Extra Space Storage Santee Project
Santee, California

Class 32 CEQA Exemption Analysis

PROJECT CHARACTERISTICS

1. **Project Title:**

   Extra Space Storage Santee Project

2. **Lead Agency Name and Address:**

   City of Santee
   10601 Magnolia Avenue
   Santee, CA 92701
   (619) 258-4100

3. **Contact Person and Phone Number:**

   Christina Rios, Senior Planner
   Planning & Building Department
   10601 Magnolia Avenue
   Santee, CA 92071
   (619) 258-4100, x157
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4. **Project Location:**

   The 2.81-acre project site at 10835 Woodside Avenue in Santee, California (Assessor's Parcel Number [APN] 384-120-46) is currently developed with four self-storage buildings and an undeveloped area that provides at-grade storage for recreational vehicles and boats. The project site is surrounded by a mixture of residential and commercial uses. As shown on Figure 1, Regional Location (all figures are provided in Attachment A), regional access to the project site is provided by State Route 67 (SR-67), adjacent to the project site. Local access to the project site is provided by Woodside Avenue.

5. **Project Applicant:**

   Extra Space Storage
   2795 East Cottonwood Parkway, Suite 300
   Salt Lake City, UT 84121

6. **General Plan Designation:**

   According to the City of Santee's (City) General Plan Land Use Element, the project's land use designation is General Commercial (GC).

7. **Zoning:**

   According to the City's Zoning Map, the site is zoned GC.

8. **Description of Project:**

   The proposed project would construct an 87,100 square-foot (sq ft) self-storage building consisting of three stories in addition to a basement level, on the undeveloped area of the project site currently used for at-grade recreational vehicle and boat storage. Additionally, 7 parking stalls would be provided adjacent to the proposed building. The proposed project would also demolish small portions of all four existing, one-story self-storage buildings, 3,465 sq ft in total, to accommodate the addition of 11 new surface parking spaces. The proposed project would replace the existing office and caretaker's residence with a new caretaker's residence in the building. The proposed project would also include on-site utility connections including a new on-site sewer lateral to connect to the existing lateral stub. Access to the project site would be provided via two driveways along Woodside Avenue including one new driveway and realignment of the existing driveway. See the detailed discussion below in the Project Description.

9. **Surrounding Land Uses and Setting:**

   The project site is located at 10835 Woodside Avenue in an urbanized area of Santee. The proposed project site is immediately bounded to the northwest by Woodside Avenue, to the north by a commercial business, to the east by SR-67, and to the south by residential uses.

10. **Other Public Agencies Whose Approval is Required (e.g., permits, financial approval, or participation agreements):**

    a. **City of Santee:** Approval of the Categorical Exemption (CE) and a Conditional Use Permit (CUP) to allow self-storage facilities in GC zoning designation.

    b. **Federal Aviation Administration:** Determination of No Hazard to Air Navigation.

    c. **State Water Resources Control Board:** National Pollutant Discharge Elimination System Permit.

    d. **Airport Land Use Commission.** Determination of consistency with the Gillespie Field Airport Land Use Compatibility Plan.

PROJECT DESCRIPTION

Existing Project Site

As shown in Figure 1, Regional Location, the project site is located at 10835 Woodside Avenue in Santee, San Diego County, California. The 2.81-acre, 122,244 sq ft project site lies along the southeastern border of Woodside Avenue. The project site consists of APN 384-120-46-00. The existing project site includes a self-storage facility consisting of four one-story buildings with a combined square footage of 30,146 sq ft and a total of 257 units, with zero parking spaces, and an undeveloped area that provides at-grade storage for recreational vehicles and boats. The project site is characterized by a slight change in elevation sloping to the southwest. In the project site's existing condition, vehicular access is provided via one driveway along Woodside Avenue.

The project site is in an urban area surrounded by a mixture of residential and commercial uses. The proposed project site is immediately bounded to the northwest by Woodside Avenue, to the north by a commercial pet supply business, to the east by SR-67, and to the south by residential uses. Regional access to the project site is provided by SR-67, which is adjacent the project site. Local access to the project site is provided by Woodside Avenue.

Proposed Project

The proposed project would construct a new, 87,100 sq ft self-storage building on an undeveloped area of the project site that currently provides uncovered storage for recreational vehicles and boats. The proposed building would consist of three stories in addition to a basement level and would contain a total of 622 storage units and 7 adjacent parking stalls. An office space and 24-hour kiosk would be constructed within the southwest corner of the basement level, which would be the main point of entrance for customers. This portion of the basement level would sit at ground level due to the existing grade of the project site. Additionally, a 1,158 sq ft apartment would be constructed for an on-site caretaker on the first floor of the proposed building to replace the existing caretaker residence. The proposed project would also demolish small portions of each of the four existing one-story self-storage buildings, a total of 3,465 sq ft, to accommodate the addition of 11 new surface parking spaces and landscaping, for a total of 18 parking spaces. One new storage unit would be constructed in the northernmost existing building and the remaining portions of the existing buildings would continue to operate in their current configurations. Under post-development conditions, the total building square footage on site (including the existing 26,681 sq ft to remain) would be 113,781 sq ft, with a total of 854 storage units and 18 parking stalls.

Figure 2, Conceptual Site Plan, provides an overview of the proposed site plan, including the locations of the existing buildings to remain, the proposed building, vehicular access, ornamental fencing, parking areas, and a trash enclosure. The trash enclosure would be accessed from the ground floor and is to the southeast corner of the proposed building. The proposed project includes on-site utilities to connect to existing public utility mains and will dedicate a 20-foot-wide sewer easement on the project frontage to Padre Dam Municipal Water District (PDMWD) for future use. The proposed project also includes one new driveway and relocation of the existing driveway to improve alignment. The hours of operation would remain the same as current conditions: Monday through Friday from 9:30 a.m. to 6:00 p.m., Saturday from 9:00 a.m. to 5:30 p.m., and closed on Sunday. Storage gate hours would also remain the same: Monday through Sunday, 6:00 a.m. to 10:00 p.m.

Zoning and General Plan Land Use Designations

According to the City of Santee zoning map, the project site is currently zoned for General Commercial (GC). Per City Municipal Code Section 13.12.030, with approval of a CUP, operation of self-storage facilities is permitted within the GC zone. With approval of the CUP, the proposed project would be consistent with the GC zoning designation and applicable zoning regulations; the project does not propose deviations from zoning regulations. Additionally, the City of Santee General Plan designates the project site as GC. Table A indicates the proposed project's consistency with the City's applicable General Plan policies. As shown in this table, the proposed project would be consistent with the General Plan designation and would not require a General Plan Amendment.

Site Access and Parking

There is currently one access driveway along Woodside Avenue in the northwest corner of the project site. The proposed project would remove and replace the existing driveway and construct a second driveway in the southwest corner of the project site along Woodside Avenue. Therefore, upon completion, the proposed project would provide vehicular access via two driveways along Woodside Avenue, both of which would feature new automatic lift gates. The gates would be open to the public from 6:00 a.m. to 10:00 p.m. daily. A vehicular speed limit of 5 miles per hour would be posted on both entrance gates and would be maintained throughout the property.

Currently, the property contains zero parking spaces. Pursuant to City Municipal Code Section 13.24.020(A)-(B), off-street parking shall be provided for any addition or enlargement of an existing building or use, provided that the additional parking spaces shall be required only for such addition, enlargement, or change of occupancy or manner of operation and not for the entire building or use.

Table A: General Plan Consistency Analysis

Policies	Consistency Analysis
Land Use Element	
Objective 3.0: Provide and maintain the highest level of service possible for all community public services and facilities.	
Policy 3.6: Development projects shall be reviewed to ensure that all necessary utilities are available to serve the project and that any land use incompatibilities or impacts resulting from public utilities shall be mitigated to the maximum extent possible.	**Consistent.** All necessary utilities are available to serve the project as proposed and no land use incompatibilities or impacts would result from public utilities. The project site is currently served with electricity, water, and telephone utilities. The septic system currently serving the project site would be abandoned and the existing and proposed buildings would be connected to the public sewer system. The proposed project includes all necessary infrastructure within the project site to connect the proposed project to existing mainlines within Santee, including a new lateral to connect to an existing sewer lateral stub at the southwest corner of the site. PDMWD has indicated that their facilities are available to serve the proposed project, but that adequate water and sewer facility commitment shall be determined prior to final project approval/map recordation and shall be available concurrent with project need. Therefore, the proposed project would be consistent with **Land Use Element Policy 3.6.**
Objective 6.0: Ensure that natural and man-induced hazards are adequately addressed in the location and intensity of development in the City.	
Policy 6.2: The City should promote the use of innovative site planning to avoid on-site hazards and minimize risk levels.	**Consistent**. The proposed project is not on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.[1] Although there are no known hazards on site, the proposed project would be designed to avoid potential on-site hazards. Project design would include on-site signage and safety equipment, such as fire extinguishers and a fire alarm system, to minimize risk levels. Therefore, the proposed project would be consistent with **Land Use Element Policy 6.2**.
Noise Element	
Objective 1.0: Control noise from sources adjacent to residential, institutional and other noise-sensitive receptors.	
Policy 1.2: The City shall utilize noise studies and noise contour maps when evaluating development proposals during the discretionary review process.	**Consistent.** A noise and vibration analysis technical memorandum was prepared for the proposed project and analyzed baseline noise levels at the project site in comparison with potential noise levels generated by construction and operations associated with the proposed project. Potential construction and operational noise and vibration impacts were determined to be less than significant. This analysis was used to provide substantial evidence during the

[1] California Department of Toxic Substances Control (DTSC). n.d. EnviroStor Database. Website: https://www.envirostor.dtsc.ca.gov/public/map/?global_id=19970011 (accessed November 15, 2023).

Table A: General Plan Consistency Analysis

	discretionary review process. Therefore, the proposed project would be consistent with **Noise Element Policy 1.2.**
Safety Element	
Objective 4.0: Minimize injuries, loss of life and property damage resulting from fire hazards.	
Policy 4.3: The City shall require the installation of fire hydrants and establishment of emergency vehicle access, before construction with combustible materials can begin on an approved project. **Policy 4.4:** The City shall require emergency access routes in all developments to be adequately wide to allow the entry and maneuvering of emergency vehicles.	**Consistent.** The proposed project's adherence to requirements established by the Fire Department would be confirmed prior to the start of construction. The proposed project would provide a minimum 26-foot-wide, paved, "fire lane" access roadway through the project site. Additionally, the proposed access gates would be equipped with emergency vehicle access devices and Knox key switches for gate override during emergencies. Fire safety equipment and design elements such as fire hydrants, sprinkler systems, emergency access/fire lanes, fire extinguishers, and Knox boxes would be incorporated into the project design. The proposed project would satisfy all fire protection standards contained in the Uniform Fire and Building Codes. Therefore, the proposed project would be consistent with **Safety Element Policies 4.3 and 4.4.**
Community Enhancement Element	
Objective 6.0: Improve the appearance and condition of commercial facilities in the City.	
Policy 6.1: The City shall ensure that all new commercial developments contribute towards an overall positive and cohesive visual identity. **Policy 6.2:** The City shall promote rehabilitation of commercial sites and investigate funding opportunities for rehabilitation/remodeling of small businesses.	**Consistent.** The proposed project would rehabilitate and update an existing public storage facility by replacing underutilized, at-grade boat and RV storage with a new storage building providing an additional 61,018 square feet of net rentable space. The proposed building would feature a sleek, modern architectural style with a relatively neutral color palette that would increase the visual identity of the existing storage facility. Further, expansion of rentable space would increase the storage facility's commercial potential while also rehabilitating and upgrading the site's visual appearance. Therefore, the proposed project would be consistent with **Community Enhancement Element Policies 6.1 and 6.2.**

Source: Santee General Plan (City of Santee 2020).
City = City of Santee
PDMWD = Padre Dam Municipal Water District

Per City Municipal Code Section 13.24.040, a parking ratio of 1 parking space for every 5,000 sq ft of gross floor area must be maintained for self-storage facilities. As applied to the proposed project consisting of the addition of 87,100 sq ft of self-storage uses, the project requires 17 spaces (17.4 rounds down to 17 per City Municipal Code Section 13.24.020(F)). As shown on Figure 2, the proposed project would include a total of 18 parking spaces (both existing and proposed), 1 of which would be Americans with Disabilities Act (ADA) compliant. The proposed 18 parking space supply would provide adequate parking to accommodate the project's peak parking demand.

Building Design

The proposed project would include the development of a new 87,100 sq ft self-storage building, providing an additional 622 storage units to the existing storage capacity of the project site. Additionally, one new storage unit would be constructed within the northernmost existing building. Under post-development conditions, the total building square footage on site (including the existing 26,681 sq ft to remain) would be 113,781 sq ft, including a total of 854 storage units resulting in a total building footprint of approximately 40 percent of the total project site (122,244 sq ft). At its tallest point, the proposed new building would be three stories above ground level, reaching an approximate height of 39 feet, in addition to a basement level with a floor-to-floor height of 10 feet, 8 inches. City Municipal Code Section 13.12.040 limits the maximum building height to 25 feet within 50 feet of a residential district. The proposed project would comply with this limitation by setting back the third story so that it would be constructed more than 50 feet away from the adjacent residential uses. By contrast, the two-story portion of the proposed project would reach a maximum height of 21 feet. The proposed building would be located at the bottom of the existing slope between the project site and the adjacent residential buildings to the south. The Applicant would be responsible for maintaining the slope.

The largest storage unit size within the proposed building would be 10 feet by 30 feet, and the smallest storage unit size would be 5 feet by 5 feet. A range of units between these sizes would be available for rent.

The main entrance and on-site ADA-compliant office would be in the southwestern corner of the basement level of the proposed building. Due to the site's slope conditions, the main entrance and office would be accessed at ground level. The office would be operational throughout construction. The proposed project, once completed, would not require any additional employees on site compared to existing operations. Elevator access to the upper floors and basement of the proposed building would be provided near the loading area. Stair access would be provided via one of two stairwells at either the southwest edge of the proposed building or the northernmost tip of the proposed building.

Infrastructure Improvements

As part of the project, new electricity, water, telephone, and sewer infrastructure would be constructed within the project site to connect the proposed building to the existing mainlines. The septic system currently serving the project site would be abandoned, and the existing and proposed buildings would be connected to the public sewer system. The proposed project includes the installation of a new sewer lateral to service the project site. The new sewer lateral would connect to the existing sewer lateral stub at the southwest corner of the project site. A 20-foot-wide sewer easement would be dedicated along the Woodside Avenue frontage to accommodate future PDMWD sewer infrastructure.

Construction and Grading

Construction of the proposed project would require partial demolition of the four existing self-storage buildings on the project site. The existing apartment unit on the west end of the northernmost storage building would be demolished, repaved, and painted to accommodate two parking stalls and landscaping. This demolition area would amount to 774 sq ft. The demolition area of the other three existing storage buildings, moving north to south, would be 896 sq ft, 893 sq ft, and 902 sq ft, respectively, for a total demolition area of 3,465 sq ft. The demolished portions of these three buildings would be repaved and painted to accommodate three parking stalls each and landscaping.

Development of the proposed project would require excavation and grading of the site, delivery of materials, and construction of the building area. Construction of the proposed project is anticipated to commence in the beginning of 2025 and continue for approximately 14 months. It is anticipated that an average of 8 to 10 construction workers would be on site each day.

Based on the preliminary grading plans, the proposed project would require approximately 7,850 cubic yards (cy) of cut and 375 cy of fill, resulting in a total of 7,475 cy to be exported off site. Site preparation, grading, and building activities would involve the use of standard earthmoving equipment such as large excavators, cranes, and other related equipment.

Construction of the proposed project would require a maximum excavation depth of 13 feet.

Discretionary Actions, Permits, and Other Approvals

In accordance with Sections 15050 and 15367 of the *State CEQA Guidelines*, the City is the designated Lead Agency for the proposed project and has principal authority and jurisdiction for CEQA actions and project approval. Responsible agencies are those agencies that have jurisdiction or authority over one or more aspects associated with the development of a proposed project and/or mitigation. Trustee agencies are State agencies that have jurisdiction by law over natural resources affected by a proposed project.

The discretionary actions to be considered by the City as a part of the proposed project include:

- Conditional Use Permit Approval
- Application for Environmental Categorical Exemption approval

Other actions to be considered by responsible agencies as part of the proposed project include:

- Determination of Consistency (Airport Land Use Commission)
- National Pollutant Discharge Elimination System Permit (State Water Resources Control Board)

PROJECT CONDITIONS

The following Standard Project Conditions would be required of the proposed project. These measures would be incorporated as Conditions of Approval for the entitlement of the Conditional Use Permit and are typical for projects within the City of Santee. Such measures taken to comply with building codes or to address common and typical concerns for new projects do not preclude CEQA exemptions (*Berkeley Hillside Preservation City of Berkeley (2015)* 241 Cal.App.4th 943, 960-961). The following measures are standard conditions for similar development projects entitled in the past by the City of Santee:

STANDARD PROJECT CONDITION NO. 1 – AIR QUALITY:

1. The construction contractor shall use construction equipment powered by California Air Resources Board (CARB) certified Tier 4, or newer, engines and haul trucks that conform to current U.S. Environmental Protection Agency truck standards.

2. During all grading and site preparation activities, the on-site construction superintendent shall ensure implementation of standard best management practices as required by the San Diego Air Pollution Control District (SDAPCD) Rule 55, Fugitive Dust Control.

3. During all grading and site preparation activities, the on-site construction superintendent shall ensure implementation of applicable California Department of Resources Recycling and Recovery (CalRecycle) Sustainable (Green) Building Program Measures, as specified on the CalRecycle website.

4. The project shall utilize high-efficiency equipment and fixtures consistent with the current California Green Building Standards Code and Title 24 of the California Code of Regulations. The project shall include the installation of infrastructure to make the proposed project solar-ready.

5. The project shall include the installation of infrastructure necessary for electric vehicle parking, as well as providing preferential parking for electric vehicles. The project shall provide bike parking on-site.

6. The project shall comply with the Santee Water Efficient Landscape Ordinance. The ordinance promotes water conservation and efficiency by imposing various requirements related to evapotranspiration rates, irrigation efficiency, and plant factors.

7. The project shall comply with Chapters 9.02 and 9.04 of the Santee Municipal Code that pertain to solid waste management and demolition and construction debris recycling.

8. In conformance with SDAPCD Rule 67.0.1, Architectural Coatings, the project shall use low volatile organic compound (VOC) paints.

9. The project shall not include wood burning stoves or fireplaces.

STANDARD PROJECT CONDITION NO. 2 – BIOLOGICAL RESOURCES:

1. In conformance with CEQA, the Migratory Bird Treaty Act and the California Fish and Game Code, brushing, clearing and/or grading shall not be allowed during bird breeding season (between January 15 and September 15). If vegetation disturbance is to be cleared during the bird breeding season a qualified biologist shall perform a nesting bird survey within the proposed construction area and appropriately sized buffer no more than 72 hours priorto vegetation disturbance. If the planned vegetation disturbance does not occur within 72 hours of the nesting bird survey, then the area shall be resurveyed. If nesting birds are found, the qualified biologist shall establish an adequate buffer zone (on a species-by-species, case-by-case basis) in which construction activities would be prohibited until the nest is no longer active. The size of the buffer zone shall be determined by the biologist based on the amount, intensity, and duration of construction and can be altered based on site conditions. If appropriate, as

determined by the biologist, additional monitoring of the nesting birds may be conducted during construction to ensure that nesting activities are not disrupted.

2. All vehicles, equipment, tools, and supplies shall stay within the limits of the impact area.

3. Best management practices (BMP) features (e.g., silt fencing, straw wattles, and gravel bags) shall be installed where necessary to prevent and/or limit off-site sedimentation runoff in accordance with an approved BMP plan.

4. Any planting stock to be brought onto the project site for landscaping shall be first inspected to ensure that it is free of pest species that could invade natural areas, including, but not limited to, Argentine ants (*Linepithema humile*), non-native fire ants (e.g., *Solenopsis invicta*), and other insect pests.

STANDARD PROJECT CONDITION NO. 3 – GEOLOGY/SOILS:

The Construction Contractor shall ensure that construction of the project complies with the recommendations identified in the project-specific geotechnical investigation. Recommendations related to general construction, seismic considerations, earthwork, foundations, building floor slabs, lateral earth pressures, corrosivity, drainage, storm infiltrations, exterior concrete and masonry flatwork and paved areas shall be adhered to during all project design and construction.

STANDARD PROJECT CONDITION NO. 4 – NOISE:

1. All construction plans shall include the following notes:

    a. Operations shall conform to the City's Municipal Code Section 5.04.090.

    b. All equipment shall be equipped with properly maintained mufflers.

    c. The construction contractor shall place noise-generating construction equipment and locate construction staging areas at the greatest possible distance from sensitive uses whenever feasible during all project construction.

    d. The construction contractor shall use on-site electrical sources to power equipment rather than diesel generators where feasible.

2. All residential units located within 500 feet of the construction site shall be sent a notice regarding the construction scheduleA sign legible at a distance of 50 feet shall also be posted at the construction site. All notices and the signs shall indicate the dates and durations of construction activities, as well as provide a telephone number for the “noise disturbance coordinator.”

3. A “noise disturbance coordinator” shall be established. The disturbance coordinator shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler) and shall be required to implement reasonable measures to reduce noise levels.

4. The following shall be incorporated into the project construction plan: "Control of Construction Hours. Construction activities occurring as part of the project shall be subject to the limitations and requirements of Section 5.04.090 of the City Municipal Code which states that construction activities may occur between 7:00 a.m. and 7:00 p.m. Mondays through Saturdays. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays."

STANDARD PROJECT CONDITION NO. 5 – TRIBAL/ARCHAEOLOGICAL MONITOR:

1. Prior to the start of ground-disturbing activities, the Applicant shall retain a qualified archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards for Archaeology.[2] The Applicant shall also retain a Native American monitor of Kumeyaay decent.

2. Prior to start of ground-disturbing activities, the qualified archaeologist shall conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the types of archaeological resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. The Applicant shall ensure that construction personnel attend the training and sign an attendance acknowledgement form. The Applicant shall retain documentation demonstrating attendance.

3. The qualified archaeologist, or an archaeological monitor (working under the direct supervision of the qualified archaeologist), shall observe all initial ground-disturbing activities, including but not limited to brush clearance, vegetation removal, grubbing, grading, and excavation. The qualified archaeologist, in coordination with the Applicant and the City, may reduce or discontinue monitoring if it is determined by the qualified archaeologist that the possibility of encountering buried archaeological deposits is low based on observations of soil stratigraphy or other factors. Archaeological monitoring shall be conducted by an archaeologist familiar with the types of archaeological resources that could be encountered within the project site. The archaeological monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of a discovery until the qualified archaeologist has evaluated the discovery and determined appropriate treatment (as prescribed below). The archaeological monitor shall keep daily logs detailing the types of activities and soils observed, and any discoveries. After monitoring has been completed, the qualified archaeologist shall prepare a monitoring report that details the results of monitoring. The report shall be submitted to the City and any Native American groups who request a copy. A copy of the final report shall be filed at the South Coastal Information Center (SCIC).

4. The Native American monitor shall be present for any pre-construction meeting and for all ground-disturbing activities associated with the project. Should any cultural or tribal cultural resources be discovered, no further grading shall occur in the area of the discovery until the City Planner, or designee, with concurrence from the Native American monitor, is satisfied that treatment of the resource has occurred. In the event that a unique archaeological resource or

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[2] U.S. Department of the Interior. n.d. Secretary of the Interior's Professional Qualifications Standards for archaeology. Website: https://www.doi.gov/pam/asset-management/historic-preservation/PQS (accessed May 23, 2024).

tribal cultural resource is discovered, and in accordance with Public Resources Code Section 21083.2(b)(1), (2), and (4), the resource shall be moved and buried in an open space area identified by the Native American monitor, which will not be subject to further grading activity, erosion, flooding, or any other ground disturbance that has the potential to expose the resource. No identification of the resource shall be made; however, the Applicant shall plot the new location of the resource on a map showing latitudinal and longitudinal coordinates and provide that map to the Native American Heritage Commission (NAHC) for inclusion in the Sacred Lands File. Disposition of the resources shall be at the discretion of the City of Santee, but in accordance with the foregoing.

5. In the event of the unanticipated discovery of archaeological materials, all work shall immediately cease in the area (within 100 feet) of the discovery until it can be evaluated by the qualified archaeologist in consultation with the Native American monitor. Construction shall not resume until the qualified archaeologist has conferred with the Applicant and the City on the significance of the resource.

6. If it is determined that the discovered archaeological resource constitutes a historical resource or a unique archaeological resource under CEQA, avoidance and preservation in place is the preferred manner of mitigation. Preservation in place may be accomplished by, but is not limited to, avoidance, incorporating the resource into open space, capping, or deeding the site into a permanent conservation easement. In the event that preservation in place is demonstrated to be infeasible and data recovery through excavation is the only feasible mitigation available, a Cultural Resources Treatment Plan shall be prepared and implemented by the qualified archaeologist in consultation with the Applicant and the City that provides for the adequate recovery of the scientifically consequential information contained in the archaeological resource. The qualified archaeologist and the City shall consult with appropriate Native American representatives in determining treatment for prehistoric or Native American resources to ensure cultural values ascribed to the resources, beyond those which are scientifically important, are considered.

7. If human remains are encountered, all work shall halt in the vicinity (within 100 feet) of the discovery and the San Diego County Coroner will be contacted in accordance with Public Resources Code (PRC) Section 5097.98 and Health and Safety Code Section 7050.5. The Applicant and the City will also be notified. If the County Coroner determines that the remains are Native American, the NAHC will be notified in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98 (as amended by Assembly Bill 2641). The NAHC will designate a Most Likely Descendant (MLD) for the remains per PRC Section 5097.98. The MLD shall complete the inspection of the site within 48 hours of being granted access and shall provide recommendations for the treatment of the remains. Until the landowner has conferred with the MLD, the Applicant shall ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity and is adequately protected according to generally accepted cultural or archaeological standards or practices.

CALIFORNIA ENVIRONMENTAL QUALITY ACT, SECTION 15332, CLASS 32 INFILL DEVELOPMENT EXEMPTION

Under *State CEQA Guidelines* Section 15332, a project, characterized as infill development, qualifies for a Class 32 CE under CEQA if the project (1) is consistent with the applicable general plan designation and policies and zoning designation and regulations; (2) occurs within city limits on a project site of no more than 5 acres substantially surrounded by urban uses; (3) is located on a site that does not have value as habitat for endangered, rare, or threatened species; (4) would not result in any significant impacts relating to traffic, noise, air quality, or water quality; and (5) is adequately served by all required utilities and public services.

(1) The proposed project is consistent with the applicable General Plan policies and designation and Zoning designation and regulations.

The project would not require amendments to an adopted planning document for implementation. The City's General Plan land use designation for the project site is GC, which permits uses consistent with the site's GC zoning. As previously detailed, Table A shows the proposed project's consistency with the applicable City's General Plan policies. As shown in that table, the proposed project would be consistent with the applicable General Plan policies and would not require a General Plan Amendment.

The zoning of the project site is GC. Per City Municipal Code Section 13.12.030, with approval of a CUP, operation of self-storage facilities is permitted within the GC zone. Therefore, the project is consistent with the applicable zoning designation with a CUP. The project does not propose deviations from zoning regulations. The project's proposed parking is consistent with the City's parking standards. Therefore, the proposed project is consistent with the General Plan land use designation and zoning for the project site.

(2) The proposed project would occur within city limits on a project site of no more than 5 acres and would be substantially surrounded by urban uses.

The project site is 2.81 acres and is located at 10835 Woodside Avenue in Santee. In its existing condition, the project site contains self-storage facilities, an undeveloped area used for RV and boat storage, paved driveways, and perimeter landscaping. The project site is surrounded by existing urban uses, including commercial and residential uses. The project site is immediately bounded to the northwest by Woodside Avenue, to the north by a commercial pet supply business, to the east by SR-67, and to the south by residential uses. Therefore, the proposed project is within City limits on a project site of no more than 5 acres and is substantially surrounded by urban uses.

(3) The proposed project would be located on a site that does not have value as habitat for endangered, rare, or threatened species.

As shown on Figure 2, the project site includes 30,146 sq ft of existing self-storage uses (four one-story buildings), an undeveloped area that provides uncovered storage for recreational vehicles and boats, perimeter landscaping and fencing, and an Extra Space Storage facility tower sign. The project site contains ornamental landscaping and non-native trees along the project boundaries. The site is surrounded on all sides by urban development.

