	0.001	0.005	0.003	0.010	0.002	54.655
Forklift	Construction Equipment	1	--	10	10	--	0.286	1.579	2.442	0.002	0.204	0.188	--	--	198.399
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	10	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
HVAC															
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	6	--	10	--	14.6	0.035	0.142	1.081	0.003	0.029	0.017	0.055	0.014	311.532
Boom Truck	Construction Equipment	1	--	10	10	--	0.900	3.731	10.664	0.007	0.484	0.445	--	--	732.781
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	10	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Cassions															
40 Ton Crane	Construction Equipment	1	--	10	10	--	0.900	3.731	10.664	0.007	0.484	0.445	--	--	732.781
Hammer 22k ft-lb	Construction Equipment	1	--	10	10	--	0.472	2.668	4.053	0.003	0.342	0.314	--	--	332.408
Drill Rig Truck Mount [e]	Construction Equipment	5	--	98	10	--	2.061	12.128	31.067	0.051	0.912	0.839	--	--	5,375.199
Offhaul Loads	Offsite Heavy-duty Diesel	1	--	49	--	40	0.017	0.068	0.520	0.001	0.014	0.008	0.026	0.007	149.739
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	98	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Dewatering Building Maximum							**3.484**	**20.073**	**46.443**	**0.066**	**1.802**	**1.628**	**0.737**	**0.166**	**6,921.087**
Process Equipment															
Elevated Platform, Piping, Belt Conveyor, Cake Bins, Polymer Pumps and Equipment, Belt Filter Press, Scum Concentrator, and Hot Water Systems															
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	7	--	60	--	14.6	0.041	0.165	1.259	0.003	0.034	0.020	0.064	0.016	362.544
Forklift	Construction Equipment	1	--	60	10	--	0.286	1.579	2.442	0.002	0.204	0.188	--	--	198.399
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	60	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Process Equipment Maximum							**0.362**	**3.221**	**3.840**	**0.009**	**0.289**	**0.229**	**0.393**	**0.098**	**891.903**
Electrical															
Electrical Allowances (Lighting and Power), Transformer, MCC 2500 A, Electrical Panels, Transformer 2000 kVA, Generator, and I & C Allowance															
2 Ton Flatbed Crew Truck [e]	Offsite Heavy-duty Diesel	9	--	30	--	14.6	0.056	0.224	1.708	0.005	0.046	0.027	0.087	0.022	491.893
Wire and Conduit	Construction Equipment	1	--	30	10	--	0.472	2.668	4.053	0.003	0.342	0.314	--	--	332.408
Worker Commute [f]	Offsite Light-duty Auto/Truck	20	--	30	--	24.8	0.035	1.477	0.140	0.003	0.051	0.021	0.329	0.082	330.961
Electrical Maximum							**0.563**	**4.369**	**5.900**	**0.011**	**0.438**	**0.362**	**0.416**	**0.104**	**1,155.262**