The project site is currently developed, aside from the undeveloped area that provides uncovered storage for RVs and boats. However, the undeveloped area on the project site is highly disturbed. No special-status species are expected to occur on the project site in the existing condition because of the lack of suitable habitat. Similarly, the proposed project would not substantially reduce locally common wildlife populations because no suitable habitat exists on site. The proposed project would not significantly affect sensitive biological resources given the amount of previous development that has taken place on the project site and in the vicinity. Proposed project construction and operation would have no impacts either directly or through habitat modification to 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 Wildlife or the United States Fish and Wildlife Service. Therefore, the project site does not have value as habitat for endangered, rare, or threatened species.

The proposed project, like all projects, would be subject to the provisions of the Migratory Bird Treaty Act (MBTA), which prohibits disturbing or destroying active nests, and California Fish and Game Code Section 3503, which protects nests and eggs (Standard Project Condition No. 2). A few trees may require removal to meet current building standards where the driveways would be reconstructed and where the proposed building would be constructed. Should on-site tree removal be necessary, it would be accomplished in a manner that would avoid impacts to active nests during the breeding season. With compliance with existing regulations, potential impacts to nesting birds would be avoided.

(4) The proposed project would not result in any significant impacts relating to traffic, noise, air quality, or water quality.

Traffic. A Transportation Analysis Memorandum[3] (Attachment B) was prepared to identify the trip generation impacts associated with the proposed project. The trip generation of the proposed project was calculated using trip rates from the ITE Guidelines for Traffic Impact Studies in the San Diego Region[4] (ITE Guidelines) and the City of Santee[5] VMT Analysis Guidelines (April 2022) (City Guidelines). Table B, below, summarizes the proposed project trip generation.

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3 LSA Associates, Inc. (LSA). 2024a. *Transportation Analysis Memorandum, Santee Self Storage Project.*

4 Institute of Transportation Engineers (ITE) et al. 2019. Guidelines for Transportation Impact Studies in the San Diego Region. Website: http://sntbberry.cityofsanteeca.gov/sites/FanitaRanch/Public/Remainder%20of%20the%20Record/(2)%20Reference%20Documents%20from%20EIR%20&%20Technical%20Reports/Tab%20532%20-%202019-05%20-%2021%20ITE%20San%20Diego%20SB%20743%20Guidelines%20Update%20(May%202019).pdf (accessed January 9, 2024).

5 City of Santee. 2022. City of Santee VMT Analysis Guidelines. Website: https://files.ceqanet.opr.ca.gov/278328-1/attachment/pwj-6WVT4Tzh8xVei7pgES7y6XS6F1ifk7L5GX9xpwc0OG4CXVFRtA6mo0Z6DReX2CzpBgLRh4-wX1Wy0 (accessed January 9, 2024).

As shown in Table B, the net trip generation of the proposed project is 121 daily trips, including 9 trips (5 inbound and 4 outbound) in the a.m. peak hour and 15 trips (7 inbound and 8 outbound) in the p.m. peak hour. The existing plus project condition would result in 165 daily trips, including 12 trips (7 inbound and 5 outbound) in the a.m. peak hour and 20 trips (9 inbound and 11 outbound) in the p.m. peak hour.

Table B: Project Trip Generation

Land Use	Size	Unit	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Rates[1]									
Mini-Warehouse (Self-Storage)		tsf	1.45	0.06	0.04	0.10	0.08	0.09	0.17
Existing Trip Generation									
Mini-Warehouse (Self-Storage)	30.146	tsf	44	2	1	3	2	3	5
Project Trip Generation[2]									
Mini-Warehouse (Self-Storage)	83.635	tsf	121	5	4	9	7	8	15
Total Trip Generation (Existing + Project)									
Mini-Warehouse (Self-Storage)	113.781	tsf	165	7	5	12	9	11	20

Source: LSA (2024a). *Transportation Analysis Memorandum*, *Santee Self Storage Project*.

[1] Trip rates referenced from the Institute of Transportation Engineers *Trip Generation* Manual, 11th Edition (2021). Land Use 151 (Mini-Warehouse)

[2] The proposed project includes the demolition of 3.465 tsf and the construction of 87.100 tsf for a net increase of 83.635 tsf.

tsf = thousand square feet

Per the ITE Guidelines, a level of service (LOS) based local transportation analysis (LTA) would be required for a proposed land use project if it is expected to generate more than 1,000 daily trips or 110 peak-hour trips. Projects that do not exceed that criterion are considered exempt from these requirements. Because the proposed project would generate fewer than 1,000 daily trips and 110 peak-hour trips, it is exempt from the preparation of an LTA.

The City Guidelines provide VMT screening criteria for projects that are presumed to have less than significant impacts to the local transportation system and would therefore not be required to conduct a VMT analysis. The City defines a “small project” as a project that generates fewer than 500 trips daily. The proposed project is expected to generate a small number of daily trips (net 121 average daily trips [ADT] and total with existing uses of 165 ADT). Because the proposed project would generate fewer than 500 daily vehicle trips, the proposed project meets the criteria for a less than significant VMT impact under the small project screening in the City’s Guidelines. Therefore, the proposed project would result in a less than significant impact, and a project-level VMT quantified analysis is not required under the City’s Guidelines.

Pedestrian and bicycle facilities run along Woodside Avenue. However, the proposed project would not result in a significant increase in daily vehicle trips and would not alter existing bicycle lanes during construction or operation. Therefore, the proposed project would be consistent with the current use of the project site and would not conflict with a plan, ordinance, or policy addressing the circulation system.

Access to the proposed project would be provided via two driveways along Woodside Avenue. Vehicular traffic to and from the project site would use the existing network of regional and local roadways that currently serve the area surrounding the project site. Based on the temporary nature of the construction activities and trips, and the low trip generation for daily operations, project vehicles would not create operational deficiencies or related hazards to the public roadways when accessing the project site.

The proposed project meets the criteria for an LOS-based LTA exemption and the criteria to be screened out from a detailed VMT analysis due to its classification as a small project. Therefore, the proposed project would have a less than significant impact on transportation.

Noise. The *Noise and Vibration Technical Memorandum* (Noise and Vibration Impact Analysis)[6] prepared for the proposed project is provided in Attachment C.

Existing Noise Measurements. The primary existing noise sources in the project area are transportation facilities, including SR-67 and Woodside Avenue.

In order to assess the existing noise conditions in the area, long-term noise measurements were conducted at the project site. Two long-term, 24-hour measurements were taken from November 6, 2023, to November 7, 2023. The locations of the noise measurements are shown on Figure 3, and the results are summarized in Table C.

Aircraft Noise. The project site is approximately 0.9 mile north of Gillespie Field Airport. Based on the Gillespie Field Airport Land Use Compatibility Plan,[7] the project site is located outside of the 65 dBA CNEL noise contour for Gillespie Field. Because the project site is not located within the 65 dBA CNEL noise contour, no further analysis associated with aircraft noise impacts is necessary. Additionally, there are no helipads or private airstrips within 2 miles of the project site.

Table C: Existing Noise Level Measurements

Location Number	Location Description	Daytime Noise Levels[1] (dBA L_{eq})	Nighttime Noise Levels[2] (dBA L_{eq})	Average Daily Noise Levels (dBA L_{dn})	Primary Noise Sources
LT-1	At 10835 Woodside Avenue, located southeast of the project site boundary line on a light pole, approximately 150 ft from the SR-67 centerline.	58.5–67.2	53.5–67.0	68.3	Traffic on SR-67
LT-2	At 10835 Woodside Avenue, located along southwest project site boundary line on a light pole, approximately 220 ft from the Woodside Avenue centerline.	52.0–59.8	46.2–59.6	60.7	Traffic on Woodside Avenue

Source: Compiled by LSA (December 2023).
1 Daytime Noise Levels = noise levels during the hours of 7:00 a.m. to 10:00 p.m.
2 Nighttime Noise Levels = noise levels during the hours of 10:00 p.m. to 7:00 a.m.
dBA = A-weighted decibel(s)
ft = foot/feet
L_{dn} = Day-night average noise level
L_{eq} = equivalent continuous sound level
SR-67 = State Route 67

6 LSA Associates, Inc. (LSA). 2024b. *Noise and Vibration Technical Memorandum*, *Santee Self Storage Project.*

7 San Diego County Regional Airport Authority (SDCRAA). 2010. *Gillespie Field Airport Land Use Compatibility Plan*.

Construction Noise. Project construction would result in short-term noise and vibration. Maximum construction noise would be short-term, generally intermittent depending on the construction phase, and variable depending on receiver distance from the active construction zone. The duration of various types of construction noise and vibration would vary from 1 day to several weeks, depending on the phase of construction. The following describes the levels and types of impacts that may occur during construction.

The first type of short-term construction noise would result from transport of construction equipment and materials to the project site and construction worker commutes. These transportation activities would incrementally raise noise levels on access roads leading to the site. It is expected that larger trucks used in equipment delivery would generate higher noise impacts than trucks associated with worker commutes. The single-event noise from equipment trucks passing at a distance of 50 feet from a sensitive noise receptor would reach a maximum level of 84 A-weighted decibel maximum instantaneous sound level (dBA L_{max}). However, the pieces of heavy equipment for grading and construction activities would be moved on site one time and would remain on site for the duration of all construction phases. This one-time trip, when heavy construction equipment is moved on- and off-site, would not add to the daily traffic noise in the project vicinity. The total number of daily vehicle trips would be minimal compared to existing traffic volumes on the affected streets, and the long-term noise level changes associated with these trips would not be perceptible. Therefore, equipment transport noise and construction-related worker commute impacts would be short-term and would result in a less than significant off-site noise impact.

The second type of short-term noise impact is related to noise generated during demolition, site preparation, grading, building construction, paving, and architectural coating on the project site. Construction is undertaken in discrete steps, each of which has its own mix of equipment and its own noise characteristics. These various sequential phases would change the character of the noise generated on the project site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table D lists the maximum noise levels for typical construction equipment based on a distance of 50 feet between the construction equipment and a noise receptor. Typical operating cycles for these types of construction equipment may involve 1–2 minutes of full power operation followed by 3–4 minutes at lower power settings.

Table E shows the construction phases, the expected duration of each phase, the equipment expected to be used during each phase, the composite noise levels of the equipment at 50 feet, the distance of the nearest residential building from the average location of construction activities (a distance of 130 feet from the center of the project site), and noise levels expected during each phase of construction. These noise level projections do not take into account intervening topography or barriers, which would lower noise levels.

Table D: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%)	Maximum Noise Level (L_{max}) at 50 ft
Compressor	100	81
Concrete Mixer	40	85
Concrete Pump	40	85
Crane	16	83
Dozer	40	80
Forklift	20	75
Front [End] Loader	40	79
Generator	100	78
Grader	8	85
Scraper	40	88
Welder	40	74

Sources: *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances* (United States Environmental Protection Agency 1971); Roadway Construction Noise Model (Federal Highway Administration 2006).
ft = foot/feet
L_{max} = maximum instantaneous sound level

Table E: Construction Noise Levels by Phase

Phase	Duration (days)	Equipment	Composite Noise Level at 50 ft (dBA L_{eq})	Distance to Closest Sensitive Receptor (ft)[1]	Noise Level at Receptor (dBA L_{eq})
Demolition	15	1 concrete/industrial saw, 1 dozer, and 1 tractor	86	130	77
Site Preparation	10	1 grader, 1 scraper, and 1 tractor	85	130	77
Grading	10	1 grader, 1 dozer, and 2 tractors	86	130	78
Building Construction	255	1 crane, 2 forklift, 1 generator set, 1 tractor, and 3 welders	84	130	75
Paving	10	1 cement and mortar mixer, 1 paver,1 paving equipment, 2 rollers, and 1 tractor	86	130	77
Architectural Coating	124	1 air compressor	74	130	66

Source: Compiled by LSA (2023b). *Noise and Vibration Technical Memorandum*, *Santee Self Storage Project*.
1 Distances are from the average location of construction activity for each phase, assumed to be the center of the project site. Multi-family residential buildings to the south are 130 feet from the center of construction activity. Other buildings within the same development are further away and would be exposed to less noise.
dBA L_{eq} = average A-weighted hourly noise level
ft = foot/feet

It is expected that average noise levels during construction at the nearest sensitive receptor, the multifamily residential uses to the south, would approach 78 dBA L_{eq} during the grading phase, which would take place for a duration of approximately 10 days. Average noise levels during other construction phases would range from 66 dBA L_{eq} to 78 dBA L_{eq}. Noise levels at the nearest off-site commercial uses to the southwest would reach an average noise level of 71 dBA L_{eq} during the daytime hours. The elevated noise levels would only occur when all construction equipment is operating simultaneously and would cease once project construction is completed.

Although the project construction-related short-term noise levels have the potential to be up to 22 dBA higher than the average daytime ambient noise at the closest receptors to the south, construction noise would occur for 10 days or less during the grading phase and would then cease to occur once the project construction is completed and the exposure would be temporary. Furthermore, the construction-related noise levels would be below the 80 dBA L_{eq} and 85 dBA L_{eq} criteria established by the Federal Transit Administration (FTA) for residential and commercial uses, respectively. The project would be constructed in compliance with the requirements of the City's Noise Ordinance, which states that construction activities would not take place before 7:00 a.m. or after 7:00 p.m. on Mondays through Saturdays and would not take place any time on Sundays and holidays. Additionally, as required by the Santee Municipal Code Section 5.04.090, a notice would be provided to all owners and occupants within 300 feet of the project site if the construction equipment has a manufacturer's noise rating of 85 dB or greater and operates at a specific location for 10 consecutive workdays.

In addition to the best business practices for noise reduction discussed above, the proposed project would implement Standard Project Condition No. 4. This Standard Project Condition includes additional best business practices including maintaining equipment mufflers and placing staging areas away from sensitive receptors. With incorporation of best business practices for noise reduction, the overall noise levels generated will be minimized, and construction noise impacts would be less than significant.

Construction Vibration. Vibration standards included in the FTA's *Transit Noise and Vibration Impact Assessment Manual* (2018) are used in this analysis for ground-borne vibration impacts on human annoyance.

Table F provides reference PPV values and vibration levels (in terms of vibration velocity in decibels) from typical construction vibration sources at 25 feet. While there is currently limited information regarding vibration source levels specific to the equipment that would be used for the project, to provide a comparison of vibration levels expected for a project of this size, a large bulldozer would generate 0.089 PPV (in/sec) of ground-borne vibration when measured at 25 feet, based on the FTA's 2008 *Transit Noise and Vibration Impact Assessment Manual*. It would take a minimum of 0.2 PPV (in/sec) to cause any potential building damage to non-engineered timber and masonry buildings.

Table F: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L_V at 25 ft	
	PPV (in/sec)	L_V (VdB)[1]
Hoe Ram	0.089	87
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] RMS VdB re 1 µin/sec.
µin/sec = micro-inches per second
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity in decibels

The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the project construction boundary (assuming the construction equipment would only be used at or near the project setback line).

The closest structures to the external construction activities are the residential uses to the south, which are approximately 20 feet from the project's southern construction boundary. Using the reference data from Table F, it is expected that vibration levels from dump trucks and other large equipment at 20 feet from the project boundary would generate ground-borne vibration levels of 0.124 PPV (in/sec) at the closest structures to the project site. This vibration level would not exceed the 0.2 in/sec PPV threshold considered safe for non-engineered timber and masonry buildings. Vibration levels at all other buildings would be lower. Therefore, construction would not result in any vibration damage, and impacts would be less than significant.

Construction Vibration Human Annoyance Potential. The existing residences approximately 130 feet to the south from the center of the project site are the nearest sensitive receptor and would experience vibration levels approaching 66 VdB based on the following equation:

$$L_v dB\ (D) = L_v dB\ (25\ feet) - 30\ Log\ (D/25)$$

This level of ground-borne vibration is below the threshold of distinctly perceptible, which is approximately 72 VdB for frequent events at uses where people sleep and would not exceed the FTA vibration threshold for human annoyance at the nearest sensitive use, and project construction would not result in vibration levels that would typically result in human annoyance. Therefore, this level of ground-borne vibration would be less than significant for human annoyance. No mitigation is required.

Operational Noise. According to the Transportation Analysis Memorandum prepared for the proposed project, the proposed project is estimated to generate a net ADT of 121 based on the proposed increase in square footage of the self-storage facilities. Based on the ADT provided by the City of Santee Mobility Element[8], the ADT along Woodside Avenue in the project vicinity is approximately 23,300, based on projections for the year 2013. While the existing volume is likely higher today resulting in higher existing roadway noise levels, the project-related traffic would increase traffic noise along Woodside Avenue by less than 3 dBA. This noise level increase would not be perceptible to the human ear in an outdoor environment. Therefore, traffic noise impacts from project-related traffic on off-site sensitive receptors would be less than significant.

Long-term noise would be associated with new stationary sources proposed on the project site; the project's heating, ventilation, and air conditioning (HVAC) system and trucks would be the new sources of stationary noise. Based on previous measurements that LSA has conducted, the HVAC equipment would generate noise levels of 66.6 dBA L_{eq} at 5 feet per HVAC unit. Two banks

8 City of Santee. 2017. General Plan Mobility Element. Website: http://sntbberry.cityofsanteeca.gov/sites/FanitaRanch/Public/Remainder%20of%20the%20Record/(10)%20Planning%20Documents%20Adopted%20by%20City%20of%20Santee/Tab%2006%20-%202017-10-25%20General%20Plan%20Mobility%20Element%202017.pdf (accessed December 17, 2023).

of HVAC units are assumed to be installed (four units per bank) and would generate noise levels of 72.6 dBA L_{eq} at 5 feet.

Noise levels generated by delivery trucks would be similar to noise readings from truck loading and unloading activities, which generate a noise level of 75 dBA L_{eq} at 20 feet based on measurements taken by LSA. Delivery trucks would arrive on site and maneuver their trailers so that trailers would be parked within the loading areas. During this process, noise levels are associated with the truck engine noise, air brakes, and back-up alarms while the truck is backing into the loading area. These noise levels would occur for a shorter period of time (less than 5 minutes). At a distance of 75 feet and incorporating the shorter duration of operations, a reference noise level of 64.2 dBA L_{eq} at 75 feet is utilized in this analysis.

Table G presents the noise levels from on-site operations at the nearest noise-sensitive locations. The combined noise level of projected operations at 53.2 dBA L_{eq} and average existing ambient nighttime noise levels at 52.9 dBA (based on nighttime noise levels for LT-2 shown in Table C above) would be 56.1 dBA L_{eq}, resulting in an increase of 3.2 dBA for nighttime conditions. Therefore, noise from HVAC units would not exceed a 5 dBA L_{eq} increase over ambient noise levels at the property line of the closest properties to the project site. In addition, the perimeter parapet walls shown in the project plans would further reduce the noise levels from the HVAC unit. Therefore, noise associated with the on-site operations would be less than significant.

Table G: Summary of Operational Noise Levels

Off-Site Land Use	Direction	Source	Distance from Source (ft)[1]	Reference Noise Level (dBA L_{eq})	Distance Attenuation (dBA)	Average Noise Level (dBA L_{eq})
Residence	South	HVAC	135	72.6[2]	28.6	44.0
		Trucks	75	64.2	11.5	52.7
					Combined:	53.2

Source: Compiled by LSA (2023).

1 Distances are measured from the property line of the receiving land use to the closest source of noise.

2 Reference noise levels are associated with an assumption of 4 HVAC units.

dBA = A-weighted decibels
HVAC = heating, ventilation, and air conditioning
ft = foot/feet
L_{eq} = equivalent continuous sound level

Operational Vibration. Because the rubber tires and suspension systems of buses and other on-road vehicles provide vibration isolation and reduce noise, it is unusual for on-road vehicles to cause ground-borne noise or vibration. When on-road vehicles cause such effects as the rattling of windows, the source is almost always airborne noise. Most problems with on-road vehicle-related noise and vibration can be directly related to a pothole, bump, expansion joint, or other discontinuity in the road surface. Smoothing the bump or filling the pothole will usually solve the problem. Based on a reference vibration level of 0.076 in/sec PPV, structures more than 20 feet from the roadways that contain project trips would experience vibration levels below the most conservative standard of 0.12 in/sec PPV; therefore, vibration levels generated from project-related traffic on the adjacent roadways would be less than significant.

Air Quality. The *Air Quality Technical Memorandum* (Air Quality Analysis)[9] prepared for the proposed project is provided in Attachment D.

The project site is in the San Diego Air Basin. Air quality in the Basin is under the jurisdiction of the San Diego Air Pollution Control District (SDAPCD). LSA used the California Emissions Estimator Model (CalEEMod) to calculate emissions from construction and operation of the proposed project.

Construction Emissions. During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by demolition, grading, building construction, paving, and other activities. Emissions from construction equipment are also anticipated and would include carbon monoxide (CO), nitrogen oxides (NO_X), volatile organic compounds (VOCs), directly emitted particulate matter less than 2.5 microns in size ($PM_{2.5}$) or particulate matter less than 10 microns in size (PM_{10}), and toxic air contaminants such as diesel exhaust particulate matter.

Project construction activities would include demolition, grading, site preparation, building construction, architectural coating, and paving activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and amount of operating equipment. Larger dust particles would settle near the source, whereas fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The SDAPCD has established Rule 55, Fugitive Dust Control, which would require the Applicant to implement measures that would reduce the amount of particulate matter generated during the construction period.[10]

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, sulfur oxides (SO_X), NO_X, VOCs, and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idled in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site. Table H summarizes the construction emissions estimated for the project using CalEEMod.

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[9] LSA Associates, Inc. 2024c. *Air Quality Technical Memorandum*, *Santee Self Storage Project*.

[10] San Diego Air Pollution Control District (SDAPCD). 2009. *Rule 55: Fugitive Dust Control*. Website: www.sdapcd.org/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Prohibitions/APCD_R55.pdf (accessed November 2023).

As shown in Table H, construction emissions associated with the project would not exceed the daily San Diego Air Pollution Control District (SDAPCD) thresholds for VOCs, NO_X, CO, sulfur oxides (SO_X), $PM_{2.5}$, or PM_{10} emissions. As described under Project Conditions, the proposed project would implement Standard Project Condition No. 1 during construction. This Standard Project Condition would include implementation of the following: use of, at minimum, Tier 4 construction equipment, best management practices to reduce fugitive dust emissions, California Department of Resources Recycling and Recovery (CalRecycle) Sustainable (Green) Building Program Measures, high efficiency equipment and fixtures consistent with California Green Building Standards Code and Title 24 of the California Code of Regulations, electric vehicle parking infrastructure, bike parking, City Municipal Code requirements related to landscaping and waste, and low volatile organic compound (VOC) paints. Additionally, the proposed project would not include wood burning stoves or fireplaces. .

Therefore, construction of the proposed project would not result in emissions that would result in a cumulatively considerable net increase of any criteria pollutant for which the project is in nonattainment under an applicable federal or State ambient air quality standard (AAQS).

Table H: Short-Term Regional Construction Emissions

Construction Phase	Maximum Daily Regional Pollutant Emissions (lbs/day)							
	VOCs	**NO_X**	**CO**	**SO_X**	**Fugitive PM_{10}**	**Exhaust PM_{10}**	**Fugitive $PM_{2.5}$**	**Exhaust $PM_{2.5}$**
Demolition	0.6	19.8	15.0	<0.1	0.3	0.7	0.1	0.6
Site Preparation	0.6	20.3	15.4	<0.1	0.7	0.6	0.1	0.5
Grading	0.7	28.5	18.2	0.1	4.7	0.7	1.9	0.6
Building Construction	0.6	16.9	13.4	<0.1	0.1	0.7	<0.1	0.6
Architectural Coating	3.4	1.1	1.3	<0.1	0.1	0.1	<0.1	0.1
Paving	0.6	10.4	8.7	<0.1	0.1	0.4	<0.1	0.4
Peak Daily Emissions	**4.0**	**28.5**	**18.2**	**0.1**	**5.4**		**2.5**	
SDAPCD Threshold	**75.0**	**250.0**	**550.0**	**250.0**	**100.0**		**55.0**	
Significant?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: Compiled by LSA (August 2024).
Note: Maximum emissions of VOCs and CO occurred during the overlapping building construction and architectural coating phases.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SDAPCD = San Diego Air Pollution Control District
SO_X = sulfur oxides
VOCs = volatile organic compounds

Operational Impacts. Long-term air pollutant emissions associated with operation of the proposed project include emissions from area, energy, and mobile sources. Area-source emissions consist of direct sources of air emissions at the project site, including architectural coatings, consumer products, and use of landscape maintenance equipment. Energy-source emissions result from activities in buildings that use natural gas. As discussed above, the proposed project would be all electric and would not include any natural gas; therefore, the proposed project would not result in energy-source emissions. Mobile-source emissions are from vehicle trips associated with operation of the project.

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement, and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other particulate matter emissions processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Long-term operational emissions associated with the proposed project were calculated using CalEEMod. Table I provides the estimated existing emissions and the proposed project's estimated operational emissions.

The results shown in Table I indicate the proposed project would not exceed the significance criteria for daily VOCs, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$ emissions. Therefore, operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State AAQS.

Table I: Project Operational Emissions

Emission Type	Pollutant Emissions					
	VOCs	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Lbs/day						
Mobile Sources	0.5	0.4	3.4	<0.1	0.7	0.2
Area Sources	2.6	<0.1	3.8	<0.1	<0.1	<0.1
Energy Sources	0.0	0.0	0.0	0.0	0.0	0.0
Total Project Emissions	**3.1**	**0.4**	**7.2**	**<0.1**	**0.7**	**0.2**
SDAPCD Threshold	55.0	55.0	550.0	150.0	150.0	55.0
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Tons/year						
Mobile Sources	0.1	0.1	0.6	<0.1	0.1	<0.1
Area Sources	0.4	<0.1	0.3	<0.1	<0.1	<0.1
Energy Sources	0.0	0.0	0.0	0.0	0.0	0.0
Total Project Emissions	**0.5**	**0.1**	**0.9**	**<0.1**	**0.1**	**<0.1**
SDAPCD Threshold	13.7	40.0	100.0	40.0	15.0	10.0
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (August 2024).
Note: Some values may not appear to add correctly due to rounding.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SDAPCD = San Diego Air Pollution Control District
SO_X = sulfur oxides
VOCs = volatile organic compounds

As discussed in the Air Quality Analysis, the SDAPCD is responsible for developing and implementing the clean air plans for attainment and maintenance of the AAQS in the SDAPCD, specifically the State Implementation Plan (SIP) and the San Diego Regional Air Quality Strategy (RAQS). If a project proposes development that is greater than that anticipated by the General Plan and the San Diego Association of Governments (SANDAG) growth projections, the project might be in conflict with the RAQS and SIP and might have a potentially significant impact on air quality.

The project site is currently operating as a self-storage facility and would continue to operate as a self-storage facility but construct an additional 87,100 sq ft self-storage building (approximately 622 storage units). The proposed project would not require any additional employees on site compared to existing operations. As such, the proposed project would not result in development in excess of that anticipated in the City's General Plan or increases in population/housing growth beyond those contemplated by SANDAG. As such, the proposed project would not increase the population, vehicle trips, or vehicle miles traveled beyond what is anticipated in the RAQS and SIP. Because the proposed project activities and associated vehicle trips are anticipated in local air quality plans, the proposed project would be consistent at a regional level with the underlying growth forecasts in the RAQS and SIP.

Long-Term Microscale (CO Hot-Spot) Analysis. Vehicular trips associated with the proposed project could contribute to congestion at intersections and along roadway segments in the vicinity of the proposed project site. Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, a direct function of vehicle idling time and, thus, of traffic flow conditions.

CO transport is extremely limited; under normal meteorological conditions, it disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, affecting local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients).

Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable LOS or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the El Cajon Monitoring Station at 533 First Street (the closest station to the project site monitoring CO) showed a highest recorded 1-hour concentration of 1.5 parts per million (ppm) (the State standard is 20 ppm) and a highest 8-hour concentration of 1.4 ppm (the State standard is 9 ppm) from 2020 to 2022. The highest CO concentrations would normally occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Reduced speeds and vehicular congestion at intersections result in increased CO emissions.

The proposed project is expected to generate 121 average daily trips, with 9 trips occurring in the a.m. peak hour and 15 trips occurring in the p.m. peak hour. Therefore, given the extremely low level of CO concentrations in the project area and the lack of traffic impacts at any intersections, project-related vehicles are not expected to result in CO concentrations exceeding the State or federal CO standards. No CO hot spots would occur, and the project would not result in any project-related impacts on CO concentrations.

Sensitive Receptors. Sensitive receptors are defined as people who have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential dwelling units. The project site is surrounded by commercial and residential uses. The closest sensitive receptors to the project site include the single-family homes approximately 20 feet south of the project site boundary.

Construction activities associated with the proposed project would generate airborne particulates and fugitive dust, as well as a small quantity of pollutants associated with the use of construction equipment (e.g., diesel-fueled vehicles and equipment) on a short-term basis. However, construction contractors would be required to implement measures to reduce or eliminate emissions by following SDAPCD Rule 55, Fugitive Dust Control, which would require the Applicant to implement measures that would reduce the amount of particulate matter generated during the construction period. The proposed project would also implement Project Condition No. 1, which includes measures to reduce air quality impacts during construction. In addition, project construction emissions would be well below SDAPCD significance thresholds. Once the project is constructed, the project would not be a source of substantial pollutant emissions. Therefore, sensitive receptors are not expected to be exposed to substantial pollutant concentrations during project construction and operation.

Based on the analysis presented above, construction and operation of the proposed project would not result in the generation of criteria air pollutants that would exceed SDAPCD thresholds of significance, and therefore, the project's impacts are less than significant.

Odors. SDAPCD Rules 50, 51, and 55 require the project Applicant to include implementation of standard control measures for fugitive dust and diesel equipment emissions. Additionally, operators of off-road vehicles (i.e., self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on road) are required to limit vehicle idling to 5 minutes or less; register and label vehicles in accordance with the California Air Resources Board's Diesel Off-Road Online Reporting System; restrict the inclusion of older vehicles into fleets; and retire, replace, or repower older engines or install verified diesel emission control strategies (e.g., exhaust retrofits). Additionally, SDAPCD Rule 55 regarding nuisances states "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."During project construction, some odors may be present due to diesel exhaust. However, these odors would be temporary and limited to the construction period. In addition, the proposed project would be required to comply with SDAPCD nuisance and odor rules. The proposed project would not include any activities or operations that would generate objectionable odors, and once operational, the project would not be a source of odors. Therefore, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Water Quality.

Construction Impacts. Construction activities would involve disturbance, grading, and excavation of soil, which could result in temporary erosion and movement of sediments into the storm drain system, particularly during precipitation events. However, the proposed project would comply with all applicable National Pollutant Discharge Elimination System (NPDES) permit requirements to reduce impacts to water quality. Projects that disturb greater than 1 acre of soil are subject to the requirements of the *State Water Resources Control Board (SWRCB) Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities* (Order WQ 2022-0057-DWQ NPDES No. CAS000002) (Construction General Permit). Because the proposed project would disturb more than 1 acre, the Applicant would be required to obtain coverage under the Construction General Permit, which requires the preparation and implementation of a Stormwater Pollution Prevention Plan and best management practices (BMPs) including, but not limited to, Erosion Control and Sediment Control BMPs designed to minimize erosion and retain sediment on site and Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters. Additionally, the proposed project would comply with City Municipal Code Title 9 Section 9.06, Stormwater Management and Discharge Control,[11] which requires all new development to comply with local ordinances, California Stormwater Quality Association standards, Caltrans standards, the City's current BMP Design Manual, and the preparation of a Stormwater Quality Management Plan (SWQMP). Further, the proposed project would implement Project Condition No. 2, which requires all construction vehicles and equipment to stay within the limits of the project area and BMP features to prevent off-site sedimentation. Compliance with the standard requirements of the Construction General Permit, the City's Municipal Code, and Standard Project Condition No. 2 would ensure that construction impacts related to surface water quality would be less than significant.

According to the *Preliminary Geotechnical Investigation* (Attachment E) prepared for the proposed project, groundwater was not encountered during exploratory borings at depths at 18.5 feet below ground surface (bgs). It is anticipated that groundwater is approximately 20 feet or greater bgs. Excavation during construction would be to a maximum depth of 13 feet bgs. Due to the depth of groundwater and the proposed depth of excavation, groundwater is not anticipated to be encountered during construction; therefore, groundwater dewatering would not be required during construction and construction-related impacts to groundwater would be less than significant. Similarly, professional removal of the existing septic system would not impact groundwater on the site.

Operational Impacts. The proposed project would redevelop a 2.81-acre site with existing self-storage facilities and would result in the increase of 1.10 acre of impervious surface area. Proposed project operation has the potential to result in pollutants of concern and, therefore, would be subject to the requirements of the California Regional Water Quality Control Board, San Diego Region, *Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds within the San Diego Region*, Order No. R9-2013-0001, NPDES No. CAS0109266, as amended by Order No. R9-2015-0001 and R9-205-0100. In compliance with the San Diego Region MS4 Permit, a SWQMP (Attachment F) was prepared for the proposed project. The SWQMP provides details regarding the proposed project's stormwater management program, including proposed BMPs to reduce or eliminate pollutants of concerns in stormwater runoff. Stormwater runoff from the site currently flows via concrete swales towards Woodside Avenue until it connects to the City's storm drain system. The proposed project would not substantially alter existing drainage patterns of the project site, and, under post-project conditions, stormwater runoff would continue to drain to the City's storm drain system. Furthermore, the proposed project would implement an underground detention system and two biofiltration systems (modular wetlands), located just north of the northern driveway and just south of the southern driveway, to capture and treat stormwater during project operation in compliance with the applicable NPDES permit requirements.

[11] City of Santee. n.d. Municipal Code Chapter 9.06. Website: http://library.qcode.us/lib/santee_ca/pub/municipal_code/item/title_9-chapter_9_06-article_1-9_06_120 (accessed December 5, 2023).

Because the proposed project would implement the requirements of the applicable NPDES permit and associated BMPs, impacts to surface water quality would be less than significant.

In its existing condition, the project site is approximately 60 percent (1.7 acre) impervious surface. According to the SWQMP, development of the proposed project would increase and/or replace 65 percent (1.10 acre) of impervious surface area on the project site. Impervious surfaces preclude groundwater infiltration and thereby interfere with groundwater recharge. The project site is within the boundaries of the San Diego River Valley Groundwater Basin.[12] However, the majority of on-site soils are characterized by a low infiltration rate. Therefore, the project would not decrease groundwater supplies or interfere with groundwater recharge.

According to Federal Emergency Management Agency Flood Insurance Rate Map No. 06073C1654G (May 2012), the project site is not within a 100-year floodplain. Specifically, the project site is within Zone X, an area of minimal flood hazard (outside the 500-year floodplain). According to the California Department of Conservation,[13] the project site is not within a tsunami hazard zone. Therefore, no project-related impacts associated with flood flows or release of pollutants from inundation would occur.

The proposed project would comply with the Construction General Permit, the City's Municipal Code, and San Diego Region MS4 Permit, which include implementation of BMPs to address the volume and velocity of stormwater and treat pollutants of concern. Therefore, the proposed project would not require groundwater dewatering, interfere with groundwater recharge, or conflict with sustainable groundwater management plans. The Water Quality Control Plan for the San Diego Region (The Basin Plan) designates beneficial uses for water bodies in the San Diego Region and establishes water quality objectives and implementation plans to protect those beneficial uses.[14] Implementation actions outlined in The Basin Plan include compliance with NPDES permit requirements. Because the proposed project would comply with NPDES permit requirements including compliance with the Construction General Permit, the City's Municipal Code, the San Diego Region MS4 Permit, and associated BMPs, the proposed project would be consistent with The Basin Plan.

Overall, the proposed project would not result in impacts associated with hydrology and water quality.

(5) The project site is adequately served by all required utilities and services.

The project site is served by all utilities and public services in the existing condition. Table J lists the specific utilities and public service providers serving the project site.

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12 California Department of Water Resources (DWR). 2016. Groundwater Basin Boundary Assessment Tool. Website: https://gis.water.ca.gov/app/bbat/ (accessed December 19, 2023).

13 California Department of Conservation (DOC). 2021. San Diego County Tsunami Hazard Areas. Website: https://www.conservation.ca.gov/cgs/tsunami/maps/san-diego (accessed December 18, 2023).

14 Regional Water Quality Control Board (RWQCB), San Diego Region. 1994. Water Quality Control Plan for the San Diego Basin (9). Website: https://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/ (accessed April 19, 2024).

Table J: Utility Agencies Serving the Project Site

Water	Padre Dam Municipal Water District
Wastewater	Padre Dam Municipal Water District
Fire	Santee Fire Department
Police	San Diego County Sheriff's Department
Schools	Santee Unified School District and Grossmont Union High School District
Landfill	USA Waste of California, Inc
Electricity	San Diego Gas and Electric
Natural Gas	San Diego Gas and Electric

Source: Compiled by LSA (2023).

The project site is currently developed for qualified urban uses as defined by Public Resources Code (PRC) Section 21072. The proposed project would continue the existing self-storage use on the project site. As such, the project site is served by all utilities and service providers in the existing condition.

PDMWD is the water provider for the project site. The PDMWD maintains and operates the sewer collection system, including storm drains, catch basins, and sewer lines. Water usage for operation of the proposed additions to the self-storage uses on site would be limited to irrigation for the existing landscaping, fire suppression systems, and the proposed apartment for the on-site caretaker. Because the new self-storage building would require minimal water use, project operation would require water usage on the project site similar to existing conditions. Additionally, the proposed caretaker residence would not substantially increase water usage as the existing site already contains a caretaker residence that would be demolished and replaced. Wastewater would only be generated from the office use, proposed caretaker residence, and fire suppression systems in the unlikely event of a fire. The existing septic system would be abandoned, and the existing and proposed buildings would be connected to the public sewer system. The proposed project would use the existing on-site water systems to serve the new building. The on-site systems would be constructed in compliance with the City's building and plumbing codes in its Municipal Code. The proposed on-site distribution systems would connect to the existing water facilities within the project site and wastewater facilities off site. The existing public sewer system that the proposed project would connect to is located within Woodside Avenue, directly adjacent to the project site. Additionally, PDMWD has indicated that their facilities are available to serve the proposed project and their facility plans have been designed to accommodate development along Woodside Avenue, which includes the proposed project. Therefore, extension of the water infrastructure from the existing system within the project site and connection of the wastewater system to the public sewer system would be a routine part of the construction process and is included in the project description and analysis as discussed herein. The water facility improvements would be limited to the project site, and connection points would remain as they exist now. As described above, PDMWD has indicated that their facilities are available to serve the proposed project, but adequate water and sewer facility commitment shall be determined prior to final project approval/map recordation and shall be available concurrent with project need.

Pursuant to California Education Code Section 17620(a)(1), the governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the district for the purpose of funding the construction or reconstruction of school facilities. Applicants/developers for all projects would be required to pay such fees to reduce any impacts associated with new commercial development on school services.

CEQA EXCEPTIONS TO QUALIFICATION FOR A CATEGORICAL EXEMPTION

State CEQA Guidelines Section 15300.2 provides exceptions to categorical exemptions that apply to specific types of projects. The exceptions to the CEs pursuant to Section 15300.2 of the *State CEQA Guidelines* are:

(a) Location. Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located—a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply in all instances, except where the project may impact an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

The proposed project does not rely on the specific classes of exemptions (3, 4, 5, 6, and 11) called out at the beginning of exception 15300.2(a). This exception does not apply to the proposed project.

The project site is at 10835 Woodside Avenue. The project site is characterized by pavement, an undeveloped area, storage facilities, and landscaping associated with the existing on-site use. The project site is surrounded on all sides by urban development and is zoned and designated GC. Therefore, the site is not particularly sensitive in terms of environmental resources, and there are no mapped environmentally sensitive habitat areas within or near the project site. In addition, the proposed project, like all projects, would be subject to the provisions of the MBTA, which prohibits disturbing or destroying active nests, and California Fish and Game Code Section 3503, which protects nests and eggs.

(b) Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place over time is significant.

The proposed project is an infill development project in an urban area. According to the Governor's Office of Planning and Research, the term "infill development" refers to building within unused and underutilized lands within existing development patterns, typically, but not exclusively, in urban areas.[15] The project site and surrounding areas are currently developed for qualified urban uses as defined by PRC Section 21072. "Cumulative impacts" as defined in CEQA refer to the "change in the environment which results from the incremental impact of the project when added to other closely related present and reasonably foreseeable probable future projects." A categorical exemption may be inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant. Because the site and surrounding area is built-out, there are no reasonably foreseeable cumulative impacts relating to successive projects of the same type in the same place.

15 Governor's Office of Planning and Research. n.d. Infill Development. Website: https://opr.ca.gov/planning/land-use/infill-development/ (accessed November 6, 2023).

Moreover, the proposed project does not have incremental impacts contributory to any foreseeable cumulative impact, as addressed below:

Land Use, Aesthetics. The proposed project would be consistent with existing land use and visual patterns typical of an urban built environment. No amendments to an adopted planning document would be required for implementation of the proposed project, nor would the project divide an established community. Therefore, the proposed project would not contribute to a significant cumulative land use impact.

Agriculture, Farmland, Biological Resources, Mineral Resources. Neither the project site nor any other site in Santee is currently used for agricultural or farmland production. Neither the project site nor the local area is particularly sensitive in terms of biological resources, and there are no mapped environmentally sensitive habitat areas within or near the project site. Additionally, the proposed project would not result in the loss of known mineral resources or a locally important mineral resource recovery site. Therefore, the proposed project would not result in impacts related to agricultural, biological, or mineral resources and would not contribute to a significant cumulative impact.

Air Quality. The proposed project would contribute criteria pollutants to the area during project construction. As discussed above, because the project site and surrounding area is built-out, there are no reasonably foreseeable cumulative impacts relating to successive projects of the same type in the same place, individual projects in the area may be under construction simultaneously with the proposed project. Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction could result in substantial short-term increases in air pollutants. However, each project would be required to comply with SCAQMD's standard construction measures. The proposed project's short-term construction CO, NO_2, PM_{10}, and $PM_{2.5}$ emissions would not exceed the localized significance thresholds. Therefore, construction of the proposed project would have a less than significant impact with regard to regional and localized emissions and would not result in cumulatively considerable impacts.

Energy. Energy usage on the project site during construction would be temporary in nature. In addition, energy usage associated with operation of the proposed project would be relatively small in comparison to the State's available energy sources, and energy impacts would be negligible at the regional level. Because California's energy conservation planning actions are conducted at a regional level, and because the proposed project's total impact to regional energy supplies would be minor, the proposed project would not conflict with California's energy conservation plans as described by California Energy Commission.[16,17] In addition, the proposed project would comply with Title 24 and the California Green Building Standards Code standards, consistent with the City's General Plan. Thus, the proposed project would not result in the inefficient, wasteful, and unnecessary consumption of energy. Impacts would not be cumulatively considerable.

[16] California Energy Commission (CEC). 2022. *Final 2021 Integrated Energy Policy Report*.

[17] California Energy Commission (CEC). 2023. *2022 Integrated Energy Policy Report Update Highlights*.

Geology, Paleontological Resources. The project site was previously disturbed and is currently developed with existing storage structures. The proposed project consists of the addition of self-storage facilities and parking. As such, ground-disturbing activities associated with project construction activities are not likely to directly or indirectly destroy a unique paleontological resource or site or a unique geological feature due to the previously disturbed nature of the project site and the limited depth of excavation (13 feet bgs). Thus, the proposed project would not have incremental impacts contributory to any reasonably foreseeable significant cumulative impact.

The project site, like all of Southern California, would be subject to seismic ground shaking in the event of an earthquake. The proposed project would be required to comply with the California Building Code in effect at the time of construction and would not exacerbate an existing geologic or seismic hazard. Thus, the proposed project would not have incremental impacts contributory to any reasonably foreseeable significant cumulative impact.

Hazards. The proposed project site is 0.8 mile northeast of Gillespie Field and within Review Area 1 of the Gillespie Field Airport Influence Area.[18] An Airport Influence Area is defined as "the area in which current or future airport-related noise, overflight, safety, or airspace protection factors may significantly affect land use or necessitate restrictions on those uses".[19] However, the proposed project would not change the existing self-storage land use on site and operation of the facility would remain the same. A Determination of No Hazard to Air Navigation letter was requested from the Federal Aviation Administration (FAA) on December 7, 2023. On January 17, 2024, the FAA determined that the proposed project would not exceed obstruction standards and would not be a hazard to air navigation as long as FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or within 5 days after the construction reaches its greatest height. Additionally, the FAA determined that marking and lighting are not necessary for aviation safety. The Determination of No Hazard to Air Navigation Letter is included as Attachment G. The proposed project would not interfere with Gillespie Field or its operation. Thus, the proposed project would not have incremental impacts contributory to any reasonably foreseeable significant cumulative impact.

Due to the nature of this project (i.e., self-storage), it would not contribute to the creation of a hazard to the public or the environment involving the transport, use, or disposal of hazardous materials. As described in the leasing agreements required for customers of the storage facilities, storage of hazardous materials is not permitted. The hazardous materials used during operations would be stored off-site and would be handled and disposed of in accordance with applicable regulations. Thus, the proposed project would not have incremental impacts contributory to any reasonably foreseeable significant cumulative impact.

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18 San Diego County Airport Land Use Commission (ALUC). 2010. Gillespie Field Airport Land Use Compatibility Plan. Website: http://sntbberry.cityofsanteeca.gov/sites/FanitaRanch/ Public/Remainder %20of%20the%20Record/(2)%20Reference%20Documents%20from%20EIR%20&%20 Technical% 20Reports/Tab%20302%20-%202010-12-20%20SDCRAA%202010_Gillespie%20Field%20 Airport% 20Land%20Use%20Compatibility%20Plan.pdf (accessed November 15, 2023).

19 Ibid.

Hydrology, Water Quality. As discussed above, with compliance with the applicable NPDES permit requirements and implementation of BMPs, project impacts to hydrology and water quality would be less than significant. As discussed above, because the project site and surrounding area is built-out, there are no reasonably foreseeable cumulative impacts relating to successive projects of the same type in the same place, individual projects in the area may be under construction simultaneously with the proposed project. However, it is assumed for the purposes of this analysis that the other projects would also comply with applicable NPDES permit requirements in accordance with applicable law and would also result in less than significant impacts related to hydrology and water quality. Thus, the proposed project would not have incremental impacts contributory to any reasonably foreseeable significant cumulative impact.

Noise. Construction of the proposed project would result in short term noise and vibration. However, construction noise and vibration would be temporary, and the proposed project would be constructed in compliance with the requirements of the City's Noise Ordinance and would implement Standard Project Condition No. 4. As discussed above, because the project site and surrounding area is built-out, there are no reasonably foreseeable cumulative impacts relating to successive projects of the same type in the same place. Individual projects in the area may be under construction simultaneously with the proposed project. Depending on construction schedules and actual implementation of projects in the area, construction could result in substantial short-term increases in noise and vibration levels. However, each project would be required to comply with the City's Noise Ordinance and implement Standard Project Condition No. 4. The proposed project's short-term construction noise and vibration levels would not exceed the vibration threshold considered safe for non-engineered timber and masonry buildings or the FTA's noise criteria. Therefore, construction of the proposed project would have a less than significant impact with regard to noise and vibration and would not result in cumulatively considerable impacts.

Population, Housing. Because the project site is currently developed with self-storage facilities and the proposed project would not change the land use on the project site, the proposed project would not induce substantial population growth or displace housing or substantial numbers of people. The proposed project would not provide new housing opportunities or extend roads or other infrastructure to areas not previously served. The proposed project would include the demolition of a small part of the existing self-storage buildings and construction of a larger self-storage facility. However, the proposed building additions would not represent a net increase in businesses or jobs because the project site would continue to operate as a self-storage facility, similar to existing conditions, and no additional employees are required for operations. Therefore, no impacts to population growth would occur because it is unlikely the project would create new jobs in the area. Similarly, because the proposed project would not increase population in Santee, construction and operation of the self-storage facility would not be anticipated to increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of such facilities would occur or would accelerate. Thus, the proposed project would not have incremental impacts contributory to any reasonably foreseeable significant cumulative impact.

Public Services. Upon completion of construction, the project site would operate in a nearly identical manner as its current operation and would not create any new or significant increase in the need for fire or police services. Because the project site is currently developed with self-storage facilities and the proposed project would not change the land use on the project site, the proposed project would not alter cumulative regional demand for fire protection services and would have a less than significant impact. The proposed project also would not decrease the officer-to-resident ratio in Santee or trigger the need for new or physically altered police facilities. Thus, the proposed project would not have incremental impacts contributory to any reasonable foreseeable significant cumulative impact.

Recreation. Because the project site is currently developed with self-storage facilities and the proposed project would not change the land use on the project site, the proposed project would not increase the City's population or demand for parks or other recreation facilities. The proposed project does not propose, and would not create a need for, new or physically altered recreational facilities. Due to the nature of the proposed self-storage uses, the proposed project would not be expected to result in or contribute to a significant cumulative impact related to recreation.

Utilities. As stated above, the project site and the surrounding areas are currently developed for qualified urban uses as defined by PRC Section 21072. As such, the site is served by all utilities in the existing condition. PDMWD is the water provider for the project site and maintains and operates the sewer collection system, including storm drains and sewer systems. The existing septic system would be abandoned, and the existing and proposed buildings would be connected to the public sewer system. Installation of water and sewer facilities sufficient to serve a proposed project is a standard condition for development projects. The proposed project would also pay any required water and sewer connection fees. The project site and other regional projects in Santee would be provided waste disposal from private waste haulers and existing landfills. Due to the nature of the proposed self-storage uses, the proposed project would not be expected to result in or contribute to a significant impact related to waste disposal.

Tribal Cultural Resources. As discussed in Section (f), below, the project site is not listed in the City General Plan as a historic resource and the recorded historic resources are not in the vicinity of the project site. The proposed project would implement Standard Project Condition No. 5, which includes tribal/archaeological measures. This Standard Project Condition requires archaeological and Native American monitoring during ground-disturbing activities and procedures for discovery of archaeological/historic resources or human remains. Due to the nature of the project site and with implementation of Standard Project Condition No. 5, the proposed project would not be expected to result in or contribute to a significant impact related to tribal cultural resources.

Wildfire. The project site is not within any level of fire hazard severity zone.[20] Although the project site sits on a slight slope, it would not pose a significant risk, and the topography of the areas directly adjacent to the project site is relatively flat. According to the City's General Plan Safety Element, the project site is not susceptible to landslides or other slope instabilities.

[20] California Department of Forestry and Fire Protection (CAL FIRE). 2022. Fire Hazard Severity Zone (FHSZ) Viewer. Website: https://egis.fire.ca.gov/FHSZ/ (accessed November 9, 2023).

Therefore, the proposed project is not subject to substantial wildfire risk and would not cumulatively contribute to the exacerbation of fire hazards.

In summary, the proposed project is an infill development project in an urban area. The proposed project would rely on and can be accommodated by the existing road system, public services, and utilities. Impacts of the proposed project would not be cumulatively considerable in connection with the effects of past projects, the effects of other current projects, or the effects of probable future projects.

(c) <u>Significant Effect</u>. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.

The Air Quality Analysis and the Noise and Vibration Impact Analysis for the proposed project conclude that the proposed project would not result in a significant impact related to these topics. In addition, the transportation and parking impacts associated with the proposed project would not cause significant effects. No amendments to an adopted land use or planning document would be required for implementation of the proposed project, and the proposed project would be consistent with the City's Municipal Code requirements. The proposed project would continue the existing self-storage use on-site and would operate in a nearly identical manner as its current operation. Given the urban nature of the project site and the compatibility of the proposed project with the character of the surrounding uses, there is no evidence to indicate that the proposed project would have a significant effect on the environment due to unusual circumstances.

(d) <u>Scenic Highways</u>. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified Environmental Impact Report.

There are no Designated Scenic Highways in the vicinity of the project site.[21] The nearest eligible State-designated scenic highway to the project site is State Route 52, which is 0.6 mile southwest of the project site. Therefore, the proposed project does not have the potential to damage resources within a State-designated scenic highway. The project site is developed with a self-storage facility; none of the existing structures on the project site are more than 50 years old; therefore, they are not eligible for listing as historic resources.

(e) <u>Hazardous Waste Sites</u>. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.

Pursuant to Government Code Section 65962.5, the Hazardous Waste and Substances Sites List (Cortese List) has been compiled by the California Environmental Protection Agency Hazardous Materials Data Management Program. The California Department of Toxic Substances Control

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[21] California Department of Transportation (Caltrans). 2021. California State Scenic Highway System Map. Website: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa (accessed October 27, 2023).

(DTSC) compiles information from subsets of the following databases to make up the Cortese List:

1. The DTSC list of contaminated or potentially contaminated hazardous waste sites listed in the California Sites database (formerly known as ASPIS);

2. The State Water Resources Control Board (SWRCB) listing of leaking underground storage tanks (LUSTs); and

3. The California Integrated Waste Management Board list of sanitary landfills that have evidence of groundwater contamination or known migration of hazardous materials (formerly WB-LF; now Assembly Bill 3750).

The proposed project is not on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.[22] Three sites were identified within 1 mile of the project site including Santee Army Camp, 0.2 mile southwest of the project site, Dave's Auto Service, 0.4 mile southwest of the project site, and Ketema Process Equipment Co., 0.6 mile northeast of the project site. Due to the distances of the sites from the proposed project, limited excavation depths, and regulated nature, none were found to represent an environmental concern to the project. Review of the SWRCB GeoTracker database confirms that the project site is not on a LUST cleanup site.[23] There are 12 LUST sites within 0.5 mile of the project site. Of the 12 LUST database sites, only 4 sites are at elevations higher than the subject site. All four of these sites have their LUST case status listed as "Completed-Case Closed" and therefore would not represent an environmental concern to the project site.

(f) <u>Historical Resources</u>. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.

The buildings on the project site were constructed in approximately 1975. The City's General Plan lists five recorded historic sites and one historic structure that is listed on the National Register of Historic Places within Santee. The project site is not listed in the City General Plan as a historic resource. Additionally, the recorded historic resources are not in the vicinity of the project site. As discussed under Project Conditions, the proposed project would implement Standard Project Condition No. 5, which includes tribal/archaeological measures. This Standard Project Condition requires archaeological and Native American monitoring during ground-disturbing activities and procedures for discovery of archaeological/historic resources or human remains. Further, as the existing buildings on the project site are not 50 years old, they are not old enough to be considered historical resources and are not eligible for listing at the federal, State, or local levels. Because of the age of the existing buildings, they do not need to be evaluated as historical resources pursuant to CEQA. As such, project construction and operation would have no impacts to "historical resources" pursuant to *State CEQA Guidelines* Section 15064.5.

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22 California Department of Toxic Substances Control (DTSC). n.d. EnviroStor Database. Website: https://www.envirostor.dtsc.ca.gov/public/map/?global_id=19970011 (accessed November 15, 2023).

23 State Water Resources Control Board (SWRCB). n.d. GeoTracker database. Website: https://geotracker.waterboards.ca.gov/map/ (accessed November 15, 2023).

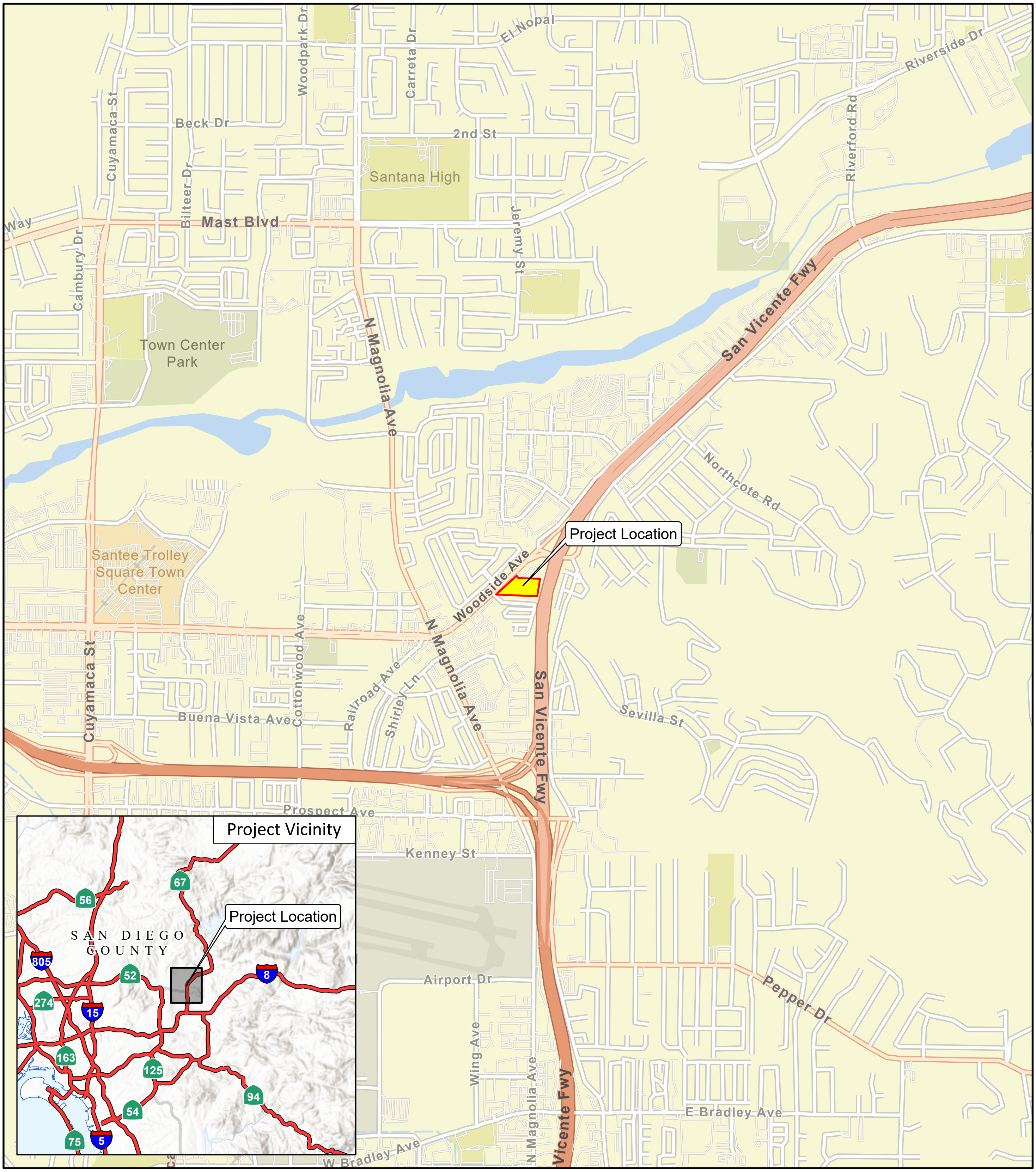
CONCLUSION

In summary, the proposed project will not result in any specific or general exceptions to the use of a CE as detailed under *State CEQA Guidelines* Section 15332. The proposed project would not cause any significant impacts to traffic, noise, air quality, or water quality. The project site does not have value as habitat for endangered, rare, or threatened species. The proposed project would not result in damage to a scenic resource within a highway officially designated as a State Scenic Highway. The project site is not on any list compiled pursuant to Section 65962.5 of the Government Code. Furthermore, no unusual circumstances or potential cumulative impacts would occur that may reasonably create an environmental impact. Therefore, the proposed project qualifies for a Class 32 CE and does not meet any of the exceptions for exemptions as specified by the *State CEQA Guidelines* and identified above.