TABLE A-2
Construction Emissions
Palo Alto Dewatering Building Project

Equipment / Vehicle List [a]	Emissions (tons/project) [d]								CO_2 Emissions (metric tons/project) [d]
	VOC	CO	NOx	SOx	$PM_{10\_Exhaust}$	$PM_{2.5\_Exhaust}$	$PM_{10\_Fugitive}$	$PM_{2.5\_Fugitive}$	
2 Ton Flatbed Crew Truck [e]	0.002	0.008	0.059	0.000	0.002	0.001	0.003	0.001	15.445
Concrete Pump	0.002	0.012	0.015	0.000	0.001	0.001	--	--	1.766
Concrete Material Loads	0.000	0.002	0.012	0.000	0.000	0.000	0.001	0.000	3.056
Fugitive Dust [i]	--	--	--	--	--	--	0.002	0.000	--
Worker Commute [f]	0.001	0.033	0.003	0.000	0.001	0.000	0.007	0.002	6.755
Crane and Elevated 12" Walls									
150 Ton Crane [e]	0.005	0.022	0.064	0.000	0.003	0.003	--	--	3.989
2 Ton Flatbed Crew Truck [e]	0.001	0.004	0.032	0.000	0.001	0.001	0.002	0.000	8.330
Concrete Pump	0.001	0.007	0.009	0.000	0.001	0.001	--	--	1.060
Concrete Material Loads	0.000	0.001	0.006	0.000	0.000	0.000	0.000	0.000	1.494
Fugitive Dust [i]	--	--	--	--	--	--	0.001	0.000	--
Worker Commute [f]	0.000	0.016	0.002	0.000	0.001	0.000	0.004	0.001	3.303
Structural Steel, Metal Decking, Metal Screens, and Metal Stairs									
2 Ton Flatbed Crew Truck [e]	0.000	0.001	0.011	0.000	0.000	0.000	0.001	0.000	2.950
Welder [e]	0.026	0.091	0.083	0.000	0.007	0.007	--	--	8.705
90 Ton Crane	0.003	0.013	0.037	0.000	0.002	0.002	--	--	2.327
Worker Commute [f]	0.001	0.038	0.004	0.000	0.001	0.001	0.009	0.002	7.806
Steel Trusses									
90 Ton Crane	0.024	0.099	0.283	0.000	0.013	0.012	--	--	17.616
Welder	0.019	0.065	0.060	0.000	0.005	0.005	--	--	6.235
2 Ton Flatbed Crew Truck [e]	0.000	0.001	0.005	0.000	0.000	0.000	0.000	0.000	1.388
Worker Commute [f]	0.001	0.039	0.004	0.000	0.001	0.001	0.009	0.002	7.956
Waterproofing									
2 Ton Flatbed Crew Truck	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.347
Worker Commute [f]	0.000	0.010	0.001	0.000	0.000	0.000	0.002	0.001	2.102
BUR Roofing and Skylights									
2 Ton Flatbed Crew Truck [e]	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.223
Worker Commute [f]	0.000	0.004	0.000	0.000	0.000	0.000	0.001	0.000	0.751
Doors and Windows									
2 Ton Flatbed Crew Truck	0.000	0.001	0.004	0.000	0.000	0.000	0.000	0.000	1.116
Worker Commute [f]	0.001	0.033	0.003	0.000	0.001	0.000	0.007	0.002	6.755
Finishes Painting									
Pickup	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.049
Worker Commute [f]	0.000	0.007	0.001	0.000	0.000	0.000	0.002	0.000	1.501
Bridge Cranes									
2 Ton Flatbed Crew Truck	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.248
Forklift	0.001	0.008	0.012	0.000	0.001	0.001	--	--	0.900
Worker Commute [f]	0.000	0.007	0.001	0.000	0.000	0.000	0.002	0.000	1.501
HVAC									
2 Ton Flatbed Crew Truck [e]	0.000	0.001	0.005	0.000	0.000	0.000	0.000	0.000	1.413
Boom Truck	0.005	0.019	0.053	0.000	0.002	0.002	--	--	3.324
Worker Commute [f]	0.000	0.007	0.001	0.000	0.000	0.000	0.002	0.000	1.501
Cassions									
40 Ton Crane	0.005	0.019	0.053	0.000	0.002	0.002	--	--	3.324
Hammer 22k ft-lb	0.002	0.013	0.020	0.000	0.002	0.002	--	--	1.508
Drill Rig Truck Mount [e]	0.101	0.594	1.522	0.003	0.045	0.041	--	--	238.939
Offhaul Loads	0.000	0.002	0.013	0.000	0.000	0.000	0.001	0.000	3.328
Worker Commute [f]	0.002	0.072	0.007	0.000	0.002	0.001	0.016	0.004	14.712
Dewatering Building Maximum	**0.264**	**1.579**	**3.118**	**0.005**	**0.130**	**0.113**	**0.107**	**0.025**	**475.937**
Process Equipment									
Elevated Platform, Piping, Belt Conveyor, Cake Bins, Polymer Pumps and Equipment, Belt Filter Press, Scum Concentrator, and Hot Water Systems									
2 Ton Flatbed Crew Truck [e]	0.001	0.005	0.038	0.000	0.001	0.001	0.002	0.000	9.867
Forklift	0.009	0.047	0.073	0.000	0.006	0.006	--	--	5.400
Worker Commute [f]	0.001	0.044	0.004	0.000	0.002	0.001	0.010	0.002	9.007
Process Equipment Maximum	**0.011**	**0.097**	**0.115**	**0.000**	**0.009**	**0.007**	**0.012**	**0.003**	**24.274**
Electrical									
Electrical Allowances (Lighting and Power), Transformer, MCC 2500 A, Electrical Panels, Transformer 2000 kVA, Generator, and I & C Allowance									
2 Ton Flatbed Crew Truck [e]	0.001	0.003	0.026	0.000	0.001	0.000	0.001	0.000	6.694
Wire and Conduit	0.007	0.040	0.061	0.000	0.005	0.005	--	--	4.523
Worker Commute [f]	0.001	0.022	0.002	0.000	0.001	0.000	0.005	0.001	4.504
Electrical Maximum	**0.008**	**0.066**	**0.089**	**0.000**	**0.007**	**0.005**	**0.006**	**0.002**	**15.721**

TABLE A-2
Construction Emissions
Palo Alto Dewatering Building Project

Notes:
-- = Parameter not required for computing emissions.
[a] Unless otherwise noted, Equipment / Vehicle List provided by J. DeWolf in 'Palo Alto Dewatering Building Equipment 6-3-15.xlsx' and it was conservatively assumed that one piece of each equipment / vehicle type would be used for multiple days during the subsequent phases of construction, as applicable.
[b] The Hours per Day were assumed based on the anticipated construction schedule.
[c] Miles per Day for vehicles were calculated as follows:
- For hauling type vehicles: 40 miles (20 x 2) per Section 4.5 of Appendix A of the *CalEEMod User's Guide* (ENVIRON, 2013).
- For delivery type vehicles: 14.6 miles (7.3 x 2) per Table 4-2 of Appendix D of the *CalEEMod User's Guide* (ENVIRON, 2013); C-NW value for an urban setting in the San Francisco Bay Area.
- For worker commutes: 24.8 miles (12.4 x 2) per Table 4-2 of Appendix D of the *CalEEMod User's Guide* (ENVIRON, 2013); H-W value for an urban setting in the San Francisco Bay Area.
- For onsite vehicles: estimated to be 5 miles per day based on the size of the project site.
[d] The following conversion factors were used to estimate emissions:
[e] Quantities were adjusted to accommodate potential overlapping activities, using engineering judgment and the proposed schedule of construction activities.
[f] The quantity of Worker Commutes assumes a maximum of 10 vehicles accessing the site per day (for 20 vehicle trips per day), as provided in Section 1.8.2 of the Initial Study. Number of Days Used generally set equal to the longest duration for other equipment or vehicles used during the same construction activity.
[g] The areas disturbed were estimated based on data provided by J. DeWolf in '658394 Palo Alto Sludge Dewatering Detail 5-21-15.pdf', specifically looking at areas to be graded. Estimates were converted from ft^2 and yd^2 to acres using the above conversion factors.
[h] The cut/fill quantities were estimated based on data provided by J. DeWolf in '658394 Palo Alto Sludge Dewatering Detail 5-21-15.pdf', specifically looking at materials associated with backfill/compact and excavation activities. Quantities were assumed to be offsite when associated with a 'Haul spoils, offsite' activity.
[i] The aggregate quantities were estimated based on data provided by J. DeWolf in '658394 Palo Alto Sludge Dewatering Detail 5-21-15.pdf', specifically looking at materials associated with concrete and subbase activities. Estimates were converted from yd^3 to tons using the above conversion factor.
[j] The paving area was estimated based on data provided by J. DeWolf in '658394 Palo Alto Sludge Dewatering Detail 5-21-15.pdf'. Estimate was converted from ft^2 to acres using the above conversion factor.