Attachments:
- A: Figures 1 and 2
- B: Transportation Analysis Memorandum
- C. Noise and Vibration Impact Analysis Memorandum
- D: Air Quality Technical Memorandum
- E: Preliminary Geotechnical Investigation
- F: Storm Water Quality Management Plan
- G: Determination of No Hazard to Air Navigation Letter
- H: References

ATTACHMENT A

FIGURES 1 AND 2



LSA

Project Location

FIGURE 1

0 1000 2000
FEET

Santee Self-Storage Project

Regional Location

SOURCE: Esri World Street Map (2023)

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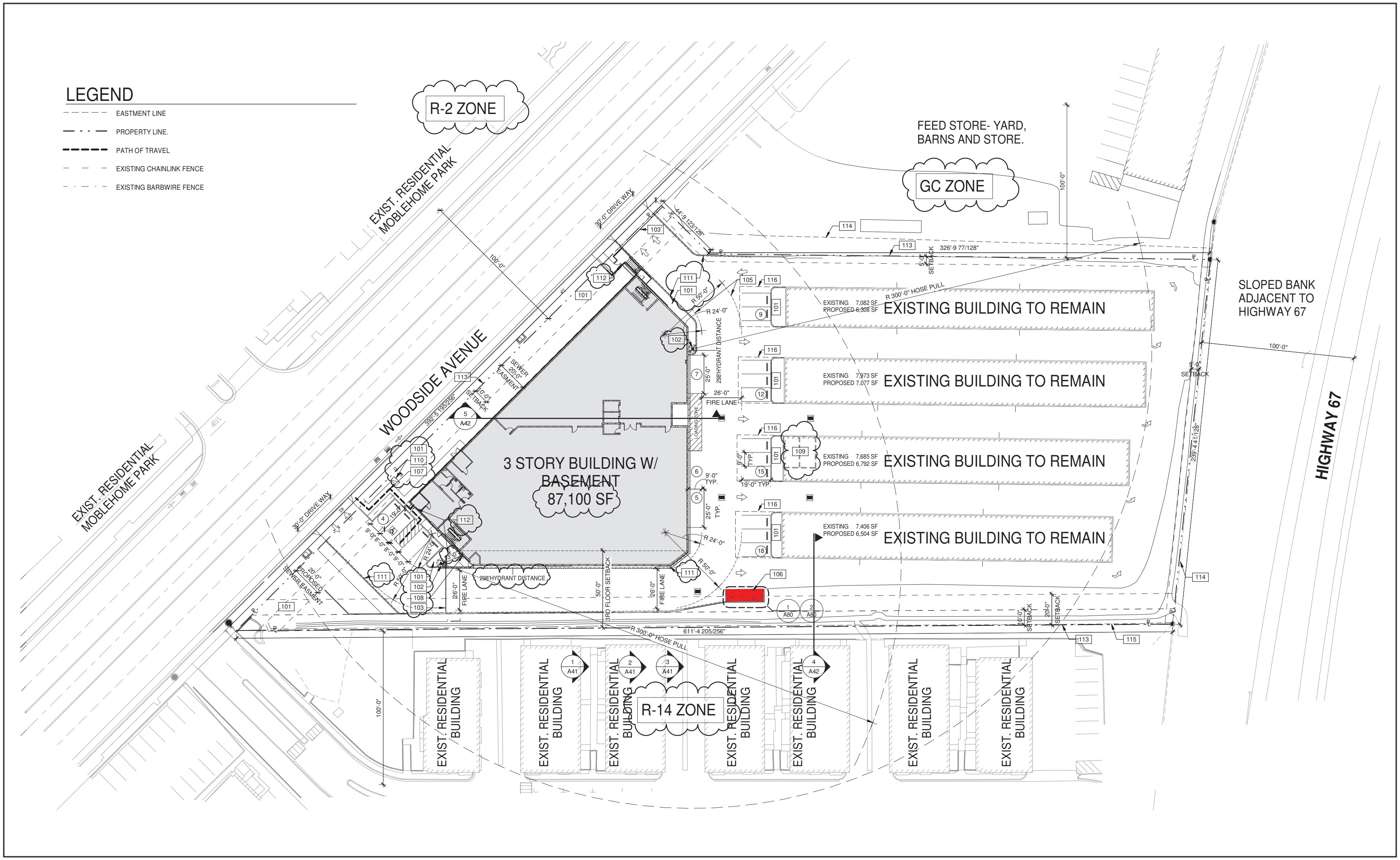

LSA

LEGEND

Trash Enclosure

FIGURE 2

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FEET

SOURCE: Ware Malcomb

Santee Self-Storage Project

Conceptual Site Plan

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ATTACHMENT B

TRANSPORTATION ANALYSIS MEMORANDUM

CARLSBAD
CLOVIS
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: August 1, 2024

TO: Clint Kleppe, Extra Space Development

FROM: Dean Arizabal, LSA

SUBJECT: Transportation Analysis for the Extra Space Storage Facility at 10835 Woodside Avenue in Santee, California (LSA Project No. 20231146)

This transportation analysis determines the potential transportation impacts of a proposed increase of self-storage use at an existing Extra Space Storage facility (project) at 10835 Woodside Avenue in Santee, California.

The purpose of this analysis is to evaluate the need for a Local Transportation Analysis (LTA) and Vehicle Miles Traveled (VMT) analysis based on the Institute of Transportation Engineers (ITE) Guidelines for Traffic Impact Studies in the San Diego Region (May 2019) (ITE Guidelines) and the City of Santee (City) VMT Analysis Guidelines (April 2022) (City Guidelines).

PROJECT DESCRIPTION

The proposed project is an expansion of the existing Extra Space Storage facility at 10835 Woodside Avenue in Santee, California. The site currently has four one-story, self-storage buildings, totaling 30,146 square feet (sf). The proposed project would demolish 3,465 sf of the existing structures (with 26,681 sf of the existing structures to remain) and construct a new 87,100 sf, three-story building with basement on an undeveloped area currently used for recreational vehicle and boat storage (for a net increase of 83,635 sf). At project completion, a total of 113,781 sf of self-storage use would be provided on site. Access to both the existing and new storage areas will continue to be provided via Woodside Avenue. The project site plan is provided as Attachment A.

TRIP GENERATION

LSA calculated the trip generation potential of the proposed project using trip generation rates from the ITE *Trip Generation* Manual, 11th Edition (2021) for Land Use 151 (Mini-Warehouse). Table A summarizes the project trip generation, including the trips for the existing self-storage use, the proposed expansion, and the resulting total.

As shown in Table A, the existing self-storage facility (30,146 sf) generates approximately 44 daily trips, including 3 trips in the a.m. peak hour (2 inbound and 1 outbound) and 5 trips in the p.m. peak hour (2 inbound and 3 outbound). At project completion (113,781 total sf), the site is estimated to generate 165 daily trips, including 12 trips (7 inbound and 5 outbound) in the a.m. peak hour and 20 trips (9 inbound and 11 outbound) in the p.m. peak hour.

Table A: Project Trip Generation

Land Use	Size	Unit	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Rates[1]									
Mini-Warehouse (Self-Storage)		tsf	1.45	0.06	0.04	0.10	0.08	0.09	0.17
Existing Trip Generation									
Mini-Warehouse (Self-Storage)	30.146	tsf	44	2	1	3	2	3	5
Project Trip Generation[2]									
Mini-Warehouse (Self-Storage)	83.635	tsf	121	5	4	9	7	8	15
Total Trip Generation (Existing + Project)									
Mini-Warehouse (Self-Storage)	113.781	tsf	165	7	5	12	9	11	20

[1]Trip rates referenced from the Institute of Transportation Engineers (ITE) *Trip Generation* Manual, 11th Edition (2021). Land Use 151 (Mini-Warehouse)

[2]The proposed project includes the demolition of 3.465 tsf and the construction of 87.100 tsf for a net increase of 83.365 tsf.

tsf = thousand square feet

The net trip generation of the proposed project (83,635 sf expansion) is 121 daily trips, including 9 trips (5 inbound and 4 outbound) in the a.m. peak hour and 15 trips (7 inbound and 8 outbound) in the p.m. peak hour.

INSTITUTE OF TRANSPORTATION ENGINEERS GUIDELINES

Local Transportation Analysis

Per the ITE Guidelines, a level of service (LOS)-based LTA would be required for a proposed land use project if it is expected to generate more than 1,000 daily trips or 110 peak-hour trips. Projects that do not exceed that criteria are considered exempt from these requirements.

As shown on Table A, the proposed project is anticipated to generate 121 net new daily trips, including 9 a.m. and 15 p.m. peak-hour trips. Because the proposed project would generate less than 1,000 daily trips and 110 peak-hour trips, it is exempt from an LTA.

Vehicle Miles Traveled Analysis

The ITE Guidelines provide alternative conditions for VMT analysis exemption that can be used to identify when a proposed land use project is anticipated to result in a less than significant transportation impact. Based on the ITE Guidelines, projects can be presumed to be less than significant if it meets specific screening criteria.

Alternative 1 – Minimum Project Size Based on Previous Traffic Impact Study Guidelines

This alternative suggests that if a project is consistent with the General Plan or Community Plan and generates 1,000 daily trips or fewer, no VMT analysis is needed. The proposed project is consistent with the General Plan and generates fewer than 1,000 daily trips. Therefore, it is screened from a VMT analysis and is presumed to have a less than significant impact.

Alternative 2 – Minimum Project Size Based on Statewide *Guidance*

This alternative suggests that if a project is expected to generate less than 200 daily trips, a VMT analysis is not required, and the project's VMT impacts are presumed to be less than significant. The proposed project is expected to generate fewer than 200 daily trips. Therefore, it is screened from a VMT analysis and is presumed to have a less than significant impact.

CITY OF SANTEE GUIDELINES

Vehicle Miles Traveled Analysis

The City Guidelines provide VMT screening criteria for projects that are presumed to have less than significant impacts to the local transportation system and therefore would not be required to conduct a VMT analysis. Based on the City Guidelines, projects can be presumed to be less than significant if it meets specific screening criteria.

Small Projects

The proposed project qualifies as a “small project,” which the City defines as a project that generates less than 500 daily trips. The proposed project is estimated to generate 121 net new daily trips and meets the criteria for small projects. Therefore, the proposed project is screened from a VMT analysis and is presumed to have a less than significant impact. The City of Santee Traffic Analysis Intake Form is provided in Attachment B.

CONCLUSION

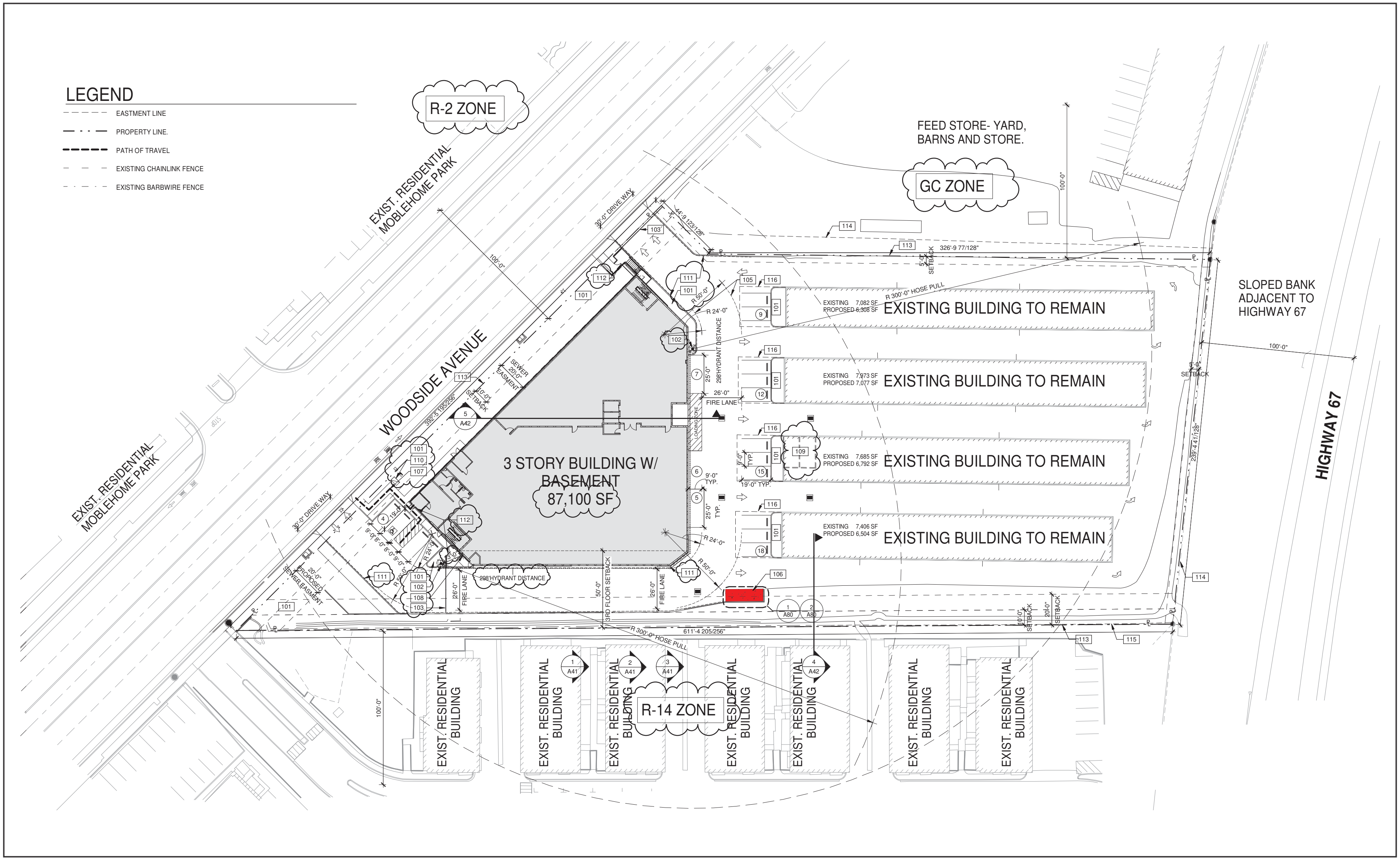
In accordance with the ITE Guidelines and the City Guidelines, LSA evaluated whether the proposed project warrants an LOS-based analysis (LTA) or VMT analysis. The proposed project is expected to generate 121 net new daily trips, including 9 a.m. and 15 p.m. peak-hour trips. As such, the proposed project would not exceed the daily or peak-hour trip thresholds for an LOS-based analysis or a VMT analysis. Therefore, the proposed project would have a less than significant transportation impact.

If you have any questions, please do not hesitate to contact me at (949) 553-0666 or dean.arizabal@lsa.net.

Attachment: A – Site Plan
B – City of Santee Traffic Analysis Intake Form

ATTACHMENT A

SITE PLAN



LSA

LEGEND

Trash Enclosure

FIGURE 2

0 50 100

FEET

SOURCE: Ware Malcomb

Santee Self-Storage Project

Conceptual Site Plan

I:\20231146\G\Site_Plan.ai (8/1/2024)

ATTACHMENT B

CITY OF SANTEE TRAFFIC ANALYSIS INTAKE FORM

TRAFFIC ANALYSIS INTAKE FORM

The traffic analysis intake form shall be submitted with all new development projects to help determine what traffic analysis will be required. These guidelines apply to most development projects. However, the City reserves the right to request both Vehicle Miles Traveled (VMT) and Level of Service (LOS) analysis depending on the specifics of the project. All questions regarding this intake form should be directed to the City of Santee Traffic Engineering division.

1. **Project Information**

Applicant Name	Extra Space Storage
Project Address or Street/Cross Streets	10835 Woodside Avenue
APN	384-120-46
Project No.	

2. **Project Description**

The proposed project would construct an 87,100 square-foot (sq ft) self-storage building consisting of three stories in addition to a basement level, on the undeveloped area of the project site currently used for at grade recreational vehicle and boat storage. Additionally, 7 parking stalls would be developed adjacent to the proposed building. The proposed project would also demolish small portions of all four existing, one-story, self-storage buildings, 3,465 sq ft in total, to accommodate the addition of 11 new surface parking spaces. The proposed project would replace the existing office and caretaker's residence with a new caretaker's residence in the building. The proposed project would also include on-site utility connections including a new on-site sewer lateral to connect to the existing lateral stub. Access to the project site would be provided via two driveways along Woodside Avenue including one new driveway and realignment of the existing driveway.

3. **Certification**

Application Certification: I certify that this intake form has been completed to the best of my ability and accurately reflects the project being proposed. I understand that this intake form is for guidance only and that the City may require additional information or studies.

Date: 08-05-2024

Signature of Applicant: ______________________

Printed Name: Clint Kleppe

4. Trip Generation Information

4A: Total Project Site Trips After Fully Constructed

Fill out the table below to show the total trips for the project site for the completed project. The information in this table should include both existing facilities that will still be in use once the project is complete and new facilities that will be constructed. Use separate rows for each different type of land use.

#	Land Use Description	New or Existing	Size (Number of dwelling units or square feet)	Trip Generation Rate Data Source (Subject to City Staff approval)	Trip Generation Rate	Total Daily Trips
1	General Commercial (GC)		83,635 sf	☐ SANDAG 2002 Trip Generation Rate ■ Other: ITE Trip Generation Manual, 11th Edition (2021)	1.45	121
2				☐ SANDAG 2002 Trip Generation Rate ☐ Other:___		
3				☐ SANDAG 2002 Trip Generation Rate ☐ Other:___		
4				☐ SANDAG 2002 Trip Generation Rate ☐ Other:___		
5				☐ SANDAG 2002 Trip Generation Rate ☐ Other:___		

Projected Total Average Daily Trips (ADT) for the site: 165

4B: Total Existing Trips

Fill out the table below to show the total existing trips for the project site. Use separate rows for each different type of land use.

#	Land Use Description	Size (Number of dwelling units or square feet)	Trip Generation Rate Data Source (Subject to City Staff approval)	Trip Generation Rate	Total Daily Trips
1	General Commercial (GC)	30,146 sf	☐ SANDAG 2002 Trip Generation Rate ☐ Actual counts collected* ■ Other: ITE Trip Generation Manual, 11th Edition (2021)	1.45	44
2			☐ SANDAG 2002 Trip Generation Rate ☐ Actual counts collected* ☐ Other:___		
3			☐ SANDAG 2002 Trip Generation Rate ☐ Actual counts collected* ☐ Other:___		
4			☐ SANDAG 2002 Trip Generation Rate ☐ Actual counts collected* ☐ Other:___		

* Note: If site counts are collected, they should be for a minimum of two full midweek days representing typical days when schools are in session.

Total Existing Average Daily Trips (ADT) for the site: 44

5. Vehicle Miles Traveled (VMT) Analysis

Projects that are projected to generate more than 500 total Average Daily Trips (ADT) may be required to submit a full VMT analysis. The total trips are all trips from the project site (new and/or existing) from the project site once fully constructed from Table 4A. If a VMT analysis is required, applicant shall refer to the City of Santee VMT Analysis guidelines.

Total number of project site trips (Section 4A): 165

Is the proposed project projected to have more than 500 ADT?

- ■ NO VMT analysis is not required for this project
- ☐ YES VMT analysis prepared may be required

6. Traffic Study Level of Service (LOS) Analysis

Projects that are projected to generate more than 1,000 new Average Daily Trips (ADT) may be required to submit a traffic study that evaluates traffic impact and performs a LOS analysis. The new trips are determined by subtracting the existing number of trips (4B) from the total trips for the project site after buildout (4A). If a traffic study with LOS analysis is required, applicant shall refer to the San Diego ITE's Guidelines for Transportation Impact Studies in the San Diego Region, May 2019.

Total new trips (Section 4A minus Section 4B): 121

Is the proposed project projected to have more than 1,000 ADT?

- ■ NO A traffic study is not required for this project
- ☐ YES A traffic study LOS analysis may be required

Is the proposed project projected to have more than 2,500 ADT?

- ■ NO A SANDAG model run is not required.
- ☐ YES A SANDAG model run may be required.

7. Technical Memorandum

If the total ADT is within 10% of any of the limits listed above, at the City's discretion, a technical memorandum prepared by a registered traffic engineer may be required to verify calculations.

Is the proposed project projected Average Daily Trips over 450 VMT or 900 LOS?

- ■ NO A traffic memorandum is not required.
- ☐ YES A traffic memorandum prepared by a registered traffic engineer detailing if a VMT or Traffic Study LOS analysis may be required.

ATTACHMENT C

NOISE AND VIBRATION IMPACT ANALYSIS MEMORANDUM

LSA

CARLSBAD
CLOVIS
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: August 5, 2024

TO: Clint Kleppe, Extra Space Development

FROM: J.T. Stephens, Principal
Moe Abushanab, Noise Engineer

SUBJECT: Noise and Vibration Impact Analysis: Proposed Santee Self-Storage Project in Santee, California

INTRODUCTION AND PROJECT DESCRIPTION

This noise and vibration impact analysis has been prepared to evaluate the potential impacts associated with the proposed Santee Self Storage Project (project) in Santee, California. This report is intended to satisfy the City of Santee's (City) requirement for a project-specific noise and vibration impact analysis and examines the impacts of the proposed project to the existing noise-sensitive uses adjacent to the project site. To properly account for the impacts associated with the proposed project, existing noise levels are assessed based on noise measurement data gathered in the vicinity of the project site (from November 6 to November 7, 2023) and project-related noise and vibration levels generated are based on estimated construction equipment. Traffic volumes from the Transportation Analysis for the Santee Self Storage Project [1] and additional stationary sources on the project site were also evaluated.

Location and Description

The 2.81-acre project site is located on 10835 Woodside Avenue in Santee, San Diego County, California. The project site consists of Assessor's Parcel Number 384-120-46-00. The existing project site includes a self-storage facility consisting of four one-story buildings, a combined square footage of 30,146 and a total of 257 units, and an undeveloped area that provides at grade storage for recreational vehicles (RVs) and boats. The project site is surrounded by a mixture of residential and commercial uses. Regional access to the project site is provided by State Route 67 (SR-67), which is adjacent the project site. Local access to the project site is provided by Woodside Avenue. Figure 1 shows the project location, and Figure 2 provides an overview of the proposed site plan (all figures are provided in Attachment A).

The proposed project would construct an 87,100 sq ft self-storage building on an undeveloped area of the project site that currently provides at-grade storage for RVs and boats. The proposed building would consist of three stories and a basement level, which would contain a total of 622 storage units. An office space and 24-hour kiosk would be constructed within the southwest corner of the

[1] LSA. 2023. *Transportation Analysis for Santee Self Storage Project, Santee, California*. November 15.

basement level, which would be the main point of entrance for customers. This portion of the basement level would sit at ground level due to the existing grade of the project site. Additionally, a 1,158 sq ft apartment would be constructed for an on-site caretaker on the first floor of the proposed building. The proposed project would demolish small portions of three of the existing one-story self-storage buildings, a total of 3,465 sq ft, to accommodate the addition of 11 new surface parking spaces. One new storage unit would be constructed in the northernmost existing building and the remaining portions of the existing buildings would continue to operate in their current configurations. Under post-development conditions, the total building square footage on site (including the existing 26,681 sq ft to remain) would be 113,781 sq ft, with a total of 854 storage units and 18 parking stalls.

Once operational, the proposed project would generate approximately 121 average daily trips. The proposed project would be all-electric and would not operate on natural gas. Hours of operation would remain the same: Monday through Friday from 9:30 a.m. to 6:00 p.m., Saturday from 9:00 a.m. to 5:30 p.m., and closed on Sunday. Storage gate hours would also remain the same: Monday through Sunday, 6:00 a.m. to 10:00 p.m. In addition, the proposed project would not require any additional employees on site compared to existing operations.

Construction activities would include demolition, site preparation, grading, building construction, paving, and architectural coating activities. Construction of the proposed project is anticipated to commence in the beginning of 2025 and continue for approximately 14 months. The proposed project would require the net export of approximately 7,475 cubic yards of soil. In addition, it is anticipated that approximately 8-10 construction workers would be on-site each day during the construction period. Site preparation, grading, and building activities would involve the use of standard earthmoving equipment such as large excavators, cranes, and other related equipment.

METHODOLOGY

The evaluation of noise impacts associated with the proposed project includes the following:

- A determination of the short-term construction noise and vibration levels at off-site noise-sensitive uses and comparison to the City's General Plan and Municipal Code Ordinance requirements;
- A determination of the long-term noise levels at off-site noise-sensitive uses and comparison of those levels to the City's pertinent noise standards; and
- If necessary, a determination of required mitigation measures, such as noise barriers, to reduce long-term noise impacts from all sources.

CHARACTERISTICS OF SOUND

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave, resulting in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound

Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units (e.g., inches or pounds), decibels are measured on a logarithmic scale representing points on a sharply rising curve.

For example, 10 decibels (dB) is 10 times more intense than 1 dB, 20 dB is 100 times more intense than 1 dB, and 30 dB is 1,000 times more intense than 1 dB. Thirty decibels (30 dB) represent 1,000 times as much acoustic energy as 1 dB. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single-point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source (e.g., highway traffic or railroad operations), the sound decreases 3 dB for each doubling of distance in a hard site environment. Similarly, line sources with intervening absorptive vegetation or line sources that are located at a great distance to the receptor would decrease 4.5 dB for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and Community Noise Equivalent Level (CNEL) or the day-night average noise level (L_{dn}) based on

A-weighted decibels (dBA). CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noises occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable. The City uses the CNEL noise scale for long-term noise impact assessment.

Other noise rating scales of importance when assessing the annoyance factor include the maximum instantaneous noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max}, which reflects peak operating conditions and addresses the annoying aspects of intermittent noise. L_{max} is often used together with another noise scale or noise standards in terms of percentile noise levels in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level (i.e., half the time the noise level exceeds this level, and half the time it is less than this level). The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first category is audible impacts, which refers to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dB or greater because this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise levels of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160–165 dBA will result in dizziness or loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less developed areas.