TABLE A-3

Construction Equipment Emission Factors

Palo Alto Dewatering Building Project

Emission Factors from OFFROAD2011

Equipment List [a]	Equipment Category [b]	Horsepower [c]	Load Factor [c]	Emission Factors (g/bhp-hr) [d]						
				VOC	CO	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
1.5 CY Loader	Rubber Tired Loader	200	0.36	0.393	1.452	5.115	0.005	0.175	0.161	503.654
10 Ton Steel Roller	Roller	81	0.38	0.628	3.755	5.806	0.005	0.428	0.393	508.199
12 Ton Pneumatic Roller	Roller	81	0.38	0.628	3.755	5.806	0.005	0.428	0.393	508.199
25 Ton Vibrating Roller	Roller	81	0.38	0.628	3.755	5.806	0.005	0.428	0.393	508.199
50" Vibratory Roller	Roller	81	0.38	0.628	3.755	5.806	0.005	0.428	0.393	508.199
66" Vibratory Roller	Roller	81	0.38	0.628	3.755	5.806	0.005	0.428	0.393	508.199
Cat 320 DL	Excavator	163	0.38	0.358	3.158	4.081	0.005	0.201	0.185	506.495
Cat 416E	Tractor/Loader/Backhoe	98	0.37	0.538	3.811	5.142	0.005	0.396	0.364	511.346
Cat 420 E	Tractor/Loader/Backhoe	98	0.37	0.538	3.811	5.142	0.005	0.396	0.364	511.346
Cat D 6	Crawler Tractor	208	0.43	0.449	1.803	6.047	0.005	0.233	0.215	507.355
Crane 30 Ton	Crane	226	0.29	0.623	2.582	7.381	0.005	0.335	0.308	507.155
Dozer 300 hp	Crawler Tractor	300	0.43	0.398	2.744	5.279	0.005	0.205	0.188	510.339
Grader 30000 lbs	Grader	175	0.41	0.810	3.916	8.250	0.005	0.464	0.426	516.131
Grader Cat 140M 17	Grader	175	0.41	0.810	3.916	8.250	0.005	0.464	0.426	516.131
Loader 950H	Rubber Tired Loader	200	0.36	0.393	1.452	5.115	0.005	0.175	0.161	503.654
Loader Cat 938 H	Rubber Tired Loader	200	0.36	0.393	1.452	5.115	0.005	0.175	0.161	503.654
Paving Machine 130 hp	Paving Equipment	131	0.36	0.372	3.081	4.322	0.005	0.215	0.197	504.820
Rammax	Roller	81	0.38	0.628	3.755	5.806	0.005	0.428	0.393	508.199
Roller Bomag BW65H	Roller	81	0.38	0.628	3.755	5.806	0.005	0.428	0.393	508.199
Scraper Cat 621 G	Scraper	362	0.48	0.452	3.606	5.757	0.005	0.232	0.214	506.350
Vibraplate	Plate Compactor	8	0.43	0.661	3.469	4.142	0.008	0.161	0.161	568.299
150 Ton Crane	Crane	226	0.29	0.623	2.582	7.381	0.005	0.335	0.308	507.155
40 Ton Crane	Crane	226	0.29	0.623	2.582	7.381	0.005	0.335	0.308	507.155
90 Ton Crane	Crane	226	0.29	0.623	2.582	7.381	0.005	0.335	0.308	507.155
Boom Truck	Crane	226	0.29	0.623	2.582	7.381	0.005	0.335	0.308	507.155
Concrete Pump	Pump	84	0.74	0.610	3.523	4.478	0.006	0.325	0.325	568.299
Drill Rig Truck Mount	Bore/Drill Rig	206	0.50	0.193	1.133	2.902	0.005	0.085	0.078	502.128
Forklift	Forklift	89	0.20	0.730	4.023	6.222	0.005	0.520	0.479	505.583
Hammer 22k ft-lb	Other General Industrial Equipment	88	0.34	0.716	4.045	6.144	0.005	0.518	0.476	503.944
Welder	Welder	46	0.45	1.540	5.395	4.936	0.007	0.389	0.389	568.299
Wire and Conduit	Other General Industrial Equipment	88	0.34	0.716	4.045	6.144	0.005	0.518	0.476	503.944

Notes:

[a] Equipment List provided by J. DeWolf in 'Palo Alto Dewatering Building Equipment 6-3-15.xlsx'.

[b] Equipment Categories selected to best align the CalEEMod default equipment types with the equipment expected for this project.

[c] Unless specifically noted in the Equipment List, Horsepower and Load Factors taken as the default, average values provided in Table 3.3 of Appendix D of the *CalEEMod User's Guide* (ENVIRON, 2013).

[d] Emission Factors taken as the default values for the year 2016 provided in Table 3.4 of Appendix D of the *CalEEMod User's Guide* (ENVIRON, 2013).