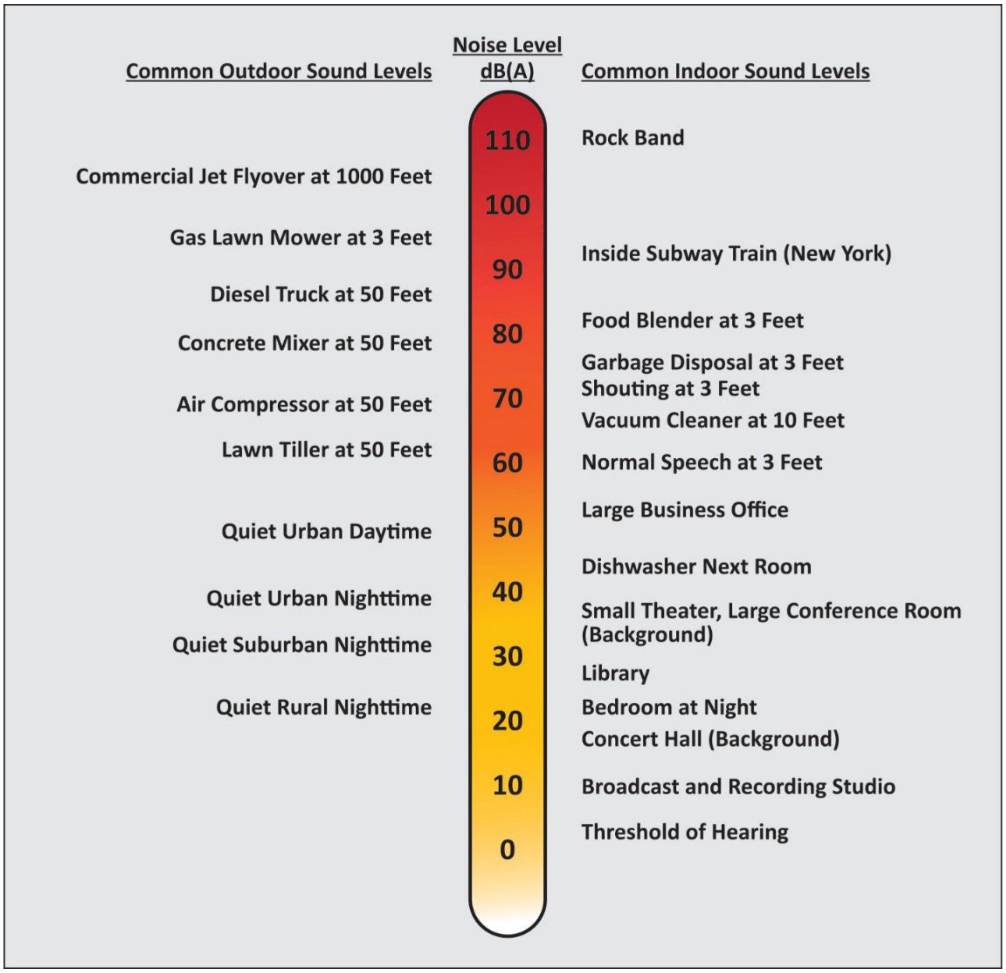
Table A lists full definitions of acoustical terms, and Table B shows common sound levels and their sources.

Table A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of level that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in 1 second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter deemphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this assessment are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dB to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.

Source 1: *Technical Noise Supplement* (Caltrans 2013)
Source 2: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
Caltrans = California Department of Transportation
FTA = Federal Transit Administration

Table B: Common Sound Levels and Noise Sources



Source: LSA (2016).

CHARACTERISTICS OF VIBRATION

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may not be discernible. Typically, there is more adverse reaction to effects associated with the shaking of a building. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by occupants as the motion of building surfaces, the rattling of items on shelves or hanging on walls, or a low-frequency rumbling noise. The rumbling noise is caused by the vibration of walls, floors, and ceilings that radiate sound waves.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with both ground-borne vibration and noise from these sources are usually localized to areas within approximately 100 feet (ft) of the vibration source, although there are examples of ground-borne vibration causing interference out to distances greater than 200 ft (FTA 2018).[2] When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. It is assumed for most projects that the roadway surface will be smooth enough that ground-borne vibration from street traffic will not exceed the impact criteria; however, the construction of the project could result in ground-borne vibration that may be perceptible.

Ground-borne vibration has the potential to damage buildings. Although it is very rare for typical construction activities to cause even cosmetic building damage, it is not uncommon for construction processes such as blasting and pile driving to cause vibration of sufficient amplitudes to damage nearby buildings (FTA 2018).[1] Ground-borne vibration that may resulting in damage is usually measured in terms of peak particle velocity (PPV).

APPLICABLE NOISE STANDARDS

The applicable noise standards governing the project site include the criteria in the California Code of Regulations, the City's Noise Element of the General Plan (Noise Element), the Santee Municipal Code, and the County of San Diego Noise Ordinance.

City of Santee

Noise Element of the General Plan

The goals, objectives, and policies in the City's General Plan Noise Element[2] are designed to provide noise compatible land use relationships by establishing noise standards utilized for design and siting purposes and minimize noise impacts from significant noise generators. The following goals and policies are applicable to the proposed project:

Objective 1.0. Control noise from sources adjacent to residential, institutional, and other noise-sensitive receptors.

- **Policy 1.1**: The City shall support a coordinated program to protect and improve the acoustical environment of the City including development review for new public and private development and code compliance for existing development.

- **Policy 1.2**: The City shall utilize noise studies and noise contour maps when evaluating development proposals during the discretionary review process.

- **Policy 1.4**: The City shall promote alternative sound attenuation measures rather than traditional wall barrier wherever feasible; these may include glass or polycarbonate walls,

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[1] Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual – FTA Report No. .0123*. September.

[2] City of Santee. 2003. General Plan Noise Element. August 27.

berms, landscaping, and the siting of noise-sensitive uses on a parcel away from the roadway or other noise source.

- **Policy 1.5**: The City shall review future projects with particular scrutiny regarding the reduction of unnecessary noise near noise-sensitive areas such as hospitals, schools, parks, etc.

Objective 2.0. Ensure that future developments will be constructed to minimize interior and exterior noise levels.

- **Policy 2.1**: The City shall adhere to planning guidelines and building codes which include noise control for the exterior and interior living space of all new residential developments within noise impacted areas.

- **Policy 2.2**: The City should require new development to mitigate noise impacts to existing uses resulting from new development when: 1) such development adds traffic to existing City streets that necessitates the widening of the street; and 2) the additional traffic generated by new development causes the noise standard or significance thresholds to be exceeded.

- **Policy 2.3**: The City should not require new development to mitigate noise impacts to existing uses when new development only adds traffic already anticipated by the City's General Plan to an existing street, but does not necessitate widening of that street.

Section 8.1 of the City's Noise Element discusses threshold for CEQA impact determination. The California Environmental Quality Act encourages jurisdictions to establish local thresholds for determining whether a particular impact is significant If, as a direct result of the proposed development, noise levels which already exceed the levels considered compatible for that use are increased by 3 or more decibels.

Development standards should be applied to future projects during the discretionary review process and should include the following:

1. Whenever it appears that new development will result in any existing or future noise sensitive uses being subjected to noise levels of 65 dB(A) L_{dn}, or greater, as depicted in Table C, an acoustical study will be required.

   For residential uses, noise sensitive areas shall include rear yard areas on single family residences and ground floor common areas and private patio areas for multiple family residences. For other noise sensitive uses such as libraries, schools or hospitals, noise sensitive areas shall be those areas that serve a significant function for the use that could be adversely affected by noise. Examples include resting or patient recovery areas at hospitals, outdoor service areas for churches (excluding areas used for short-term social gatherings) or outdoor teaching or discussion areas at schools (does not include playgrounds or other active outdoor areas).

2. If the acoustical study shows that the noise levels at any noise sensitive area will exceed 65 dB(A) L_{dn}, the development should not be approved unless the following findings are made:

a. Modifications to the development have been, or will be made, which will reduce the exterior noise level in noise sensitive areas to 65 dBA L_{dn} or less, or

b. If, with current noise abatement technology, it is not feasible to reduce the exterior noise level to 65 dBA L_{dn} or less, then modifications to the development will have been, or will be made which reduce the exterior noise level to the maximum extent feasible and the interior noise level to 45 dBA L_{dn} or less. Particular attention shall be given to noise sensitive spaces such as bedrooms.

Table C presents the Noise Element guidelines for determining acceptable and unacceptable community noise exposure limits for various land use categories.

Table C: Santee General Plan Land Use Compatibility Guidelines (Ldn)

Land Use Category	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential – Low Density, Single-Family, Duplex, Mobile Homes	50 – 65	65 – 70	70 – 75	75 – 85
Residential – Multiple family	50 – 65	65 – 70	70 – 75	75 – 85
Transient Lodging – Motel, Hotels	50 – 65	65 – 70	70 – 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes[1]	50 – 65	65 – 70	70 – 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	50 – 60	60 – 70	NA	70 – 85
Sports Arenas, Outdoor Spectator Sports	50 – 65	65 – 75	NA	75 – 85
Playgrounds, Neighborhood Parks	50 – 70	NA	70 – 75	75 – 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 75	NA	75 – 80	80 – 85
Office Buildings, Business Commercial, and Professional	50 – 70	70 – 75	75 – 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	75 – 80	80 – 85	NA

Source: City of Santee 2003.

Notes: Ldn = day-night Noise Level; NA = not applicable

1 Applies to noise-sensitive areas which serve a significant function for the use which could be adversely affected by noise such as outside areas used primarily for instruction, meditation areas, rest and relaxation areas, and other areas where general peace and quiet are important.

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Normally Unacceptable: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features must be included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

Table C: Santee General Plan Land Use Compatibility Guidelines (Ldn)

Land Use Category	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential – Low Density, Single-Family, Duplex, Mobile Homes	50 – 65	65 – 70	70 – 75	75 – 85

City of Santee Municipal Code

The City of Santee addresses noise impacts in Chapter 5.04 of the City's Municipal Code[3]. Section 5.04.040, which establishes the City's noise regulation, generally prohibits nuisance noise and states that it is unlawful for any person to make, continue, or cause to be made or continued within the City limits any disturbing, excessive, or offensive noise that causes discomfort or annoyance to reasonable persons of normal sensitivity residing in the area. This section details several specific sources of nuisance noise and outlines how it may be determined that the noise is in violation of the code. Specific sources of nuisance noise include, but are not limited to, devices for producing or reproducing sound, drums and other musical instruments, yelling, and animals.

Section 5.04.040 also provides the following requirements for HVAC units:

> 4. Heating and Air Conditioning Equipment and Generators.
>
> > a. It is unlawful for any person to operate or allow the operation of any generator, air conditioning, refrigeration or heating equipment in such manner as to create a noise disturbance on the premises of any other occupied property, or if a condominium, apartment house, duplex, or attached business, within any adjoining unit.
> >
> > b. All generators, heating, air conditioning, or refrigeration equipment are subject to the setback and screening requirements in this code.

Section 5.04.090, which specifically pertains to construction equipment, makes operation of any construction equipment outside the hours of 7:00 a.m. through 7:00 p.m., Monday through Saturday, except holidays, unlawful unless the operation is expressly approved by the Director of Development Services. Construction equipment with a manufacturer's noise rating of 85 dBA L_{max} or greater may only operate at a specific location for 10 consecutive workdays. If work involving such equipment would involve more than 10 consecutive workdays, a notice must be provided to all property owners and residents within 300 feet of the site no later than 10 days before the start of construction. The notice must be approved by the City and describe the proposed project and the expected duration of work and provide a point of contact to resolve noise complaints.

[3] City of Santee. 2023. Municipal Code. July

State of California Green Building Standards Code

The State of California's Green Building Standards Code (CALGreen) contains mandatory measures for nonresidential building construction in Section 5.507 on Environmental Comfort. These noise standards are applied to new construction in California for controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when nonresidential structures are developed in areas where the exterior noise levels exceed 65 dBA CNEL, such as within a noise contour of an airport, freeway, railroad, or other noise source. If the development falls within an airport or freeway 65 dBA CNEL noise contour, buildings shall be constructed to provide an interior noise level environment attributable to exterior sources that does not exceed an hourly equivalent level of 50 dBA L_{eq} in occupied areas during any hour of operation.

APPLICABLE VIBRATION STANDARDS

The following information provides standards to which potential vibration impacts will be compared.

Federal Transit Administration

Vibration standards included in the FTA Manual (2018) are used in this analysis for ground-borne vibration impacts on surrounding buildings. Table D provides the criteria for assessing the potential for interference or annoyance from vibration levels in a building.

Table D: Criteria for Potential Vibration Annoyance

Land Use	Max L_v (VdB)[1]	Description of Use
Workshop	90	Distinctly feelable vibration. Appropriate to workshops and non-sensitive areas.
Office	84	Feelable vibration. Appropriate to offices and non-sensitive areas.
Residential Day	78	Feelable vibration. Appropriate for computer equipment and low-power optical microscopes (up to 20X).
Residential Night and Operating Rooms	72	Vibration not feelable, but ground-borne noise may be audible inside quiet rooms. Suitable for medium-power microscopes (100X) and other equipment of low sensitivity.

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

[1] As measured in 1/3-octave bands of frequency over the frequency range 8 to 80 Hz.

FTA = Federal Transit Administration
Hz = hertz
L_V = velocity in decibels
Max = maximum
VdB = vibration velocity decibels

The criteria for environmental impacts resulting from ground-borne vibration are based on the maximum levels for a single event. The City's Municipal Code does not include specific criteria for assessing vibration impacts associated with damage. Therefore, for the purpose of determining the significance of vibration impacts experienced at sensitive uses surrounding the project site, the guidelines within the FTA Manual have been used to determine vibration impacts (refer to Table E, below).

Table E: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
Reinforced concrete, steel, or timber (no plaster)	0.50
Engineered concrete and masonry (no plaster)	0.30
Non-engineered timber and masonry buildings	0.20
Buildings extremely susceptible to vibration damage	0.12

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
in/sec = inches per second PPV = peak particle velocity

The FTA Manual guidelines show that a vibration level of up to 0.2 inches per second (in/sec) in PPV is considered safe for non-engineered timber and masonry buildings, which are the types of buildings located on properties adjacent to the project site. Accordingly, the 0.2 in/sec PPV threshold was used to evaluate vibration impacts at the nearest structures to the site.

THRESHOLDS OF SIGNIFICANCE

Based on *Guidelines for the Implementation of the California Environmental Quality Act* (CEQA), Appendix G, Public Resources Code, Sections 15000–15387, a project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and the goals of the community in which it is located.

The *State CEQA Guidelines* indicate that a project would have a significant impact on noise if it would result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generation of excessive ground-borne vibration or ground-borne noise levels; or
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

OVERVIEW OF THE EXISTING NOISE ENVIRONMENT

The primary existing noise sources in the project area are transportation facilities, including SR-67 and Woodside Avenue.

In order to assess the existing noise conditions in the area, long-term noise measurements were conducted at the project site. Two long-term, 24-hour measurements were taken from November 6, 2023, to November 7, 2023. The locations of the noise measurements are shown on Figure 3, and the results are summarized in Table F. Noise measurement data are provided in Attachment B of this analysis.

Table F: Existing Noise Level Measurements

Location Number	Location Description	Daytime Noise Levels[1] (dBA L_{eq})	Nighttime Noise Levels[2] (dBA L_{eq})	Average Daily Noise Levels (dBA L_{dn})	Primary Noise Sources
LT-1	At 10835 Woodside Avenue, located southeast of the project site boundary line on a light pole, approximately 150 ft from the SR-67 centerline.	58.5–67.2	53.5-67.0	68.3	Traffic SR-67
LT-2	At 10835 Woodside Avenue, located along southwest project site boundary line on a light pole, approximately 220 ft from the Woodside Avenue centerline.	52.0–59.8	46.2–59.6	60.7	Traffic on Woodside Avenue

Source: Compiled by LSA (December 2023).
[1] Daytime Noise Levels = noise levels during the hours of 7:00 a.m. to 10:00 p.m.
[2] Nighttime Noise Levels = noise levels during the hours of 10:00 p.m. to 7:00 a.m.
L_{dn} = Day-night average noise level
dBA = A-weighted decibel(s)
ft = foot/feet
L_{eq} = equivalent continuous sound level

AIRCRAFT NOISE

The project site is approximately 0.9 miles north of is Gillespie Field Airport. Based on the Gillespie Field Airport Land Use Compatibility Plan[4] the project is located outside of the 65 dBA CNEL noise contour for Gillespie Field. Because the project site is not located within the 65 dBA CNEL noise contour, no further analysis associated with aircraft noise impacts is necessary. Additionally, there are no helipads or private airstrips within 2 miles from the project area.

Sensitive Land Uses in the Project Vicinity

Certain land uses are considered more sensitive to noise than others are. Examples of these include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. Land uses adjacent to the project site include the following:

- **North:** Existing commercial business
- **Northwest:** Existing single-family residential uses opposite Woodside Avenue
- **East:** State Route 67 (SR-67)
- **South:** Existing multi-family residential uses

The nearest sensitive receptors are:

- **South:** Existing multi-family residential uses located at approximately 20 feet from the project site boundary.

[4] SDCRAA (San Diego County Regional Airport Authority). 2010. *Gillespie Field Airport Land Use Compatibility Plan*.

PROJECT IMPACT ANALYSIS

The proposed project would result in short-term construction noise and vibration impacts and long-term mobile-source noise and vibration impacts as described below.

Short-Term Construction-Related Impact Analysis

Project construction would result in short-term noise and vibration. Maximum construction noise would be short-term, generally intermittent depending on the construction phase, and variable depending on receiver distance from the active construction zone. The duration of various types of construction noise and vibration would vary from one day to several weeks, depending on the phase of construction. The levels and types of impacts that may occur during construction are described below.

Construction Noise Analysis

Two types of short-term noise would occur during project construction, including: (1) equipment delivery and construction worker commutes; and (2) project construction operations.

The first type of short-term construction noise would result from the transport of construction equipment and materials to the project site and construction worker commutes. These transportation activities would incrementally raise noise levels on access roads leading to the site. It is expected that larger trucks used in equipment delivery would generate higher noise impacts than trucks associated with worker commutes. The single-event noise from equipment trucks passing at a distance of 50 ft from a sensitive noise receptor would reach a maximum level of 84 dBA L_{max}. However, the pieces of heavy equipment for construction activities would be moved on site just once and would remain on site for the duration of each construction phase. This one-time trip, when heavy construction equipment is moved on and off site, would not add to the daily traffic noise in the project vicinity. The total number of daily vehicle trips would be minimal when compared to existing traffic volumes on the affected streets, and the long-term noise level changes associated with these trips would not be perceptible. Therefore, equipment transport noise and construction-related worker commute impacts would be short term and would not result in a significant off-site noise impact. No mitigation is required.

The second type of short-term noise impact is related to noise generated during demolition, site preparation, grading, building construction, architectural coating, and paving on the project site. Construction is undertaken in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the project site. Therefore, the noise levels would vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table G lists the maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 ft between the construction equipment and a noise receptor. Typical operating cycles for these types of construction equipment may involve 1–2 minutes of full-power operation followed by 3–4 minutes at lower power settings.

Table G: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%)	Maximum Noise Level (L_{max}) at 50 ft
Compressor	100	81
Concrete Mixer	40	85
Concrete Pump	40	85
Crane	16	83
Dozer	40	80
Forklift	20	75
Front [End] Loader	40	79
Generator	100	78
Grader	8	85
Scraper	40	88
Welder	40	74

Sources: *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances* (USEPA 1971); Roadway Construction Noise Model (FHWA 2006).
Ft = foot/feet
L_{max} = maximum instantaneous sound level

In addition to the reference maximum noise level, the usage factor provided in Table G is utilized to calculate the hourly noise level impact for each piece of equipment based on the following equation:

$$L_{eq}(equip) = E.L. + 10\log(U.F.) - 20\log\left(\frac{D}{50}\right)$$

where: *L_{eq} (equip)* = L_{eq} at a receiver resulting from the operation of a single piece of equipment over a specified time period

E.L. = Noise emission level of the particular piece of equipment at a reference distance of 50 ft

U.F. = Usage factor that accounts for the fraction of time that the equipment is in use over the specified period of time

D = Distance from the receiver to the piece of equipment

Each piece of construction equipment operates as an individual point source. Utilizing the following equation, a composite noise level can be calculated when multiple sources of noise operate simultaneously:

$$Leq\ (composite) = 10 * \log_{10}\left(\sum_{1}^{n} 10^{\frac{Ln}{10}}\right)$$

Table H shows the composite noise levels of one piece of equipment type for each construction phase at a distance of 50 ft from the construction area. Once composite noise levels are calculated, reference noise levels can then be adjusted for distance using the following equation:

$$Leq\ (at\ distance\ X) = Leq\ (at\ 50\ feet) - 20 * \log_{10}\left(\frac{X}{50}\right)$$

In general, this equation shows that doubling the distance would decrease noise levels by 6 dBA, while halving the distance would increase noise levels by 6 dBA.

As presented below, Table H shows the construction phases, the expected duration of each phase, the equipment expected to be used during each phase, the composite noise levels of the equipment at 50 ft, the distance of the nearest sensitive receptor from the average location of construction activities (a distance of 130 ft from the center of the project site), and noise levels expected during each phase of construction. These noise level projections do not take into account intervening topography or barriers. Attachment C provides construction noise calculations.

Table H: Construction Noise Levels by Phase

Phase	Duration (days)	Equipment	Composite Noise Level at 50 ft (dBA L_{eq})	Distance to Closest Sensitive Receptor (ft)[1]	Noise Level at Receptor (dBA L_{eq})
Demolition	15	1 concrete/industrial saw, 1 dozer, and 1 tractor	86	130	77
Site Preparation	10	1 grader, 1 scraper, and 1 tractor	85	130	77
Grading	10	1 grader, 1 dozer, and 2 tractors	86	130	78
Building Construction	255	1 crane, 2 forklift, 1 generator set, 1 tractor, and 3 welders	84	130	75
Paving	10	1 cement and mortar mixer, 1 paver,1 paving equipment, 2 rollers, and 1 tractor	86	130	77
Architectural Coating	124	1 air compressor	74	130	66

Source: Compiled by LSA (2023).

1 Distances are from the average location of construction activity for each phase, assumed to be the center of the project site. Multi-family residential buildings to the south are 130 feet from the center of construction activity. Other buildings within the same development are further away and would be exposed to less noise.

dBA L_{eq} = average A-weighted hourly noise level

ft = foot/feet

It is expected that average noise levels during construction at the nearest sensitive receptor, the multifamily residential uses to the south, would approach 78 dBA L_{eq} during the grading phase, which would occur for a duration of approximately 10 days. Average noise levels during other construction phases would range from 66 dBA L_{eq} to 78 dBA L_{eq}. Noise levels at the nearest off-site commercial uses to the southwest would reach an average noise level of 71 dBA L_{eq} during the daytime hours. These predicted noise levels would only occur when all construction equipment is operating simultaneously; therefore, these noise levels are assumed to be conservative in nature.

Although the project construction-related short-term noise levels have the potential to be up to 22 dBA higher than the average daytime ambient noise at the closest receptors to the south, construction noise would occur for 10 days or less during the grading phase and would then cease to occur once the project construction is completed and the exposure would be temporary. In accordance with Santee Municipal Code Section 5.04.090, construction activities would not occur before 7:00 a.m. or after 7:00 p.m. on Mondays through Saturdays and would not occur any time on Sundays and holidays. Additionally, as required by the Santee Municipal Code, a notice would be provided to all owners and occupants within 300 feet of the project site if the construction equipment has a manufacturer's noise rating of 85 dB and operates at a specific location for ten consecutive workdays. Although construction noise levels would exceed the existing ambient noise environment, construction noise impacts would be less than significant because construction activities would occur during the hours specified in the Santee Municipal Code and notice would be provided to nearby occupants. With incorporation of standard best business practices for noise reduction, the overall noise levels generated will be minimized, and construction noise impacts would be less than significant and no mitigation is required.

Construction Best Business Practices:the project contractor implement the following measures during construction of the project:

- Equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
- Place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active project site.
- Locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active project site during all project construction.
- Ensure that all construction related activities are restricted to the hours 7:00 a.m. through 7:00 p.m., Monday through Saturday, with no construction on holidays.
- Designate a "disturbance coordinator" at the City of Santee who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler) and would determine and implement reasonable measures warranted to correct the problem.

Construction Vibration Building Damage Potential

Table I provides reference PPV values and vibration levels (in terms of VdB) from typical construction vibration sources at 25 ft. While there is currently limited information regarding vibration source levels specific to the equipment that would be used for the project, to provide a comparison of vibration levels expected for a project of this size, a large bulldozer would generate 0.089 PPV (in/sec) of ground-borne vibration when measured at 25 ft, based on the FTA Manual. As shown previously in Table E, it would take a minimum of 0.2 PPV (in/sec) to cause any potential building damage to non-engineered timber and masonry buildings.

Table I: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L_V at 25 ft	
	PPV (in/sec)	L_V (VdB)[1]
Hoe Ram	0.089	87
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] RMS VdB re 1 μin/sec.
μin/sec = micro-inches per second
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity in decibels

The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the project construction boundary (assuming the construction equipment would only be used at or near the project setback line). The formula for vibration transmission is provided below:

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

The closest structures to the external construction activities are the residential uses to the south, which are approximately 20 ft from the project's southern construction boundary. Using the reference data from Table H and the equation above, it is expected that vibration levels generated by dump trucks and other large equipment at 20 ft of the project boundary would generate ground-borne vibration levels of 0.124 PPV (in/sec) at the closest structures to the project site. This vibration level would not exceed the 0.2 in/sec PPV threshold considered safe for non-engineered timber and masonry buildings. Vibration levels at all other buildings would be lower. Therefore, construction would not result in any vibration damage, and impacts would be less than significant.

Construction Vibration Human Annoyance Potential

As stated above, the existing residences, located approximately 130 feet to the south from the center of the project site, is the nearest sensitive receptor and would experience vibration levels approaching 66 VdB based on the following equation:

$$L_v dB\ (D) = L_v dB\ (25\ feet) - 30\ Log\ (D/25)$$

Based on the standards provided in Table D*,* this level of ground-borne vibration is below the threshold of distinctly perceptible, which is approximately 72 VdB for frequent events at uses where people sleep and would not exceed the FTA vibration threshold for human annoyance at the nearest sensitive use, and project construction would not result in vibration levels that would typically result in human annoyance. Therefore, this level of ground-borne vibration would be less than significant for human annoyance. No mitigation is required.

Long-Term Off-Site Traffic Noise Impact Analysis

In order to assess the potential traffic impacts related to the proposed project, LSA estimates that the proposed project would result in a net increase of 121 ADT based on the proposed increase in square footage. Based on the ADTs provided by the City of Santee Mobility Element[5], the ADT along Woodside Avenue in the project vicinity is approximately 23,300 based on projections for the year 2013. While the existing ADT is likely higher, using 23,300 ADT as the existing count would be a conservative approach. The following equation was used to determine the potential impacts of the project:

$$\text{Change in CNEL} = 10 \log_{10} [V_{e+p}/V_{existing}]$$

Where: $V_{existing}$ = the existing daily volume
V_{e+p} = existing daily volumes plus project
Change in CNEL = the increase in noise level due to the project

The results of the calculations show that an increase of less than 0.03 dBA CNEL is expected along Woodside Avenue. A noise level increase of less than 3 dBA would not be perceptible to the human ear; therefore, the traffic noise increase along Woodside Avenue resulting from the proposed project would be less than significant. No mitigation is required.

Long-Term Operational Noise Impact Analysis

The project site currently operates as a storage site for various vehicles; therefore, the existing parking lot activities are expected to remain generally the same. Additional long-term noise would be associated with new stationary sources proposed on the project site. Therefore, new operational noise associated with the project's heating, ventilation, and air conditioning (HVAC) system would be the only new source of noise.

Heating, Ventilation, and Air Conditioning Equipment

The project would include rooftop HVAC units. The HVAC equipment could operate 24 hours per day. Rooftop HVAC equipment would generate noise levels of 66.6 dBA L_{eq} at 5 feet per HVAC unit based on previous measurements conducted by LSA. Table I presents the noise levels from HVAC equipment at the nearest noise-sensitive locations. The closest off-site sensitive uses to the proposed location of an on-site HVAC unit would be located approximately 135 feet away, assuming the HVAC units are located in the center of the rooftop. Two banks of HVAC units are assumed to be installed (4 units per bank) and would generate noise levels of 72.6 dBA L_{eq} at 5 feet. After distance attenuation, noise generated from the on-site HVAC equipment would be up to 44.0 dBA L_{eq} at the nearest sensitive use.

Truck Deliveries and Truck Loading and Unloading Activities

Noise levels generated by delivery trucks would be similar to noise readings from truck loading and unloading activities, which generate a noise level of 75 dBA L_{eq} at 20 ft based on measurements taken by LSA (*Operational Noise Impact Analysis for Richmond Wholesale Meat Distribution Center*

[5] City of Santee. 2017. Mobility Element. October 25.

[LSA 2016]). Delivery trucks would arrive on site and maneuver their trailers so that trailers would be parked within the loading area. During this process, noise levels are associated with the truck engine noise, air brakes, and back-up alarms while the truck is backing into the loading area. These noise levels would occur for a shorter period of time (less than 5 minutes). At a distance of 75 feet and incorporating the shorter duration of operations, a reference noise level of 64.2 dBA L_{eq} at 75 feet is utilized in this analysis.