TABLE A-4

Construction Vehicle Emission Factors

Palo Alto Dewatering Building Project

Emission Factors from EMFAC2014 and AP-42

Vehicle	Vehicle Class [a]	Exhaust Emission Factors (g/mile) [b]							Road Emission Factors (g/mile) [c]	
		VOC	CO	NOx	SOx	PM_{10} [d]	$PM_{2.5}$ [d]	CO_2	PM_{10}	$PM_{2.5}$
2 Ton Flatbed Crew Truck	Offsite Heavy-duty Diesel	0.193	0.773	5.895	0.016	0.158	0.093	1,698.043	0.300	0.075
3000 Gal Tanker	Onsite Heavy-duty Diesel	2.028	4.999	20.707	0.033	0.313	0.241	3,408.501	903.622	90.362
Concrete Material Loads	Offsite Heavy-duty Diesel	0.193	0.773	5.895	0.016	0.158	0.093	1,698.043	0.300	0.075
Offhaul Loads	Offsite Heavy-duty Diesel	0.193	0.773	5.895	0.016	0.158	0.093	1,698.043	0.300	0.075
Pipe Bedding Material Loads	Offsite Heavy-duty Diesel	0.193	0.773	5.895	0.016	0.158	0.093	1,698.043	0.300	0.075
Water Truck	Onsite Heavy-duty Diesel	2.028	4.999	20.707	0.033	0.313	0.241	3,408.501	903.622	90.362
Tractor Truck 380 hp	Offsite Heavy-duty Diesel	0.193	0.773	5.895	0.016	0.158	0.093	1,698.043	0.300	0.075
Worker Commute	Offsite Light-duty Auto/Truck	0.032	1.351	0.128	0.003	0.046	0.019	302.669	0.300	0.075
Pickup	Offsite Light-duty Truck	0.045	1.762	0.175	0.003	0.047	0.020	336.945	0.300	0.075

TABLE A-4
Construction Vehicle Emission Factors
Palo Alto Dewatering Building Project

Notes:

[a] The vehicle classes are represented as follows:

Heavy-duty Diesel: Assumed to be 100% HHDT, DSL values, per Section 4.5 of Appendix A of the *CalEEMod User's Guide* (Environ, 2013).
Light-duty Truck: Assumed to be an average of LDT1, GAS and LDT2, GAS values.
Light-duty Auto/Truck: Assumed to be 50% LDA, GAS; 25% LDT1, GAS; and 25% LDT2, GAS values, per Section 4.5 of Appendix A of the *CalEEMod User's Guide* (ENVIRON, 2013).

[b] Exhaust Emission Factors from EMFAC2014 for Santa Clara County, calendar year 2016. EMFAC2007 Vehicle Categories were used. A speed of 40 mph was assumed for offsite, onroad vehicles, which is consistent with the CalEEMod default. A speed of 5 mph was assumed for onsite, offroad vehicles. An average temperature of 64°F and humidity of 62% were used per Table B-1 of *CT-EMFAC: A Computer Model to Estimate Transportation Project Emissions* (UC Davis, 2007).

[c] Paved and unpaved road emission factors were calculated using CalEEMod methodology, as described below.

[d] The PM_{10} and $PM_{2.5}$ emission factors include tire and brake wear.

Derivation of Paved Road Emission Factors

Parameter	PM_{10}	$PM_{2.5}$
Average Weight [a]	2.4	2.4
k [b]	1	0.25
sL [a]	0.1	0.1
Emission Factor (g/mile) [c]	**0.300**	**0.075**

Notes:

[a] Average Weight and sL taken as the default value from CalEEMod for Santa Clara County.

[b] k taken from Table 13.2.1-1 of Section 13.2.1 of *AP-42* (EPA, 2011).

[c] Emission factor calculated using Equation 1 from Section 13.2.1 of *AP-42* (EPA, 2011):

Emission Factor (g/mile) = k (g/mile) x $[sL\ (g/m^2)]^{0.91}$ x $[\text{Average Weight (tons)}]^{1.02}$

Derivation of Unpaved Road Emission Factors

Parameter	PM_{10}	$PM_{2.5}$
Mean Vehicle Weight [a]	16.5	16.5
Silt Content [b]	8.5	8.5
k [c]	1.5	0.15
a [c]	0.9	0.9
b [c]	0.45	0.45
P [d]	58	58
Emission Factor (g/mile) [e]	903.62	90.36

Notes:

[a] Mean vehicle weight assumes that heavy- and light-duty trucks weigh an average of 16.5 tons.

[b] Silt content taken from Table 13.2.2-1 of Section 13.2.2 of *AP-42* (EPA, 2006) for a Construction Site, Scraper Route; this value is consistent with the CalEEMod defaults.

[c] k, a, and b taken from Table 13.2.2-2 of Section 13.2.2 of *AP-42* (EPA, 2006) for industrial roads.

[d] P taken as the CalEEMod default for the climate region of Santa Clara County

[e] Emission factor calculated using Equations 1a and 2 from Section 13.2.2 of *AP-42* (EPA, 2006):

Emission Factor (g/mile) = {k (lbs/mile) x $[\text{Silt Content (\%)} / 12]^{a}$ x $[\text{Mean Vehicle Weight (tons)} / 3]^{b}$} x [(365-P) / 365] x 453.6 (g/lb)

TABLE A-5

Fugitive Dust Emission Factors

Palo Alto Dewatering Building Project

Emission Factors from WRAP Fugitive Dust Handbook

Activity	Emission Factors		
	PM_{10} [a]	$PM_{2.5}$ [b]	Units
Disturbed Surface	0.110	0.023	ton/acre-month
	0.005	0.001	ton/acre-day [c]
Onsite Cut/Fill [d]	0.059	0.012	ton/1,000 yd^3
Offsite Cut/Fill [d]	0.220	0.046	ton/1,000 yd^3
Aggregates [e]	0.020	0.003	lbs/ton

Notes:

[a] Unless otherwise noted, PM_{10} emission factors taken from Table A-4 of Appendix A of the *Software User's Guide: URBEMIS2007 for Windows* (JSA, 2007).

[b] Unless otherwise noted, $PM_{2.5}$ emissions assumed to be 20.8% of the PM_{10} emissions for construction fugitive dust sources per the *Final - Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds* (SCAQMD, 2006).

[c] Emission factor converted to units of ton/acre-day assuming 22 construction days per month.

[d] All cut/fill quantities were assumed to be handled and remain onsite, except those specifically labeled as "Haul spoils, offsite" in '658394 Palo Alto Sludge Dewatering Detail 5-21-15.pdf', which was provided by J. DeWolf.

[e] Aggregate emission factors were calculated per the Debris Loading Equation of Section 4.4 of Appendix A of the *CalEEMod User's Guide* (ENVIRON, 2013).

TABLE A-6

Paving Emission Factor

Palo Alto Dewatering Building Project

Emission Factors from CalEEMod

Activity	Emission Factor	
	VOC	Units
Paving [a]	2.620	lb/acre

Notes:

[a] Emission factor from Section 4.8 of Appendix A of the *CalEEMod User's Guide* (ENVIRON, 2013).

Herb Borock

P. O. Box 632

Palo Alto, CA 94302

January 13, 2016

Ms. Amy French

Chief Planning Official

City of Palo Alto

250 Hamilton Avenue

Palo Alto, CA 94301

2501 Embarcadero Road (File 15-PLN-00371)

Regional Water Quality Control Plant Sludge Dewatering and Loadout Facility

Dear Ms. French:

The proposed Mitigated Negative Declaration (MND) should not be approved, because all potentially significant effects have not been adequately analyzed.

1/3

In particular, the MND does not adequately analyze Aesthetics (Visual Quality), Air Quality (Odors), Greenhouse Gas Emissions, and Cumulative Effects of probable future projects.

Visual Quality

The project Plans for Site and Design Review dated December 2015 submitted to the Architectural Review Board include visual projections from three low-level viewpoints at the former landfill southeast of the project. (See attached document.)

These low level views from the former landfill are not adequate to evaluate the views from the parkland that is forecast as "the main high ground landmark in the flatness of the Baylands" (Baylands Master Plan 2008, page 68).

To be adequate, the MND must analyze views of the project from high points in that park land.

Odors

The MND provides no objective information about odors from the plant. Instead only narrative is provided. Substantial evidence is required to support the statements made about odors.

CEQA Regulation 15384 says, "Argument, speculation, unsubstantiated opinion or narrative ... does not constitute substantial evidence."

Greenhouse Gas Emissions

The section of the MND on Greenhouse Gas Emissions discusses construction, energy, and truck transportation, but omits emissions from project operation.

Cumulative Effects

Technical Memorandum 8 dated May 2015 on Odor Control (attached) makes clear that there would be cumulatively considerable effects from Component 2 of the Biosolids Facility Project.

Actual calculations of the proposed Component 1 odor control need to be provided, showing emissions and effect of odor controls, plus the model used must be disclosed.

Also alternative statements of the need for odor control if Component 2 is gasification or pyrolysis must be included.

Sincerely,

Herb Borock

Attachments
1. View Points (2 PAGES)
2. Odor Control (3 PAGES)