Cumulative Operations Noise Assessment

The combined noise level of projected operations and existing ambient noise levels would be 56.1 dBA L_{eq}, resulting in an increase of 3.2 dBA above 52.9 dBA L_{eq}, the average ambient nighttime conditions. Therefore, noise from HVAC units would not exceed a 5 dBA L_{eq} increase over ambient noise levels at the property line of the closest properties to the project site. In addition, the perimeter parapet walls shown in the project plans would further reduce the noise levels from the HVAC unit. Therefore, noise associated with the on-site operations would be less than significant, and no mitigation is required.

Table J: Summary of Operational Noise Levels

Off-Site Land Use	Direction	Source	Distance from Source (ft)[1]	Reference Noise Level (dBA L_{eq})	Distance Attenuation (dBA)	Average Noise Level (dBA L_{eq})
Residence	South	HVAC	135	72.6[2]	28.6	44.0
		Trucks	75	64.2	11.5	52.7
					Combined:	53.2

Source: Compiled by LSA (2023).

[1] Distances are measured from the property line of the receiving land use to the closest source of noise.

[2] Reference noise levels are associated with an assumption of 4 HVAC units.

dBA = A-weighted decibels
ft = foot/feet
HVAC = heating, ventilation, and air conditioning
L_{eq} = equivalent continuous sound level

Long-Term Ground-Borne Noise and Vibration from Vehicular Traffic

The proposed project would not generate vibration levels related to on-site operations. In addition, vibration levels generated from project-related traffic on the adjacent roadways are unusual for on-road vehicles because the rubber tires and suspension systems of on-road vehicles provide vibration isolation. Based on a reference vibration level of 0.076 in/sec PPV, structures more than 20 ft from the roadways that contain project trips would experience vibration levels below the most conservative standard of 0.12 in/sec PPV; therefore, vibration levels generated from project-related traffic on the adjacent roadways would be less than significant, and no mitigation is required.

Attachments:
A: Figures
B: Noise Measurement Data
C: Construction Noise Calculations

ATTACHMENT A

FIGURES

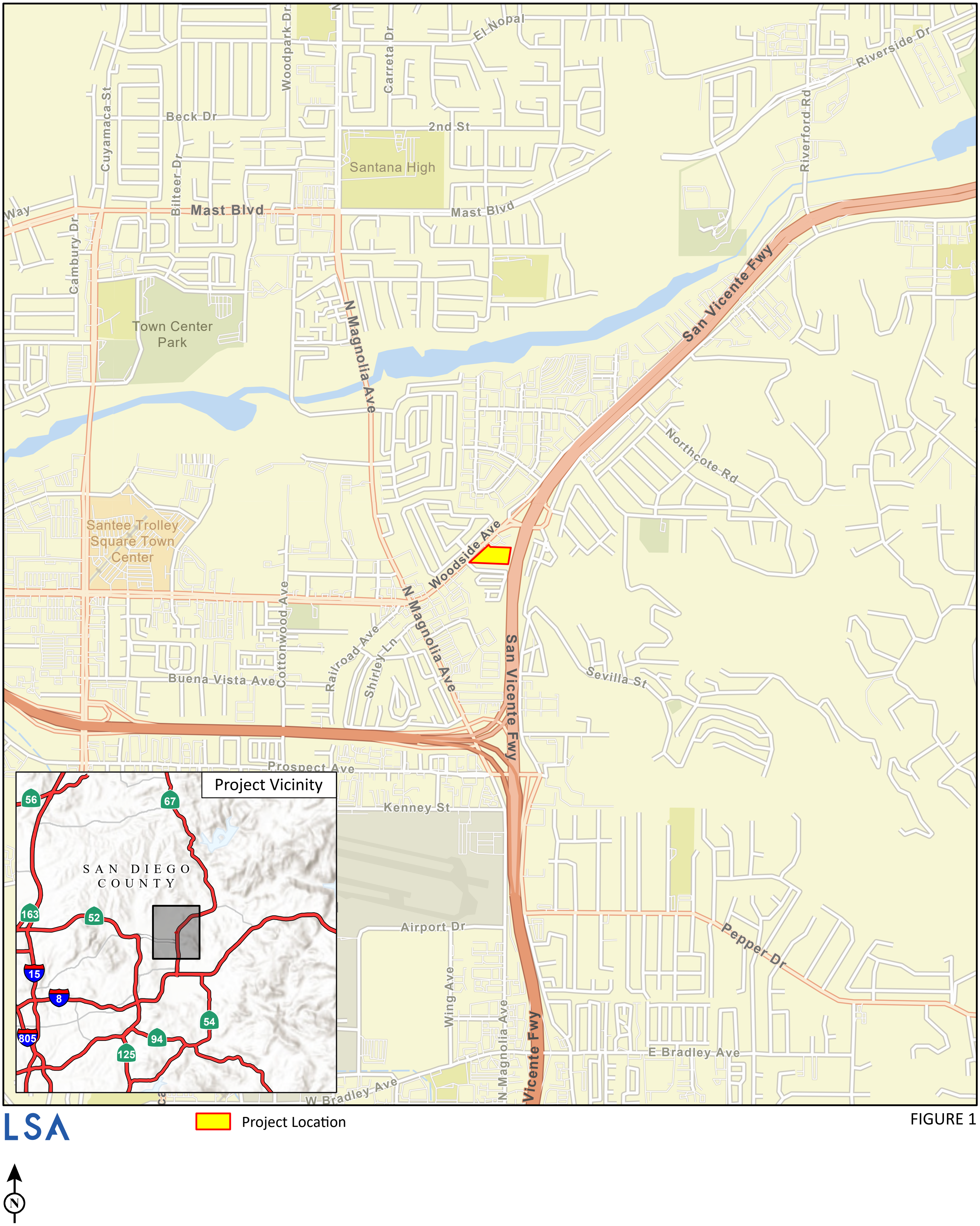

FIGURE 1

Santee Self-Storage Project

Regional Location

SOURCE: Esri World Street Map (2023)

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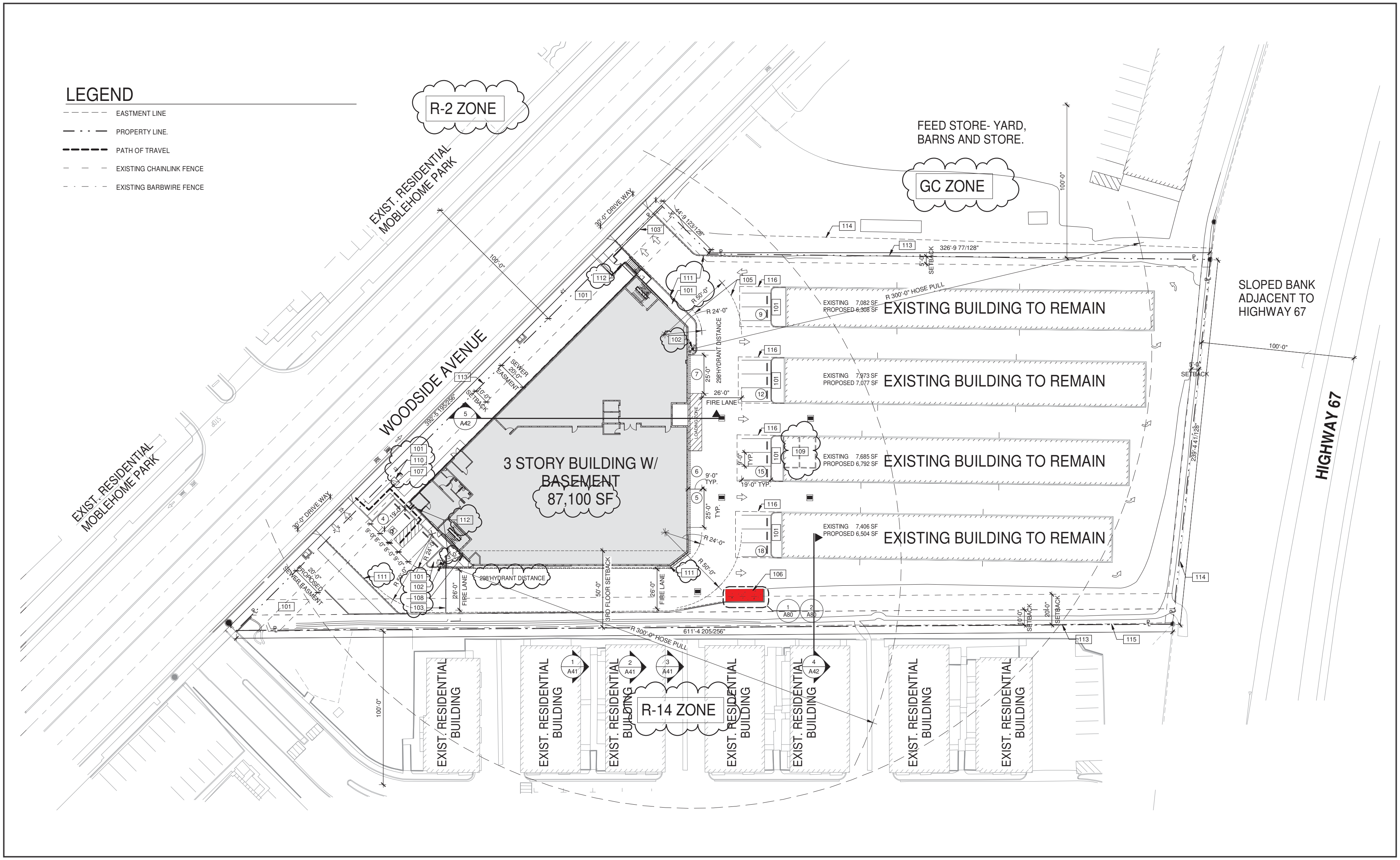

LEGEND

Trash Enclosure

FIGURE 2

SOURCE: Ware Malcomb

Santee Self-Storage Project

Conceptual Site Plan

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LSA

LEGEND

Project Site Boundary

LT-1 Long-term Noise Monitoring Location

0 100 200
FEET

SOURCE: Google Earth 2023

FIGURE 3

The Santee Self-Storage

Noise Monitoring Locations

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ATTACHMENT B

NOISE MEASUREMENT DATA

Noise Measurement Survey – 24 HR

Project Number: 20231146
Project Name: Santee Extra Storage

Test Personnel: Kevin Nguyendo
Equipment: Spark 706RC (SN:907)

Site Number: LT-1 Date: 11/6//23

Time: From 1:00 p.m. To 1:00 p.m.

Site Location: 10835 Woodside Ave, Santee, CA 92071. Located along the southeast project site boundary line on a light pole.

Primary Noise Sources: Traffic on highway 67.

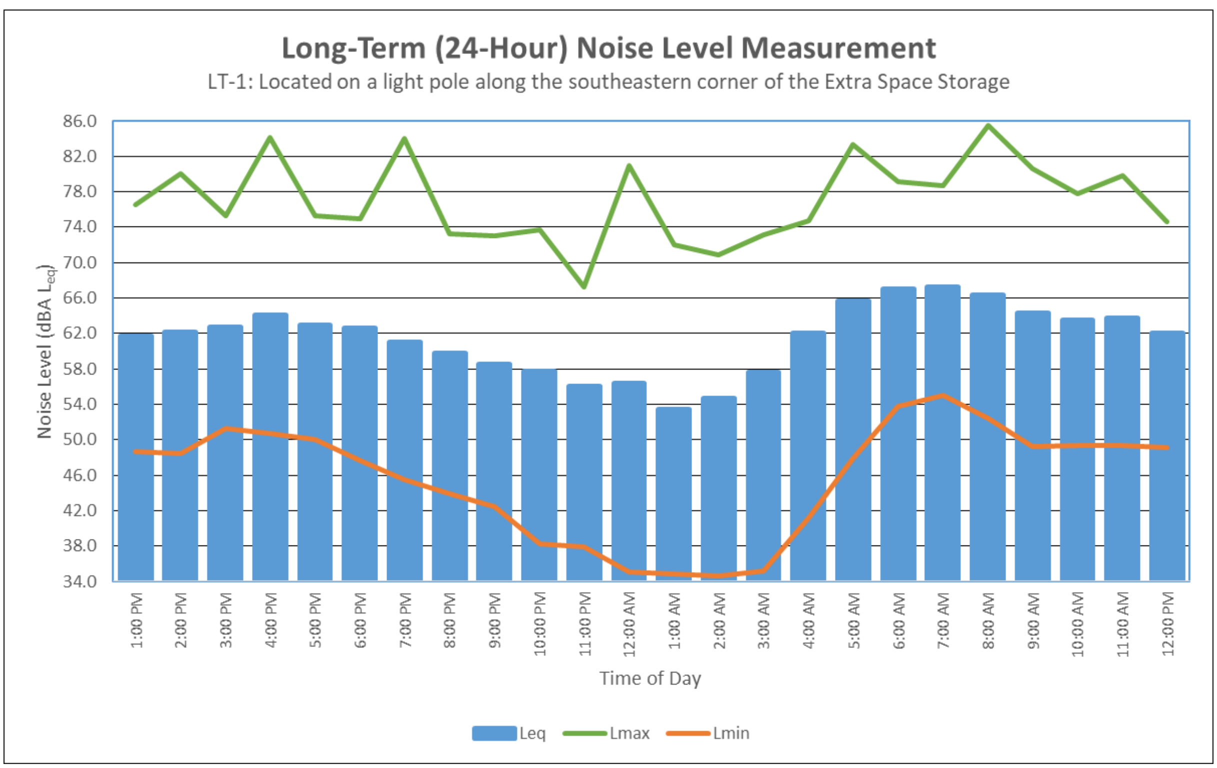
Comments:

Photo:

Long-Term (24-Hour) Noise Level Measurement Results at LT-1

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
1:00 PM	11/6/23	61.7	76.5	48.7
2:00 PM	11/6/23	62.1	80.1	48.4
3:00 PM	11/6/23	62.7	75.3	51.3
4:00 PM	11/6/23	64.1	84.1	50.7
5:00 PM	11/6/23	63.0	75.3	50.0
6:00 PM	11/6/23	62.6	75.0	47.7
7:00 PM	11/6/23	61.0	84.0	45.5
8:00 PM	11/6/23	59.7	73.2	43.9
9:00 PM	11/6/23	58.5	73.0	42.4
10:00 PM	11/6/23	57.7	73.7	38.3
11:00 PM	11/6/23	56.0	67.3	37.9
12:00 AM	11/7/23	56.3	81.0	35.1
1:00 AM	11/7/23	53.5	72.0	34.9
2:00 AM	11/7/23	54.7	70.9	34.6
3:00 AM	11/7/23	57.6	73.1	35.2
4:00 AM	11/7/23	62.0	74.7	41.2
5:00 AM	11/7/23	65.7	83.3	47.9
6:00 AM	11/7/23	67.0	79.2	53.8
7:00 AM	11/7/23	67.2	78.7	55.0
8:00 AM	11/7/23	66.3	85.5	52.4
9:00 AM	11/7/23	64.3	80.6	49.2
10:00 AM	11/7/23	63.5	77.8	49.4
11:00 AM	11/7/23	63.8	79.8	49.4
12:00 PM	11/7/23	62.0	74.6	49.1

Source: Compiled by LSA Associates, Inc. (2023).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level



Noise Measurement Survey – 24 HR

Project Number: 20231146
Project Name: Santee Extra Storage

Test Personnel: Kevin Nguyendo
Equipment: Spark 706RC (SN:119)

Site Number: LT-2 Date: 11/6//23

Time: From 1:00 p.m. To 1:00 p.m.

Site Location: 10835 Woodside Ave, Santee, CA 92071. Located along the southwest project site boundary line on a light pole.

Primary Noise Sources: Traffic on Woodside Avenue.

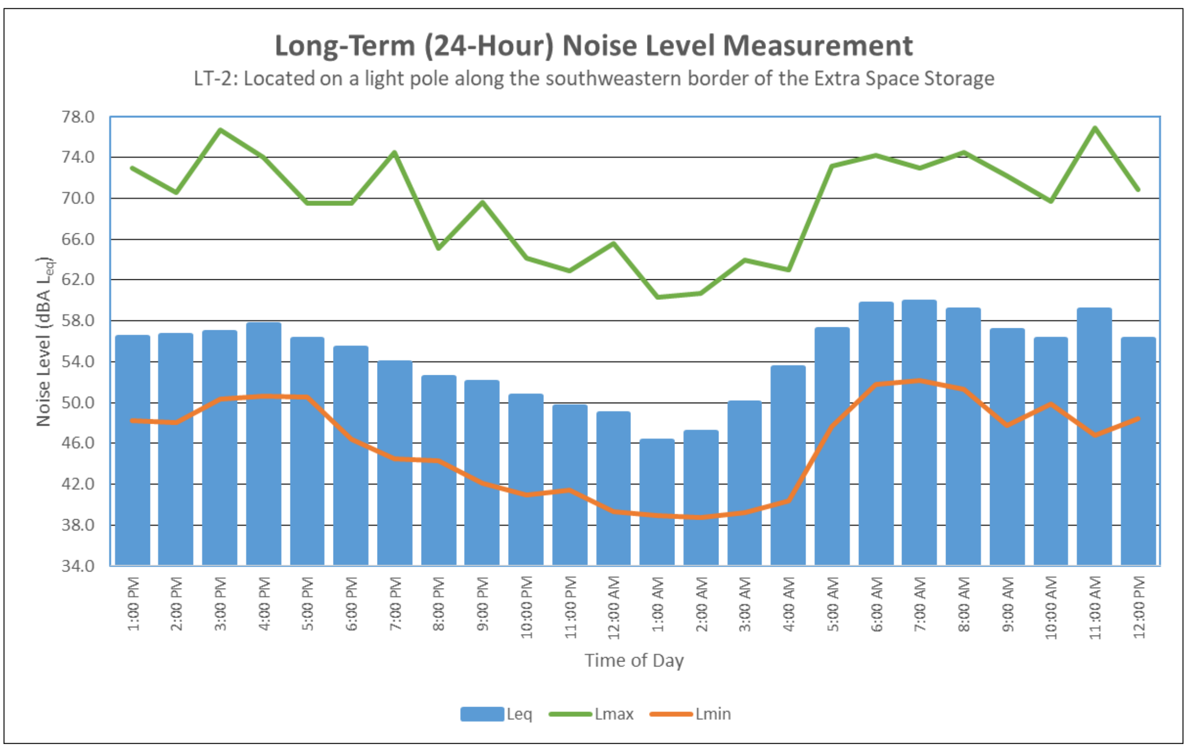
Comments:

Photo:

Long-Term (24-Hour) Noise Level Measurement Results at LT-2

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
1:00 PM	11/6/23	56.4	73.0	48.2
2:00 PM	11/6/23	56.5	70.6	48.0
3:00 PM	11/6/23	56.9	76.7	50.3
4:00 PM	11/6/23	57.7	74.0	50.6
5:00 PM	11/6/23	56.2	69.5	50.5
6:00 PM	11/6/23	55.4	69.5	46.4
7:00 PM	11/6/23	53.9	74.5	44.5
8:00 PM	11/6/23	52.5	65.1	44.3
9:00 PM	11/6/23	52.0	69.6	42.1
10:00 PM	11/6/23	50.6	64.1	40.9
11:00 PM	11/6/23	49.6	62.9	41.4
12:00 AM	11/7/23	48.9	65.6	39.3
1:00 AM	11/7/23	46.2	60.3	38.9
2:00 AM	11/7/23	47.1	60.7	38.7
3:00 AM	11/7/23	50.0	64.0	39.2
4:00 AM	11/7/23	53.4	63.0	40.4
5:00 AM	11/7/23	57.1	73.2	47.7
6:00 AM	11/7/23	59.6	74.2	51.8
7:00 AM	11/7/23	59.8	73.0	52.2
8:00 AM	11/7/23	59.1	74.5	51.3
9:00 AM	11/7/23	57.1	72.2	47.8
10:00 AM	11/7/23	56.2	69.7	49.9
11:00 AM	11/7/23	59.1	76.9	46.8
12:00 PM	11/7/23	56.2	70.9	48.4

Source: Compiled by LSA Associates, Inc. (2023).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level



ATTACHMENT C

CONSTRUCTION NOISE CALCULATIONS

Construction Calculations

Phase: Demolition

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Concrete Saw	1	90	20	50	0.5	90	83
Dozer	1	82	40	50	0.5	82	78
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**91**	**86**
					Combined at Receptor 130 feet	**83**	**77**

Phase: Site Preparation

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Grader	1	85	40	50	0.5	85	81
Scraper	1	84	40	50	0.5	84	80
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**89**	**85**
					Combined at Receptor 130 feet	**81**	**77**

Phase: Grading

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Grader	1	85	40	50	0.5	85	81
Dozer	1	82	40	50	0.5	82	78
Tractor	2	84	40	50	0.5	84	83
					Combined at 50 feet	**89**	**86**
					Combined at Receptor 130 feet	**80**	**78**

Phase:Building Construstion

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Crane	1	81	16	50	0.5	81	73
Man Lift	2	75	20	50	0.5	75	71
Generator	1	81	50	50	0.5	81	78
Tractor	1	84	40	50	0.5	84	80
Welder / Torch	3	74	40	50	0.5	74	75
					Combined at 50 feet	**87**	**84**
					Combined at Receptor 130 feet	**79**	**75**

Phase:Paving

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Drum Mixer	1	80	50	50	0.5	80	77
Paver	1	77	50	50	0.5	77	74
All Other Equipment > 5 HP	1	85	50	50	0.5	85	82
Tractor	1	84	40	50	0.5	84	80
Roller	2	80	20	50	0.5	80	76
					Combined at 50 feet	**89**	**86**
					Combined at Receptor 130 feet	**81**	**77**

Phase:Architectural Coating

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Compressor (air)	1	78	40	50	0.5	78	74
					Combined at 50 feet	**78**	**74**
					Combined at Receptor 130 feet	**70**	**66**

Sources: RCNM

[1]- Percentage of time that a piece of equipment is operating at full power.
dBA – A-weighted Decibels
Lmax- Maximum Level
Leq- Equivalent Level

ATTACHMENT D

AIR QUALITY TECHNICAL MEMORANDUM

CARLSBAD
CLOVIS
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: August 9, 2024

TO: Clint Kleppe, Extra Space Development

FROM: Cara Cunningham, Associate
Bianca Martinez, Air Quality Specialist

SUBJECT: Air Quality Technical Analysis for the Santee Self-Storage Project in Santee, California

INTRODUCTION

LSA has prepared this Air Quality Technical Memorandum to evaluate the impacts associated with construction and operation of the proposed Santee Self Storage Project (project) located in Santee, California. This analysis follows the methodology identified by the San Diego County Air Pollution Control District (SDAPCD).[1] This analysis includes an assessment of criteria pollutant emissions, an assessment of carbon monoxide (CO) hot-spot impacts, and an assessment of the project's impact on sensitive receptors.

PROJECT LOCATION AND DESCRIPTION

The 2.8-acre project site is located at 10835 Woodside Avenue in Santee, San Diego County, California. The project site consists of Assessor's Parcel Number 384-120-46-00. The existing project site includes a self-storage facility consisting of four one-story buildings, a combined square footage of 30,146 and a total of 257 units, and an undeveloped area that provides at-grade storage for recreational vehicles (RVs) and boats. The project site is surrounded by a mixture of residential and commercial uses. Regional access to the project site is provided by State Route 67 (SR-67), which is adjacent to the project site. Local access to the project site is provided by Woodside Avenue. Figure 1 shows the project location, and Figure 2 provides an overview of the proposed site plan (all figures are provided in Attachment A).

The proposed project would construct an 87,100-square-foot (sq ft) self-storage building on an undeveloped area of the project site that currently provides at-grade storage for RVs and boats. The proposed building would consist of three stories and a basement level, which would contain a total of 622 storage units. An office space and a 24-hour kiosk would be constructed within the southwest corner of the basement level, which would be the main point of entrance for customers. This

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1 San Diego County Air Pollution Control District (SDAPCD). CEQA. Website: https://www.sdapcd.org/content/sdapcd/planning/ceqa.html (accessed November 2023).

portion of the basement level would sit at ground level due to the existing grade of the project site. Additionally, a 1,158 sq ft apartment would be constructed for an on-site caretaker on the first floor of the proposed building. The proposed project would demolish small portions of three of the existing one-story self-storage buildings (3,465 sq ft) to accommodate the addition of 11 new surface parking spaces. In addition, the proposed project would include approximately 13,092 sq ft of landscape area. The remaining portions of the existing self-storage buildings, consisting of 26,681 sq ft , would continue to operate in their current configurations. Under post-development conditions, the total self-storage square footage on site (including the existing 26,681 sq ft to remain) would be 113,781 sq ft, including a total of 854 storage units and 18 parking stalls.

Once operational, the proposed project would generate approximately 121 average daily trips. The proposed project would be all-electric and would not operate on natural gas. Hours of operation would remain the same as the existing conditions. In addition, the proposed project would not require any additional employees on site compared to existing operations.

Construction activities would include demolition, site preparation, grading, building construction, paving, and architectural coating activities. Construction of the proposed project is anticipated to commence in the beginning of 2025 and continue for approximately 14 months. The proposed project would require the net export of approximately 7,900 cubic yards of soil. In addition, it is anticipated that approximately 8 to 10 construction workers would be on site each day during the construction period. Site preparation, grading, and building activities would involve the use of standard earthmoving equipment such as large excavators, cranes, and other related equipment.

EXISTING LAND USES IN THE PROJECT AREA

For the purpose of this analysis, sensitive receptors are areas of the population that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include residences, schools, daycare centers, hospitals, parks, and similar uses that are sensitive to air quality. Impacts on sensitive receptors are of particular concern because those receptors are the population most vulnerable to the effects of air pollution. The project site is surrounded by a mixture of residential and commercial uses. The proposed project site is immediately bounded to the northwest by Woodside Avenue, to the north by a commercial business, to the east by SR-67, and to the south by residential uses. The closest sensitive receptors to the project site include the single-family homes approximately 20 feet south of the project site.

ENVIRONMENTAL SETTING

Air quality is primarily a function of both local climate and local sources of air pollution and regional pollution transport. The amount of a given pollutant in the atmosphere is determined by the amount of the pollutant released and the atmosphere's ability to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, and terrain, and for photochemical pollutants, sunshine.

A region's topographic features have a direct correlation with air pollution flow and, therefore, are used to determine the boundary of air basins. The proposed project is located in Santee, within the jurisdiction of the SDAPCD, which regulates air quality in the San Diego Air Basin (SDAB).

The SDAB experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed in mid- to late afternoon on hot summer days, when the air appears to clear up suddenly. Winter inversions frequently break by mid-morning.

Winds in the project area blow predominantly from the south-southwest, with relatively low velocities. Wind speeds in the project area average about 5 miles per hour. Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion, limit the vertical dispersion of air pollutants throughout the SDAB. Strong, dry, north or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months, dispersing air contaminants. The Santa Ana conditions tend to last for several days at a time.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino counties. In the winter, the greatest pollution problems are CO and nitrogen oxides (NO_X) because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and brighter sunshine combine to cause a reaction between hydrocarbons and NO_X to form photochemical smog. Smog is a general term for naturally occurring fog that has become mixed with smoke or pollution. In this context, it is better described as a form of air pollution produced by the photochemical reaction of sunlight with pollutants that have been released into the atmosphere, especially by automotive emissions.

Attainment Status

Both the State of California (State) and the federal government have established health-based ambient air quality standards (AAQS) for six criteria air pollutants: CO, ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter (particulate matter less than 2.5 microns in diameter and less than 10 microns in diameter [$PM_{2.5}$ and PM_{10}, respectively]). The SDAB is designated as nonattainment for O_3 for federal standards and nonattainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards.

Air quality monitoring stations are located throughout the nation and maintained by the local air districts and State air quality regulating agencies. Data collected at permanent monitoring stations are used by the United States Environmental Protection Agency (USEPA) to identify regions as “attainment” or “nonattainment” depending on whether the regions meet the requirements stated in the applicable National Air Quality Standards (NAAQS). Nonattainment areas are imposed with additional restrictions as required by the USEPA. In addition, different classifications of attainment, such as marginal, moderate, serious, severe, and extreme, are used to classify each air basin in the State on a pollutant-by-pollutant basis. The classifications are used as a foundation to create air quality management strategies to improve air quality and comply with the NAAQS. Attainment statuses for each of the criteria pollutants for San Diego County are listed in Table A.