3/3

ARB Submittal for Major Project

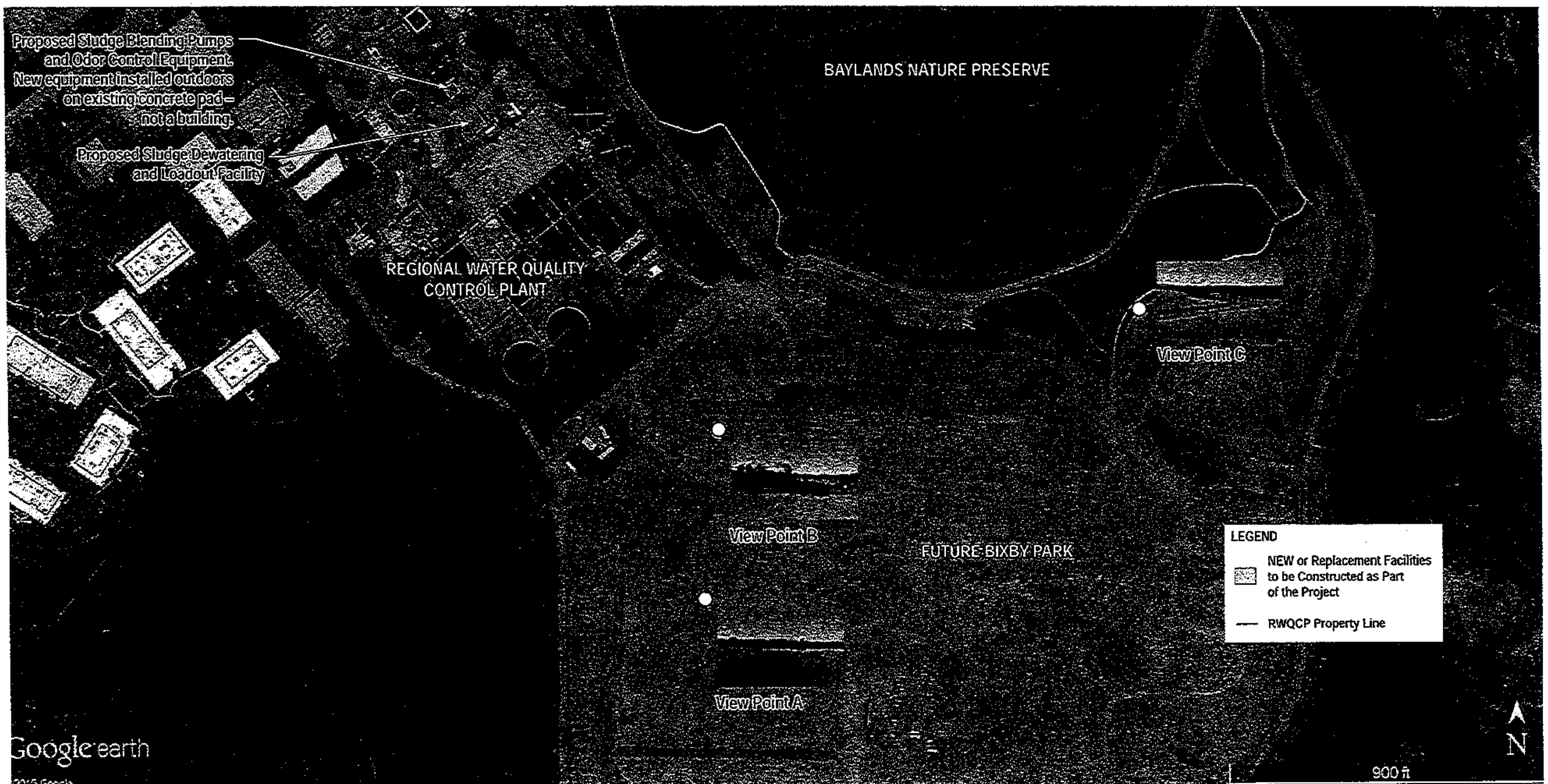
Component 1 Sludge Dewatering and Loadout Facility for the Regional Water Quality Control Plant

Plans for Site and Design Review

Prepared for
City of Palo Alto

December 2015

CH2MHILL



Source: Aerial from Google Earth Pro © 2015. Additional information added by CH2M HILL.

Neighborhood Context:
Aerial Photo Showing Photomontage Locations
from Bixby Park
Palo Alto Regional Water Quality Control Plant

CH2MHILL.

Draft Schematic Design Report

Component 1 Sludge Dewatering and Loadout Facility for the Regional Water Quality Control Plant

Technical Memoranda

Prepared for
City of Palo Alto

May 2015

CH2MHILL®

Odor Control - DRAFT

PREPARED FOR:	Padam Chaobal/City of Palo Alto
PREPARED BY:	Neal Forester/CH2M HILL
REVIEWED BY:	Scott Cowden/CH2M HILL
DATE:	May 1, 2015
PROJECT NUMBER:	658394
PROJECT TITLE:	City of Palo Alto Component 1 Sludge Dewatering and Loadout Facility Schematic Design Report for the Regional Water Quality Control Plant

Introduction

This technical memorandum (TM) presents the 30-percent schematic design for odor control for the Component 1 Sludge Dewatering and Loadout Facility at the Palo Alto Regional Water Quality Control Plant (RWQCP). The basis of design presented with this TM is based on information from the *Preliminary Design Report for the Dewatering/Truck Loadout Facility for the Regional Water Quality Control Plant* (CH2M HILL, August 2014) and the *Preliminary Design Report for Thermal Hydrolysis Process and Mesophilic Anaerobic Digestion Facilities for the Regional Water Quality Control Plant* (CH2M HILL, March 2015).