Table A: Attainment Status of Criteria Pollutants in San Diego County

Pollutant	Federal	State
O_3 1 hour	Nonattainment	Nonattainment
O_3 8 hour	Attainment[1]	Nonattainment
CO	Attainment	Attainment
PM_{10}	Unclassifiable[2]	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Pb	Attainment	Attainment
Sulfates	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility	No Federal Standard	Unclassified

Source: Attainment Status (San Diego County Air Pollution Control District 2021).

[1] The federal 1-hour standard of 12 ppm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.

[2] At the time of designation, if the available data do not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

CO = carbon monoxide
NO_2 = nitrogen dioxide
O_3 = ozone
Pb = lead
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
ppm = parts per million
SO_2 = sulfur dioxide

Air Quality Monitoring Results

Air quality monitoring stations are located throughout the nation and are maintained by the local air pollution control district and State air quality regulating agencies. The SDAPCD, together with the California Air Resources Board (CARB), maintains ambient air quality monitoring stations in the SDAB. The air quality monitoring station closest to the project area is the El Cajon ambient air quality monitoring station located at 533 First Street. The air quality trends from this station are used to represent the ambient air quality in the project area. Ambient air quality in the project area from 2020 to 2022 is shown in Table B.[1] As indicated in the monitoring results, no violations of the federal and State PM_{10} standard occurred during the 3-year period. $PM_{2.5}$ levels exceeded the federal standard two times in 2020 only. The State 1-hour O_3 standard was exceeded one time in 2022 only. Additionally, the federal and State 8-hour O_3 standards were exceeded 14 times in 2020, 3 times in 2021, and 2 times in 2022. The CO, SO_2, and NO_2 standards were not exceeded.

[1] California Air Resources Board (CARB). 2019. iADAM: Top 4 Summary. Website: https://www.arb.ca.gov/adam/topfour/topfour1.php (accessed November 2023).

Table B: Ambient Air Quality at Project Vicinity Monitoring Stations

Pollutant[1]	Standard	2020	2021	2022
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		1.5	1.2	1.4
Number of days exceeded:	State: >20 ppm	0	0	0
	Federal: >35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		1.4	1.1	1.1
Number of days exceeded:	State: >9 ppm	0	0	0
	Federal: >9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hour concentration (ppm)		0.094	0.088	0.100
Number of days exceeded:	State: >0.09 ppm	0	0	1
Maximum 8-hour concentration (ppm)		0.083	0.077	0.088
Number of days exceeded:	State: >0.07 ppm	14	3	2
	Federal: >0.08 ppm	14	3	2
Coarse Particulates (PM_{10})				
Maximum 24-hour concentration (µg/m³)		55.0	40.0	44.0
Number of days exceeded:	State: >50 µg/m³	ND	0	0
	Federal: >150 µg/m³	0	0	0
Annual arithmetic average concentration (µg/m³)		ND	ND	ND
Exceeded for the year:	State: >20 µg/m³	ND	ND	ND
	Federal: >50 µg/m³	ND	ND	ND
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hour concentration (µg/m³)		41.6	31.5	27.3
Number of days exceeded:	Federal: >35 µg/m³	2	0	0
Annual arithmetic average concentration (µg/m³)		10.3	9.7	9.4
Exceeded for the year:	State: >12 µg/m³	No	No	No
	Federal: >12 µg/m³	No	No	No
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration (ppm)		0.044	0.038	0.037
Number of days exceeded:	State: >0.250 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.008	0.006	0.008
Exceeded for the year:	Federal: >0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)				
Maximum 1-hour concentration (ppm)		0.0017	0.0016	0.0008
Number of days exceeded:	State: >0.25 ppm	0	0	0
Maximum 24-hour concentration (ppm)		0.0004	0.0003	0.0002
Number of days exceeded:	State: >0.04 ppm	0	0	0
	Federal: >0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.0001	0.0001	0.00006
Exceeded for the year:	Federal: >0.030 ppm	No	No	ND

Sources: Top 4 Summary (CARB 2023); Outdoor Air Quality Data: Monitor Values Report (USEPA 2023).

[1] Data taken at the 533 First Street ambient air quality monitoring station in El Cajon.

µg/m³ = micrograms per cubic meter
CARB = California Air Resources Board
CO = carbon monoxide
ND = No data. There were insufficient (or no) data to determine the value.
NO_2 = nitrogen dioxide
O_3 = ozone
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
ppm = parts per million
SO_2 = sulfur dioxide
USEPA = United States Environmental Protection Agency

REGULATORY SETTING

Applicable federal, State, regional, and local air quality regulations are discussed below.

Federal Regulations

The 1970 federal Clean Air Act (CAA) authorized the establishment of national health-based air quality standards and set deadlines for their attainment. The CAA Amendments of 1990 changed deadlines for attaining national standards as well as the remedial actions required for areas of the nation that exceed the standards. Under the CAA, State and local agencies in areas that exceed the national standards are required to develop State Implementation Plans to demonstrate how they will achieve the national standards by specified dates.

State Regulations

In 1988, the California Clean Air Act (CCAA) required that all air districts in the State endeavor to achieve and maintain California Ambient Air Quality Standards (CAAQS) for CO, O_3, SO_2, and NO_2 by the earliest practical date. The CCAA provides districts with the authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and areawide emission sources. Each nonattainment district is required to adopt a plan to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in districtwide emissions of each nonattainment pollutant or its precursors. A Clean Air Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the State standards for these pollutants are more stringent than the national standards.

CARB is the State's "clean air agency." CARB's goals are to attain and maintain healthy air quality, protect the public from exposure to toxic air contaminants, and oversee compliance with air pollution rules and regulations.

Regional Regulations

San Diego County Air Pollution Control District. The SDAPCD has adopted air quality plans to improve air quality, protect public health, and protect the climate. The San Diego Regional Air Quality Strategy (RAQS) outlines SDAPCD plans and control measures designed to attain and maintain the State standards, while San Diego's portions of the State Implementation Plan (SIP) are designed to attain and maintain federal standards. The RAQS was initially adopted in 1991 and is updated on a triennial basis. The RAQS was updated in 1995, 1998, 2001, 2004, 2009, 2016, and most recently in December 2022. The RAQS does not currently address the CAAQS for $PM_{2.5}$ and PM_{10}.

SDAPCD has also developed the SDAB input to the SIP, which is required under the CAA for areas that are out of attainment of air quality standards. Both the RAQS and SIP demonstrate the effectiveness of CARB measures (mainly for mobile sources) and SDAPCD plans and control measures (mainly for stationary and areawide sources) for attaining the O_3 NAAQS. The SIP is also updated on a triennial basis. SDAPCD adopted its attainment plan and Reasonable Available Control Technology Demonstration for the 2008 8-hour O_3 NAAQS. In addition, the *Measures to Reduce Particulate Matter in San Diego County Report*[1] proposes measures to reduce particulate matter

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1 SDAPCD. 2005. Measures to Reduce Particulate Matter in San Diego County. Website: https://www.sdapcd.org/content/dam/sdapcd/documents/grants/planning/PM-Measures.pdf (accessed November 2023).

emissions and recommends measures for further detailed evaluation and, if appropriate, future rule development (or nonregulatory development, if applicable), adoption, and implementation in San Diego County, in order to attain particulate matter CAAQS.

The RAQS relies on information from CARB and the San Diego Association of Governments (SANDAG), including mobile- and area-source emissions, as well as information regarding projected growth in the county, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. The CARB mobile-source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County of San Diego (County) as part of the development of the County's General Plan. As such, projects that propose development that is consistent with the growth anticipated by the general plans would be consistent with the RAQS. In the event that a project would propose development that is less dense than anticipated by the City's General Plan, the project would likewise be consistent with the RAQS. If a project proposes development that is greater than that anticipated by the General Plan and SANDAG growth projections, the project might be in conflict with the RAQS and SIP, and might have a potentially significant impact on air quality.

The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the SDAB. The SIP also includes rules and regulations that have been adopted by the SDAPCD to control emissions from stationary sources. These SIP-approved rules may be used as a guideline to determine whether a project's emissions would have the potential to conflict with the SIP and thereby hinder attainment of the NAAQS for O_3.

SDAPCD Rules and Regulations. As stated above, the SDAPCD is responsible for planning, implementing, and enforcing NAAQS and CAAQS in the SDAB. The following rules and regulations apply to all sources within the jurisdiction of SDAPCD and would apply to the proposed project:

1. *SDAPCD Regulation IV: Prohibitions; Rule 50: Visible Emissions.* Prohibits visible emissions from exceeding a determined visual threshold from being emitted; this rule applies to the discharge of any air contaminant other than uncombined water vapor.[1]

2. *SDAPCD Regulation IV: Prohibitions; Rule 51: Nuisance.* Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property.[2]

3. *SDAPCD Regulation IV: Prohibitions; Rule 55: Fugitive Dust.* Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust

[1] SDAPCD. 1997. *Rule 50: Visible Emissions*. Website: www.sdapcd.org/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Prohibitions/APCD_R50.pdf (accessed November 2023).

[2] SDAPCD. 1976. *Rule 51: Nuisance*. Website: www.sandiegocounty.gov/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Prohibitions/APCD_R50-1-51.pdf (accessed November 2023).

emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site.[1]

4. *SDAPCD Regulation IV: Prohibitions; Rule 67.0.1: Architectural Coatings.* Requires manufacturers, distributors, and end-users of architectural and industrial maintenance coatings to reduce volatile organic compound (VOC) emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.[2]

5. *SDAPCD Regulation II: Permits; Rule 20.2: New Source Review – Non-Major Stationary Sources.* Outlines Air Quality Impact Analysis (AQIA) trigger levels for new or modified stationary sources.[3]

SDAPCD Air Quality Guidelines. SACPCD adopted the *County of San Diego Guidelines for Determining Significance – Air Quality*[4] in 2007, which serve as a guidance for evaluating adverse environmental effects that a proposed residential development or other land development projects may have on Air Quality. The intent of these Guidelines is to provide a consistent, objective and predictable evaluation of significant effects. These Guidelines shall be used by County staff for the review of discretionary projects and environmental documents pursuant to the California Environmental Quality Act (CEQA).

Local Regulations

There are no local regulations that apply to the proposed project.

METHODOLOGY

Construction Emissions

Construction activities can generate a substantial amount of air pollution. Construction activities are considered temporary; however, short-term impacts can contribute to exceedances of air quality standards. Construction activities include site preparation, earthmoving, and general construction. The emissions generated from these common construction activities include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty, diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips.

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1 SDAPCD. 2009. *Rule 55: Fugitive Dust Control*. Website: www.sdapcd.org/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Prohibitions/APCD_R55.pdf (accessed November 2023).

2 SDAPCD. 2021. *Rule 67: Fugitive Dust Control*. Website: www.sdapcd.org/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Prohibitions/APCD_R67-0-1-2021.pdf (accessed November 2023).

3 SDAPCD. 2019. Rule 20.2*: New Source Review – Non-Major Stationary Sources.* Website: https://www.sdapcd.org/content/dam/sdapcd/documents/rules/current-rules/Rule-20.2.pdf. (accessed December 2023)

4 SDAPCD. 2007. *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality.* March 19. Website: https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/AQ-Guidelines.pdf (accessed December 2023)

The California Emissions Estimator Model version 2022.1 (CalEEMod) computer program was used to calculate emissions from on-site construction equipment and emissions from worker and vehicle trips to the site. This analysis assumes that construction would begin in 2025 and would occur for approximately 14 months. The proposed project would require the demolition of 3,465 cubic yards of soil and the net export of approximately 7,900 cubic yards of soil. In addition, it is anticipated that approximately 8 to 10 construction workers would be on site each day during the construction period, which was included in CalEEMod. This analysis also assumes that the proposed project would comply with SDAPCD Rule 55 measures. Construction equipment would utilize Tier 2 engines, which was also included in CalEEMod. Site preparation, grading, and building activities would involve the use of standard earthmoving equipment such as large excavators, cranes, and other related equipment. All other construction details are not yet known; therefore, default assumptions (e.g., construction equipment, construction worker and truck trips, and fleet activities) from CalEEMod were used.

Operational Emissions

This air quality analysis includes estimating emissions associated with long-term operation of the project. Indirect emissions of criteria pollutants with regional impacts would be emitted by project-generated vehicle trips. In addition, localized air quality impacts (i.e., higher CO concentrations or "hot spots") near intersections or roadway segments in the project vicinity would also potentially occur due to project-generated vehicle trips.

Consistent with SDAPCD guidance[1] for estimating emissions associated with land use development projects, the CalEEMod computer program was used to calculate the long-term operational emissions associated with the project. As previously discussed in the Project Location and Description section, the proposed project would construct a self-storage building of approximately 87,100 sq ft, including a 1,158 sq ft apartment unit. The proposed project analysis was conducted using land use codes *Unrefrigerated Warehouse No-Rail* and *Parking Lot.* Trip generation rates used in CalEEMod for the project were based on the project's trip generation analysis, which identifies that the project would generate approximately 121 average daily trips (ADT). In addition, consistent with the project design plans, this CalEEMod analysis incorporates selections to reflect no natural gas usage during construction and operation of the proposed project. When project-specific data were not available, default assumptions from CalEEMod were used to estimate project emissions.

THRESHOLDS OF SIGNIFICANCE

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse air quality impact if project-generated pollutant emissions would do any of the following:

[1] SDAPCD. 2007. *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality.* March 19. Website: https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/AQ-Guidelines.pdf (accessed December 2023)

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project is in nonattainment under applicable NAAQS or CAAQS;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) affecting a substantial number of people.

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse GHG emission impact if the project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reduction the emissions of GHGs.

Regional Emissions Thresholds

The SDAPCD does not provide quantitative thresholds for determining the significance of construction- or mobile-source-related impacts. However, the district does specify Air Quality Impact Analysis (AQIA) trigger levels for new or modified stationary sources (SDAPCD Rules 20.2 and 20.3). If these incremental levels for stationary sources are exceeded, an AQIA must be performed for the proposed new or modified source. Although these trigger levels do not generally apply to mobile sources or general land development projects, for comparative purposes, these levels may be used to evaluate the increased emissions that would be discharged to the SDAB from proposed land development projects.

For CEQA purposes, the screening criteria can be used as numeric methods to demonstrate that the project's total emissions (e.g., stationary and fugitive emissions, as well as emissions from mobile sources) would not result in a significant impact to air quality. The hourly and yearly screening-level thresholds are most appropriately used in situations where temporary emissions like emergency generators or other stationary sources are proposed as a part of a project. The daily screening-level thresholds are most appropriately used for the standard construction and operational emissions. As such, this analysis will compare the proposed project's emissions to the daily screening-level thresholds in Table C, below.

Table C: SDAPCD Air Quality Significance Thresholds

Air Pollutant	Construction Phase (lbs/day)	Operational Phase (lbs/hour)		
		(lbs/hour)	(lbs/day)	(tons/year)
VOC	75	—	75	13.7
CO	550	100	550	100
NO_X	250	25	250	40
SO_X	250	25	250	40
PM_{10}	100	—	100	15
$PM_{2.5}$	55	—	55	10

Source: Regulation II: Permits; Rule 20.2: New Source Review—Non-Major Sources (San Diego County Air Pollution Control District, January 2019).

CO = carbon monoxide
lbs/ = pounds per
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SDAPCD = San Diego County Air Pollution Control District
SO_X = sulfur oxides
tons/ = tons per
VOC = volatile organic compound

Local Microscale Concentration Standards

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the project vicinity are above or below State and federal CO standards. Because ambient CO levels are below the standards throughout the SDAPCD, a project would be considered to have a significant CO impact if project emissions result in an exceedance of one or more of the 1-hour or 8-hour standards. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20 ppm
- California State 8-hour CO standard of 9 ppm

IMPACT ANALYSIS

Air pollutant emissions associated with the project would occur over the short term from construction activities and over the long term from project-related vehicular trips and due to energy consumption (e.g., electricity and natural gas usage) by the proposed land uses.

Consistency with Applicable Air Quality Plans

The SDAPCD is responsible for developing and implementing the clean air plans for attainment and maintenance of the AAQS in the SDAPCD, specifically the SIP and RAQS. The federal O_3 maintenance plan, which is part of the SIP, was adopted in 2012. The most recent O_3 attainment plan was adopted in 2016. The SIP includes a demonstration that current strategies and tactics will maintain acceptable air quality in the SDAB based on the NAAQS. The RAQS was initially adopted in 1991 and is updated on a triennial basis (most recently in 2022). The RAQS outlines SDAPCD plans and control measures designed to attain the State's air quality standards for O_3. The SIP and RAQS rely on information from CARB and SANDAG, including mobile- and area-source emissions, as well as information regarding projected growth in the county as a whole and the cities in the county, to project future emissions and determine the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile-source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by the County and the cities in the county as part of the development of their general plans.

As discussed above, projects that propose development that is consistent with the growth anticipated by the general plans would be consistent with the RAQS. In the event that a project would propose development that is less dense than anticipated by the General Plan, the project would likewise be consistent with the RAQS. If a project proposes development that is greater than that anticipated by the General Plan and SANDAG growth projections, the project might be in conflict with the RAQS and SIP, and might have a potentially significant impact on air quality.

The project site is currently operating as a self-storage facility. The proposed project would continue to operate as a self-storage facility and would add an 87,100 sq ft self-storage building (approximately 622 storage units) to the existing use. In addition, the proposed project would not require any additional employees on site compared to existing operations. As such, the proposed project would not result in development in excess of that anticipated in the City's General Plan or increases in population/housing growth beyond those contemplated by SANDAG. As such, the proposed project would not increase the population, vehicle trips, or vehicle miles traveled beyond what is anticipated in the RAQS and SIP. Because the proposed project activities and associated vehicle trips are anticipated in local air quality plans, the proposed project would be consistent at a regional level with the underlying growth forecasts in the RAQS and SIP.

Criteria Pollutant Analysis

As demonstrated in Table A, above, San Diego County is currently designated nonattainment for O_3, PM_{10}, and $PM_{2.5}$ standards. The SDAB nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of an AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the SDAPCD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is not necessary. The following analysis assesses the potential project-level air quality impacts associated with construction and operation of the proposed project.

Construction Emissions. During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by demolition, grading, building construction, paving, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO_X, VOCs, directly emitted $PM_{2.5}$ or PM_{10}, and toxic air contaminants such as diesel exhaust particulate matter.

Project construction activities would include demolition, grading, site preparation, building construction, architectural coating, and paving activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and amount of operating equipment. Larger dust particles would settle near the source, whereas fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The SDAPCD has established Rule 55, Fugitive Dust Control, which would require the applicant to implement measures that would reduce the amount of particulate matter generated during the construction period.[1]

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, sulfur oxides (SO_X), NO_X, VOCs, and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idled in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for the project using CalEEMod and are summarized in Table D. (CalEEMod output sheets are provided as an attachment.)

Table D: Short-Term Regional Construction Emissions

Construction Phase	Maximum Daily Regional Pollutant Emissions (lbs/day)							
	VOCs	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Demolition	0.6	19.8	15.0	<0.1	0.3	0.7	0.1	0.6
Site Preparation	0.6	20.3	15.4	<0.1	0.7	0.6	0.1	0.5
Grading	0.7	28.5	18.2	0.1	4.7	0.7	1.9	0.6
Building Construction	0.6	16.9	13.4	<0.1	0.1	0.7	<0.1	0.6
Architectural Coating	3.4	1.1	1.3	<0.1	0.1	0.1	<0.1	0.1
Paving	0.6	10.4	8.7	<0.1	0.1	0.4	<0.1	0.4
Peak Daily Emissions	**4.0**	**28.5**	**18.2**	**0.1**	**5.4**		**2.5**	
SDAPCD Threshold	**75.0**	**250.0**	**550.0**	**250.0**	**100.0**		**55.0**	
Significant?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: Compiled by LSA (August 2024).
Note: Maximum emissions of VOCs and CO occurred during the overlapping building construction and architectural coating phases.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SDAPCD = San Diego Air Pollution Control District
SO_X = sulfur oxides
VOCs = volatile organic compounds

[1] SDAPCD. 2009. Op. cit.

The results shown in Table D indicate the proposed project would not exceed the significance criteria for daily VOC, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$ emissions. Therefore, construction of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under applicable NAAQS or CAAQS.

Operational Air Quality Impacts. Long-term air pollutant emissions associated with operation of the proposed project include emissions from area, energy, and mobile sources. Area-source emissions include architectural coatings, consumer products, and landscaping. Energy-source emissions result from activities in buildings that use natural gas. Mobile-source emissions are from vehicle trips associated with operation of the project.

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement, and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other particulate matter emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Energy-source emissions result from activities in buildings that use natural gas. The quantity of emissions is the product of usage intensity (i.e., the amount of natural gas) and the emission factor of the fuel source. However, the proposed project would not utilize natural gas. Therefore, energy-source emissions would be minimal.

Area-source emissions consist of direct sources of air emissions at the project site, including architectural coatings, consumer products, and use of landscape maintenance equipment.

Long-term operational emissions associated with the proposed project were calculated using CalEEMod. Table E provides the estimated existing emission estimates and the proposed project's estimated operational emissions. (CalEEMod output sheets are provided as an attachment.)

Table E: Project Operational Emissions

Emission Type	Pollutant Emissions					
	VOCs	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Lbs/day						
Mobile Sources	0.5	0.4	3.4	<0.1	0.7	0.2
Area Sources	2.6	<0.1	3.8	<0.1	<0.1	<0.1
Energy Sources	0.0	0.0	0.0	0.0	0.0	0.0
Total Project Emissions	**3.1**	**0.4**	**7.2**	**<0.1**	**0.7**	**0.2**
SDAPCD Threshold	55.0	55.0	550.0	150.0	150.0	55.0
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Tons/year						
Mobile Sources	0.1	0.1	0.6	<0.1	0.1	<0.1
Area Sources	0.4	<0.1	0.3	<0.1	<0.1	<0.1
Energy Sources	0.0	0.0	0.0	0.0	0.0	0.0
Total Project Emissions	**0.5**	**0.1**	**0.9**	**<0.1**	**0.1**	**<0.1**

SDAPCD Threshold	13.7	40.0	100.0	40.0	15.0	10.0
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (August 2024).
Note: Some values may not appear to add correctly due to rounding.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SDAPCD = San Diego Air Pollution Control District
SO_X = sulfur oxides
VOCs = volatile organic compounds

The results shown in Table E indicate the proposed project would not exceed the significance criteria for daily VOC, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$ emissions. Therefore, operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under applicable NAAQS or CAAQS.

Long-Term Microscale (CO Hot Spot) Analysis. Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the vicinity of the proposed project site. Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, a direct function of vehicle idling time and, thus, of traffic flow conditions. CO transport is extremely limited; under normal meteorological conditions, it disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, thereby affecting local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients).

Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the El Cajon Monitoring Station located at 533 First Street (the closest station to the project site monitoring CO) showed a highest recorded 1-hour concentration of 1.5 ppm (the State standard is 20 ppm) and a highest 8-hour concentration of 1.4 ppm (the State standard is 9 ppm) from 2020 to 2022. The highest CO concentrations would normally occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Reduced speeds and vehicular congestion at intersections result in increased CO emissions.

The proposed project is expected to generate 121 average daily trips, with 9 trips occurring in the a.m. peak hour and 15 trips occurring in the p.m. peak hour. Therefore, given the extremely low level of CO concentrations in the project area and the lack of traffic impacts at any intersections, project-related vehicles are not expected to result in CO concentrations exceeding the State or federal CO standards. No CO hot spots would occur, and the project would not result in any project-related impacts on CO concentrations.

Health Risk on Nearby Sensitive Receptors

Sensitive receptors are defined as people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential dwelling units. The project site is surrounded primarily by open space and residential uses. The closest sensitive receptors to the project site include the single-family homes located approximately 20 feet south of the project site.

Construction activities associated with the proposed project would generate airborne particulates and fugitive dust, as well as a small quantity of pollutants associated with the use of construction equipment (e.g., diesel-fueled vehicles and equipment) on a short-term basis. However, construction contractors would be required to implement measures to reduce or eliminate emissions by following SDAPCD Rule 55, Fugitive Dust Control, which would require the applicant to implement measures that would reduce the amount of particulate matter generated during the construction period. In addition, project construction emissions would be well below SDAPCD significance thresholds. Once the project is constructed, the project would not be a source of substantial pollutant emissions. Therefore, sensitive receptors are not expected to be exposed to substantial pollutant concentrations during project construction and operation.

Odors

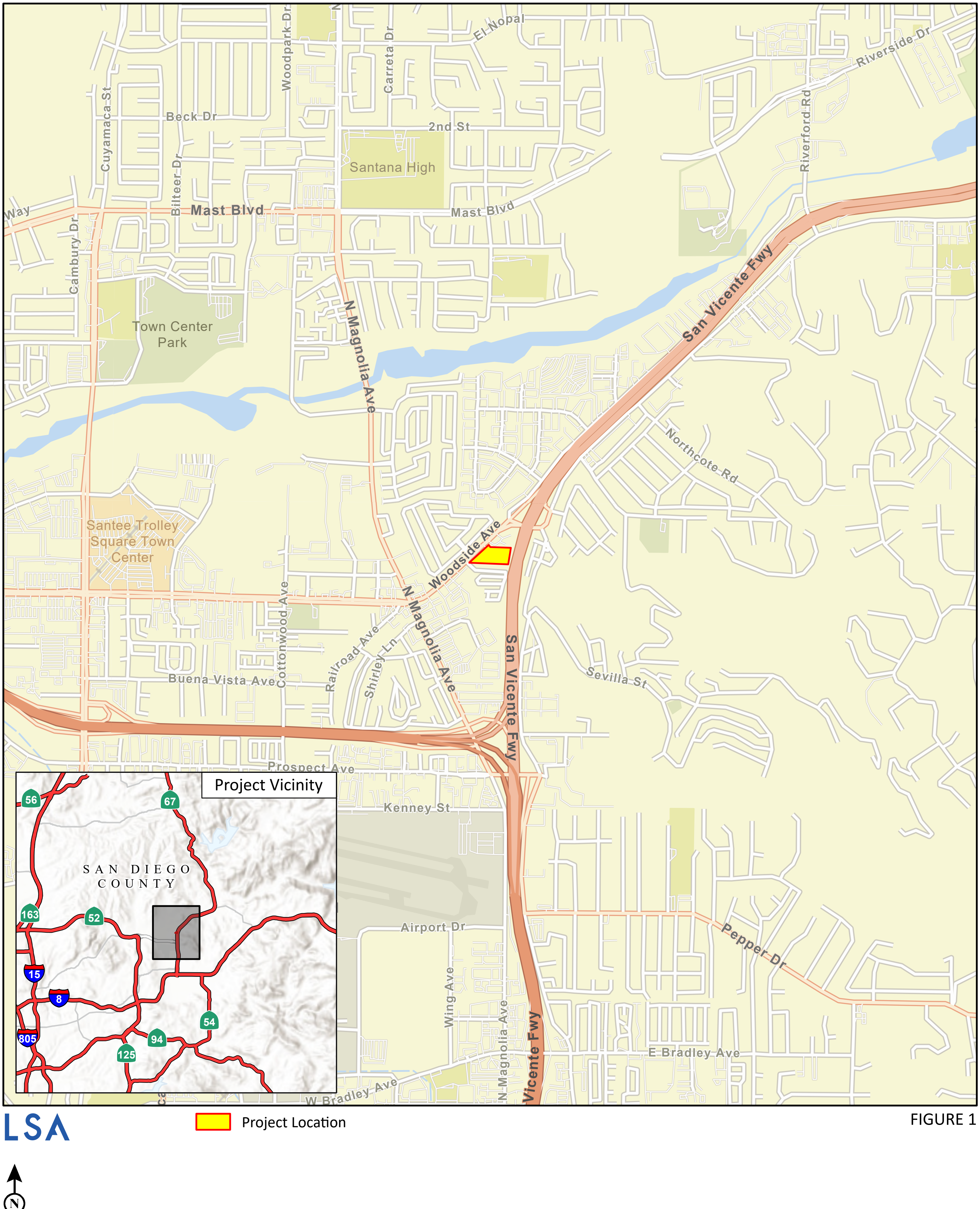
SDAPCD Rules 50, 51, and 55 require the project applicant to include implementation of standard control measures for fugitive dust and diesel equipment emissions. Additionally, operators of off-road vehicles (i.e., self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on road) are required to limit vehicle idling to 5 minutes or less; register and label vehicles in accordance with the CARB Diesel Off-Road Online Reporting System; restrict the inclusion of older vehicles into fleets; and retire, replace, or repower older engines or install Verified Diesel Emission Control Strategies (e.g., exhaust retrofits). Additionally, SDAPCD Rule 55 regarding nuisances states: “A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.”