Odor Control Approach

Some biosolids processes emit odors that, if left unmitigated, pose a significant risk to offsite odor impacts as well as safety concerns at the source itself. As mentioned in TM 2, Process Mechanical, the future thermally hydrolyzed digested biosolids can produce very high ammonia levels at the belt filter presses. Odor control will be provided for containing all significant odor sources, ventilating those sources to meet all applicable standards and requirements, and extracting and treating the odorous air in a robust and easy to operate treatment system.

Odor control systems will be configured to achieve an odor goal at the plant fence line of 5 dilutions to threshold (D/T) and 99 percent compliance based on a 1 hour average, meeting the Bay Area Air Quality Management District (BAAQMD) regulatory requirement.

Component 1 Preliminary Design Report Basis

The odor control approach for the Component 1 Sludge Dewatering and Loadout Facility was originally based on providing a humidifier/ammonia scrubber, long-life engineered media biofilter to treat concentrated odor sources, with the treated discharge combined with dilute odor source ventilation air and discharged through a dispersion stack. This system was proposed to accommodate both the short-term raw sludge dewatering and loadout as well as the future, longer-term dewatering and loadout of thermally hydrolyzed digested biosolids.

Component 2 Preliminary Design Report Basis

As part of developing the preliminary basis of design for the Component 2 Thermal Hydrolysis Process and Mesophilic Anaerobic Digestion Facilities, mitigation of odors from raw sludge dewatering was determined to be based on dosing the raw sludge with sodium-hypochlorite (chlorine solution). Currently, the plant doses chlorine solution into the raw sludge upstream of the existing dewatering belt filter presses in the Solids Incineration Building for the purpose of oxidizing dissolved sulfides and depressing odor emissions. Roof-mounted exhaust fans at the Solids Incineration Building are used to ventilate the belt filter press space and discharge the untreated odor emissions high enough to provide adequate dispersion and dilution for preventing offsite odor impacts.

Revision of the Component 1 Odor Control Approach

Based on the success of the existing belt filter press odor control approach, the odor control approach for the Component 1 Sludge Dewatering and Loadout Facility was revised to be as follows:

- Treat dilute odor from the belt filter press room and the truck loadout bay discharged untreated through a dispersion stack.
- Treat concentrated odor from the equalization/blend tank, cake storage bins, screw conveyors, and scum concentrator via an odorous air duct connection to the existing soil-media biofilter.

Component 1 Schematic Design Development

Since completing the Component 2 preliminary design report, it has been learned that the condition of the existing soil-media biofilter is such that it is unlikely to have the capacity to accept the addition of the concentrated odor sources related to the Component 1 facility. Therefore, the following approach was developed, based largely on the success of the existing belt filter press raw sludge dewatering operation in the Solids Incineration Building:

- Collect odorous air from the concentrated odor sources and discharge them untreated, via a dispersion stack. Success of this approach is based on continued dosing of the raw sludge with chlorine solution to depress odor emissions. An exhaust fan will be provided on the open deck of the building and discharge via a dispersion stack mounted to the exterior of the building's second story. As part of Component 2 construction, the exhaust fan will be removed and the odorous air ductwork will be extended and connected to the new engineered-media based biofilter that is planned to replace the existing soil-media based biofilter.
- Dilute odors from the truck loadout bay will be discharged untreated via a dispersion stack. Two exhaust fans will be provided.
- Dilute odors from the belt filter press room will be discharged untreated via a dispersion stack. Two exhaust fans will be provided. As part of Component 2 construction, the exhaust fans will be removed and the odorous air ductwork will be extended and connected to the new engineered-media based biofilter. This will provide for control of the future higher ammonia concentrations from the thermal hydrolyzed and digested biosolids.

Description of the ventilation systems and exhaust fans for the various rooms are described in TM 8, HVAC, Plumbing, and Fire Protection.