During project construction, some odors may be present due to diesel exhaust. However, these odors would be temporary and limited to the construction period. In addition, the proposed project would be required to comply with SDAPCD nuisance and odor rules. The proposed project would not include any activities or operations that would generate objectionable odors, and once operational, the project would not be a source of odors. Therefore, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

CONCLUSION

Based on the analysis presented above, construction and operation of the proposed project would not result in the generation of criteria air pollutants that would exceed SDAPCD thresholds of significance. The proposed project is not expected to produce significant emissions that would affect nearby sensitive receptors. The project would also be consistent with the applicable air quality plans. The project would also not result in objectionable odors affecting a substantial number of people.

Attachments: Figure 1: Project Location
Figure 2: Conceptual Site Plan
CalEEMod Output Files



LSA

FIGURE 1

SOURCE: Esri World Street Map (2023)

Santee Self-Storage Project

Regional Location

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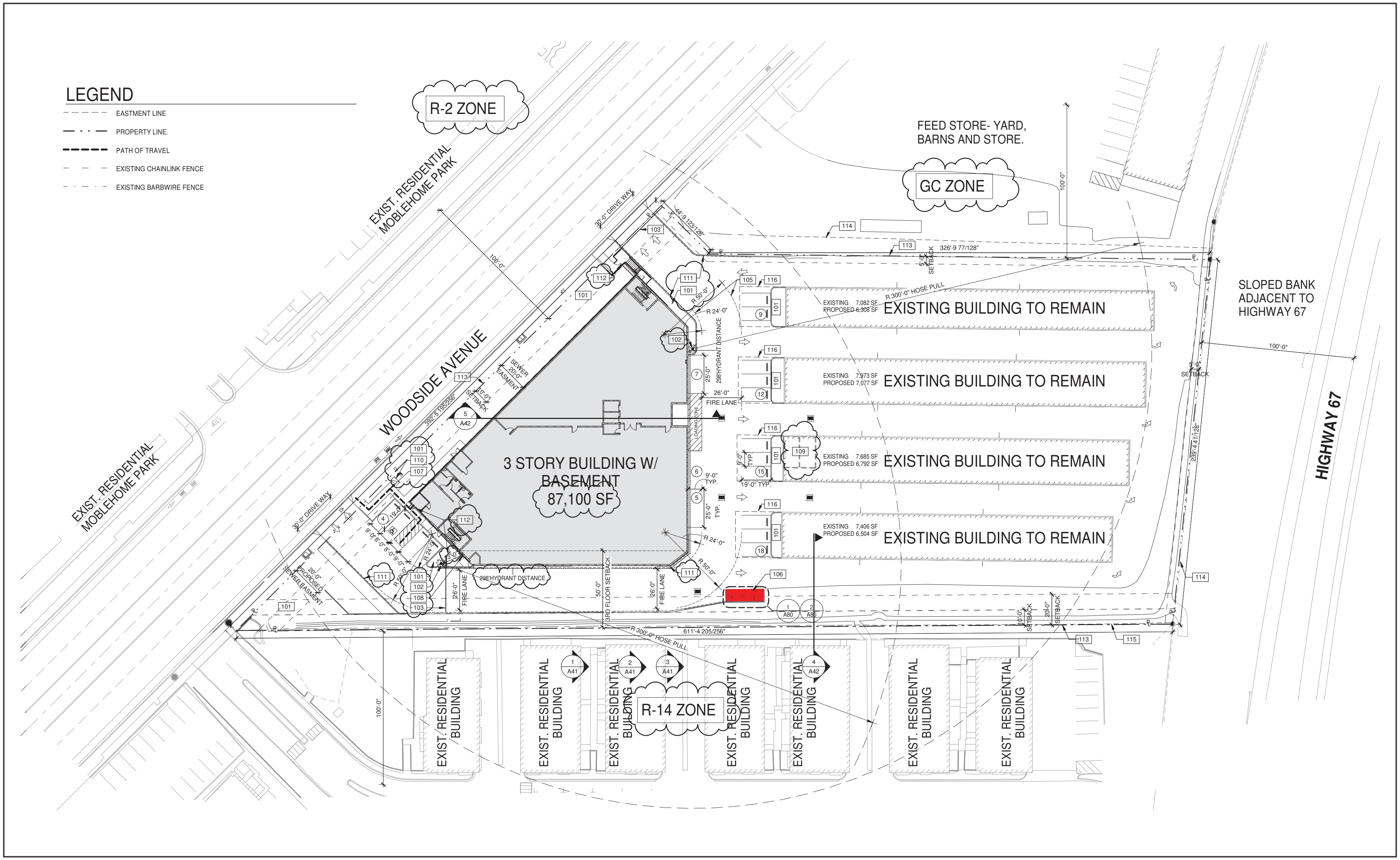

LSA

LEGEND

Trash Enclosure

FIGURE 2

0 50 100
FEET

SOURCE: Ware Malcomb

Santee Self-Storage Project

Conceptual Site Plan

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Santee Self-Storage Project Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Santee Self-Storage Project
Construction Start Date	1/6/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.60
Precipitation (days)	7.60
Location	10835 Woodside Ave, Santee, CA 92071, USA
County	San Diego
City	Santee
Air District	San Diego County APCD
Air Basin	San Diego
TAZ	6529
EDFZ	12
Electric Utility	San Diego Gas & Electric
Gas Utility	San Diego Gas & Electric
App Version	2022.1.1.26

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Unrefrigerated Warehouse-No Rail	87.1	1000sqft	2.00	87,100	13,092	—	—	—

Parking Lot	11.0	Space	0.80	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.04	18.0	14.7	0.03	0.72	0.22	0.94	0.66	0.05	0.72	—	2,756	2,756	0.11	0.06	2,778
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.06	28.5	18.2	0.07	0.72	4.70	5.38	0.66	1.86	2.50	—	9,646	9,646	0.50	1.14	9,999
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.15	12.7	9.92	0.02	0.47	0.26	0.74	0.44	0.08	0.52	—	2,045	2,045	0.09	0.07	2,068
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.21	2.32	1.81	< 0.005	0.09	0.05	0.13	0.08	0.01	0.09	—	339	339	0.01	0.01	342

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2025	4.04	18.0	14.7	0.03	0.72	0.22	0.94	0.66	0.05	0.72	—	2,756	2,756	0.11	0.06	2,778
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.03	28.5	18.2	0.07	0.72	4.70	5.38	0.66	1.86	2.50	—	9,646	9,646	0.50	1.14	9,999
2026	4.06	18.0	14.6	0.03	0.72	0.22	0.94	0.66	0.05	0.72	—	2,738	2,738	0.11	0.06	2,759
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.15	12.7	9.92	0.02	0.47	0.26	0.74	0.44	0.08	0.52	—	2,045	2,045	0.09	0.07	2,068
2026	0.50	1.88	1.55	< 0.005	0.08	0.02	0.10	0.07	0.01	0.08	—	281	281	0.01	0.01	283
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.21	2.32	1.81	< 0.005	0.09	0.05	0.13	0.08	0.01	0.09	—	339	339	0.01	0.01	342
2026	0.09	0.34	0.28	< 0.005	0.01	< 0.005	0.02	0.01	< 0.005	0.01	—	46.5	46.5	< 0.005	< 0.005	46.8

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.08	0.36	7.19	0.01	0.01	0.70	0.72	0.01	0.18	0.19	82.7	1,729	1,811	8.46	0.13	2,065
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.45	0.36	3.22	0.01	0.01	0.70	0.71	0.01	0.18	0.18	82.7	1,676	1,759	8.46	0.13	2,011
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.75	0.37	5.08	0.01	0.01	0.70	0.71	0.01	0.18	0.19	82.7	1,690	1,772	8.46	0.13	2,025
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.50	0.07	0.93	< 0.005	< 0.005	0.13	0.13	< 0.005	0.03	0.03	13.7	280	293	1.40	0.02	335

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.48	0.33	3.40	0.01	0.01	0.70	0.71	0.01	0.18	0.18	—	826	826	0.04	0.03	839
Area	2.60	0.03	3.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	15.6	15.6	< 0.005	< 0.005	15.6
Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	664	664	0.04	< 0.005	666
Water	—	—	—	—	—	—	—	—	—	—	38.6	223	262	3.97	0.10	389
Waste	—	—	—	—	—	—	—	—	—	—	44.1	0.00	44.1	4.41	0.00	154
Total	3.08	0.36	7.19	0.01	0.01	0.70	0.72	0.01	0.18	0.19	82.7	1,729	1,811	8.46	0.13	2,065
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.47	0.36	3.22	0.01	0.01	0.70	0.71	0.01	0.18	0.18	—	789	789	0.04	0.03	801
Area	1.98	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	664	664	0.04	< 0.005	666
Water	—	—	—	—	—	—	—	—	—	—	38.6	223	262	3.97	0.10	389
Waste	—	—	—	—	—	—	—	—	—	—	44.1	0.00	44.1	4.41	0.00	154
Total	2.45	0.36	3.22	0.01	0.01	0.70	0.71	0.01	0.18	0.18	82.7	1,676	1,759	8.46	0.13	2,011
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.46	0.36	3.21	0.01	0.01	0.70	0.71	0.01	0.18	0.18	—	795	795	0.04	0.03	807
Area	2.29	0.02	1.87	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	7.71
Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	664	664	0.04	< 0.005	666
Water	—	—	—	—	—	—	—	—	—	—	38.6	223	262	3.97	0.10	389
Waste	—	—	—	—	—	—	—	—	—	—	44.1	0.00	44.1	4.41	0.00	154
Total	2.75	0.37	5.08	0.01	0.01	0.70	0.71	0.01	0.18	0.19	82.7	1,690	1,772	8.46	0.13	2,025
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.08	0.06	0.59	< 0.005	< 0.005	0.13	0.13	< 0.005	0.03	0.03	—	132	132	0.01	0.01	134
Area	0.42	< 0.005	0.34	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.27	1.27	< 0.005	< 0.005	1.28
Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	110	110	0.01	< 0.005	110
Water	—	—	—	—	—	—	—	—	—	—	6.39	36.9	43.3	0.66	0.02	64.4
Waste	—	—	—	—	—	—	—	—	—	—	7.31	0.00	7.31	0.73	0.00	25.6
Total	0.50	0.07	0.93	< 0.005	< 0.005	0.13	0.13	< 0.005	0.03	0.03	13.7	280	293	1.40	0.02	335

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	19.6	14.6	0.02	0.66	—	0.66	0.61	—	0.61	—	2,494	2,494	0.10	0.02	2,502
Demolition	—	—	—	—	—	0.15	0.15	—	0.02	0.02	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.81	0.60	< 0.005	0.03	—	0.03	0.03	—	0.03	—	102	102	< 0.005	< 0.005	103
Demolition	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.15	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.0	17.0	< 0.005	< 0.005	17.0
Demolition	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.39	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.1	85.1	< 0.005	< 0.005	86.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.26	0.09	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	192	192	0.01	0.03	201
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.53	3.53	< 0.005	< 0.005	3.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.88	7.88	< 0.005	< 0.005	8.26
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.58	0.58	< 0.005	< 0.005	0.59
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.30	1.30	< 0.005	< 0.005	1.37

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	20.3	15.0	0.03	0.55	—	0.55	0.50	—	0.50	—	2,717	2,717	0.11	0.02	2,726
Dust From Material Movement	—	—	—	—	—	0.62	0.62	—	0.07	0.07	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.56	0.41	< 0.005	0.02	—	0.02	0.01	—	0.01	—	74.4	74.4	< 0.005	< 0.005	74.7
Dust From Material Movement	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.10	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.3	12.3	< 0.005	< 0.005	12.4
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.32	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	71.7	71.7	< 0.005	< 0.005	72.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.98	1.98	< 0.005	< 0.005	2.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	0.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	18.8	14.2	0.02	0.55	—	0.55	0.51	—	0.51	—	2,455	2,455	0.10	0.02	2,463

Dust From Material Movement	—	—	—	—	—	2.78	2.78	—	1.34	1.34	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.52	0.39	< 0.005	0.02	—	0.02	0.01	—	0.01	—	67.3	67.3	< 0.005	< 0.005	67.5
Dust From Material Movement	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.09	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.1	11.1	< 0.005	< 0.005	11.2
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.41	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	89.6	89.6	< 0.005	< 0.005	90.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.15	9.64	3.52	0.05	0.13	1.83	1.96	0.13	0.50	0.63	—	7,102	7,102	0.39	1.12	7,445

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.48	2.48	< 0.005	< 0.005	2.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.26	0.10	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	195	195	0.01	0.03	204
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	0.42
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.2	32.2	< 0.005	0.01	33.8

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	16.5	12.8	0.02	0.65	—	0.65	0.60	—	0.60	—	2,201	2,201	0.09	0.02	2,209
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	16.5	12.8	0.02	0.65	—	0.65	0.60	—	0.60	—	2,201	2,201	0.09	0.02	2,209
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	10.1	7.77	0.01	0.40	—	0.40	0.37	—	0.37	—	1,340	1,340	0.05	0.01	1,344

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	1.84	1.42	< 0.005	0.07	—	0.07	0.07	—	0.07	—	222	222	0.01	< 0.005	223
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.46	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	94.9	94.9	< 0.005	< 0.005	96.3
Vendor	0.01	0.33	0.15	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	250	250	0.01	0.04	262
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.41	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	89.6	89.6	< 0.005	< 0.005	90.8
Vendor	0.01	0.35	0.16	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	250	250	0.01	0.04	261
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.25	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	55.0	55.0	< 0.005	< 0.005	55.8
Vendor	0.01	0.21	0.10	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	152	152	0.01	0.02	159
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.11	9.11	< 0.005	< 0.005	9.24
Vendor	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.2	25.2	< 0.005	< 0.005	26.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	16.5	12.8	0.02	0.65	—	0.65	0.60	—	0.60	—	2,201	2,201	0.09	0.02	2,208
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.42	1.10	< 0.005	0.06	—	0.06	0.05	—	0.05	—	190	190	0.01	< 0.005	190
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.26	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.4	31.4	< 0.005	< 0.005	31.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.38	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	87.8	87.8	< 0.005	< 0.005	89.0
Vendor	0.01	0.33	0.15	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	246	246	0.01	0.04	257
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.63	7.63	< 0.005	< 0.005	7.74
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.2	21.2	< 0.005	< 0.005	22.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.26	1.26	< 0.005	< 0.005	1.28
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.50	3.50	< 0.005	< 0.005	3.66
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	10.4	8.32	0.01	0.46	—	0.46	0.43	—	0.43	—	1,244	1,244	0.05	0.01	1,248
Paving	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.28	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.1	34.1	< 0.005	< 0.005	34.2
Paving	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.64	5.64	< 0.005	< 0.005	5.66
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.38	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	87.8	87.8	< 0.005	< 0.005	89.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.43	2.43	< 0.005	< 0.005	2.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	0.41
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.09	0.96	< 0.005	0.07	—	0.07	0.06	—	0.06	—	134	134	0.01	< 0.005	134
Architectural Coatings	3.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.09	0.96	< 0.005	0.07	—	0.07	0.06	—	0.06	—	134	134	0.01	< 0.005	134
Architectural Coatings	3.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.23	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	28.0	28.0	< 0.005	< 0.005	28.1
Architectural Coatings	0.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.63	4.63	< 0.005	< 0.005	4.64
Architectural Coatings	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.37	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	75.9	75.9	< 0.005	< 0.005	77.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.32	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	71.7	71.7	< 0.005	< 0.005	72.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	15.1	15.1	< 0.005	< 0.005	15.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.51	2.51	< 0.005	< 0.005	2.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.15. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.09	0.96	< 0.005	0.07	—	0.07	0.06	—	0.06	—	134	134	0.01	< 0.005	134
Architect ural Coatings	3.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.14	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	17.0	17.0	< 0.005	< 0.005	17.0
Architect ural Coatings	0.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.81	2.81	< 0.005	< 0.005	2.82
Architect ural Coatings	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.31	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	70.2	70.2	< 0.005	< 0.005	71.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.01	9.01	< 0.005	< 0.005	9.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.49	1.49	< 0.005	< 0.005	1.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.48	0.33	3.40	0.01	0.01	0.70	0.71	0.01	0.18	0.18	—	826	826	0.04	0.03	839

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	0.48	0.33	3.40	0.01	0.01	0.70	0.71	0.01	0.18	0.18	—	826	826	0.04	0.03	839
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.47	0.36	3.22	0.01	0.01	0.70	0.71	0.01	0.18	0.18	—	789	789	0.04	0.03	801
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	0.47	0.36	3.22	0.01	0.01	0.70	0.71	0.01	0.18	0.18	—	789	789	0.04	0.03	801
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.08	0.06	0.59	< 0.005	< 0.005	0.13	0.13	< 0.005	0.03	0.03	—	132	132	0.01	0.01	134
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	0.08	0.06	0.59	< 0.005	< 0.005	0.13	0.13	< 0.005	0.03	0.03	—	132	132	0.01	0.01	134

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unrefrigerated Warehouse-No	—	—	—	—	—	—	—	—	—	—	—	615	615	0.03	< 0.005	617
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	49.3	49.3	< 0.005	< 0.005	49.4
Total	—	—	—	—	—	—	—	—	—	—	—	664	664	0.04	< 0.005	666
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	615	615	0.03	< 0.005	617
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	49.3	49.3	< 0.005	< 0.005	49.4
Total	—	—	—	—	—	—	—	—	—	—	—	664	664	0.04	< 0.005	666
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	102	102	0.01	< 0.005	102
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	8.16	8.16	< 0.005	< 0.005	8.18
Total	—	—	—	—	—	—	—	—	—	—	—	110	110	0.01	< 0.005	110

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unrefrigerated	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consume Products	1.87	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.62	0.03	3.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	15.6	15.6	< 0.005	< 0.005	15.6
Total	2.60	0.03	3.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	15.6	15.6	< 0.005	< 0.005	15.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.87	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.98	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	< 0.005	0.34	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.27	1.27	< 0.005	< 0.005	1.28
Total	0.42	< 0.005	0.34	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.27	1.27	< 0.005	< 0.005	1.28

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	38.6	223	262	3.97	0.10	389
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	38.6	223	262	3.97	0.10	389
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	38.6	223	262	3.97	0.10	389
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	38.6	223	262	3.97	0.10	389
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	6.39	36.9	43.3	0.66	0.02	64.4
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	6.39	36.9	43.3	0.66	0.02	64.4

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	44.1	0.00	44.1	4.41	0.00	154
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	44.1	0.00	44.1	4.41	0.00	154
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	44.1	0.00	44.1	4.41	0.00	154
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	44.1	0.00	44.1	4.41	0.00	154
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	7.31	0.00	7.31	0.73	0.00	25.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00

Total	—	—	—	—	—	—	—	—	—	—	7.31	0.00	7.31	0.73	0.00	25.6

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/6/2025	1/24/2025	5.00	15.0	—
Site Preparation	Site Preparation	1/27/2025	2/7/2025	5.00	10.0	—
Grading	Grading	2/10/2025	2/21/2025	5.00	10.0	—
Building Construction	Building Construction	2/24/2025	2/13/2026	5.00	255	—
Paving	Paving	2/16/2026	2/27/2026	5.00	10.0	—
Architectural Coating	Architectural Coating	9/16/2025	3/6/2026	5.00	124	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 2	3.00	8.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Tier 2	1.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Tier 2	1.00	8.00	33.0	0.73
Site Preparation	Graders	Diesel	Tier 2	1.00	8.00	148	0.41
Site Preparation	Scrapers	Diesel	Tier 2	1.00	8.00	423	0.48
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 2	1.00	7.00	84.0	0.37
Grading	Graders	Diesel	Tier 2	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 2	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 2	2.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 2	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 2	2.00	7.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Tier 2	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 2	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 2	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Tier 2	1.00	8.00	84.0	0.37
Paving	Pavers	Diesel	Tier 2	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 2	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 2	2.00	8.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Tier 2	1.00	8.00	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Tier 2	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	9.50	12.0	LDA,LDT1,LDT2
Demolition	Vendor	—	7.63	HHDT,MHDT
Demolition	Hauling	2.67	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	8.00	12.0	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.63	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	12.0	LDA,LDT1,LDT2
Grading	Vendor	—	7.63	HHDT,MHDT
Grading	Hauling	98.8	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	10.0	12.0	LDA,LDT1,LDT2
Building Construction	Vendor	10.0	7.63	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	10.0	12.0	LDA,LDT1,LDT2
Paving	Vendor	—	7.63	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	8.00	12.0	LDA,LDT1,LDT2

Architectural Coating	Vendor	—	7.63	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	130,650	43,550	2,091

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	3,465	—
Site Preparation	0.00	0.00	15.0	0.00	—
Grading	0.00	7,900	10.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.80

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Unrefrigerated Warehouse-No Rail	0.00	0%
Parking Lot	0.80	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	589	0.03	< 0.005
2026	0.00	589	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Unrefrigerated Warehouse-No Rail	120	120	120	43,872	998	998	998	364,142
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	130,650	43,550	2,091

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Unrefrigerated Warehouse-No Rail	381,038	589	0.0330	0.0040	0.00
Parking Lot	30,527	589	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Unrefrigerated Warehouse-No Rail	20,141,875	195,649
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Unrefrigerated Warehouse-No Rail	81.9	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Land Use	2.8 - acre site that would develop a self-storage building of approximately 622 units or 87,100 square feet and 11 parking spaces. Project would also include 13,092 square feet of landscaping.
Construction: Construction Phases	construction is anticipated to begin in 2025 and occur for 14 months
Construction: Off-Road Equipment	default equipment with tier 2 engine
Construction: Trips and VMT	Per the project applicant, approximately 8-10 workers will be on-site during construction each day
Operations: Vehicle Data	Trip rate adjusted based on the trip generation of approximately 121 daily trips
Operations: Energy Use	proposed project would be all-electric

ATTACHMENT E

PRELIMINARY GEOTECHNICAL INVESTIGATION

PRELIMINARY GEOTECHNICAL INVESTIGATION

EXTRA SPACE STORAGE
10835 WOODSIDE AVENUE
SANTEE, CALIFORNIA

GEOCON
INCORPORATED

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR

EXTRA SPACE STORAGE
SALT LAKE CITY, UTAH

SEPTEMBER 22, 2023
PROJECT NO. G3177-42-01

Project No. G3177-42-01
September 22, 2023

Extra Space Storage
2795 E. Cottonwood Parkway, #400
Salt Lake City, UT 84121

Attention: Mr. Clint Kleppe

Subject: PRELIMINARY GEOTECHNICAL INVESTIGATION
EXTRA SPACE STORAGE
10835 WOODSIDE AVENUE
SANTEE, CALIFORNIA

Dear Mr. Kleppe:

In accordance with your request and authorization of our proposal (LG-23253 dated May 25, 2023), we herein submit the results of our preliminary geotechnical investigation for the subject project. We performed our investigation to evaluate the underlying soil and geologic conditions, potential geologic hazards, and to assist in the design of the proposed building and associated improvements.

The accompanying report presents the results of our study and conclusions and recommendations pertaining to geotechnical aspects of the proposed project. The site is suitable for the proposed building and improvements provided the recommendations of this report are incorporated into the design and construction of the planned project.

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

Very truly yours,

GEOCON INCORPORATED

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RCE 83227

Rodney C. Mikesell
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(e-mail) Addressee

TABLE OF CONTENTS

PRELIMINARY GEOTECHNICAL INVESTIGATION

1. PURPOSE AND SCOPE

This report presents the results of our preliminary geotechnical investigation for the proposed Extra Space Storage building to be located in Santee, California (see Vicinity Map).

Vicinity Map

The purpose of this preliminary geotechnical investigation was to evaluate the surface and subsurface soil conditions, general site geology, and to identify geotechnical constraints that could affect development of the property including faulting, liquefaction, and seismic shaking. We provide recommendations for remedial grading, temporary shoring, shallow foundations, concrete slab on grade, concrete flatwork, pavement, and retaining walls.

The scope of this investigation included our review of readily available pertinent geologic literature, field work, performing engineering analyses, and preparing this report.

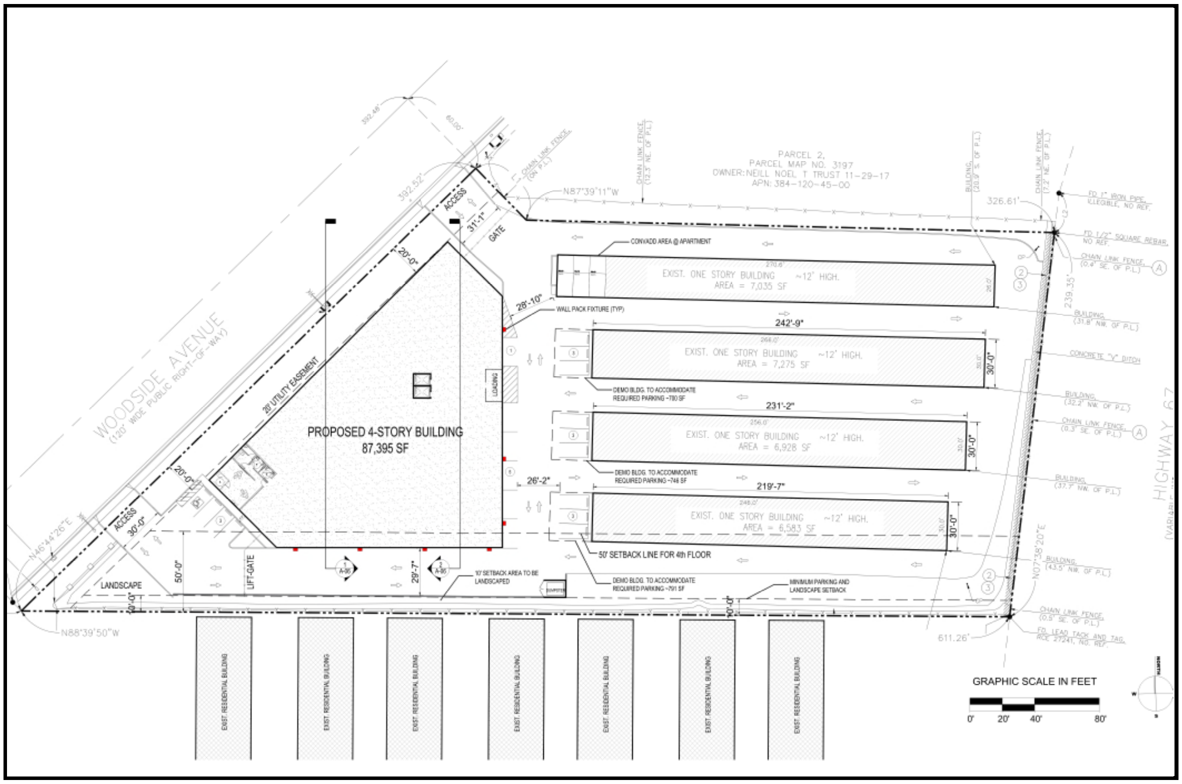
Field work consisted of drilling 4 exploratory borings to a maximum depth of about 18.5 feet; performing two infiltration tests; sampling soil; and performing laboratory tests on selected soil samples. Appendix A presents the boring logs and details of the field investigation. The details of the laboratory testing, and a summary of the test results are shown in Appendix B and on the boring logs in Appendix A. Appendix C presents a summary of our storm-water-management investigation.

2. SITE AND PROJECT DESCRIPTION

The project site is located at 10835 Woodside Avenue in Santee, California. The irregularly shaped property is bound to the west and north by Woodside Avenue and a commercial property, State Route 67 to the east, and residential apartments to the south. A gravel/dirt parking lot occupies the west side of the property in the area of the proposed new building. Existing storage units occupy the eastern side of the site. The property slopes to the north and the east with elevations ranging from about 370 to 395 feet Mean Sea Level (MSL). The figure below shows the current site development.

Current Site Development

We understand the planned improvements will consist of constructing a 4-story structure with a footprint of approximately 87,395 square feet. The building will have a basement level that will extend down to approximately 11 feet below existing grade. The improvements will also include removing portions of the existing structures to accommodate more parking, new drive lanes, and landscaping. We understand storm-water management devices could also be required. The figure below shows the currently proposed improvements.



Proposed Site Plan

Grading plans were not available; however, we expect grading will consist of excavations of up to approximately 11 feet within the building footprint and minor cuts and fills surrounding the building to achieve proposed grades.

The locations, site descriptions, and proposed development are based on our site reconnaissance, review of published geologic literature, field investigations, and discussions with project personnel. If development plans differ from those described herein, Geocon Incorporated should be contacted for review of the plans and possible revisions to this report.

3. SOIL AND GEOLOGIC CONDITIONS

We encountered two surficial soil units consisting of undocumented fill and topsoil, and one formational unit consisting of Cretaceous age granitic rock. The occurrence, distribution, and description of each unit encountered is shown on the Geologic Map, Figure 1 and on the boring logs in Appendix A. The surficial soils and geologic unit are described below.

3.1 Undocumented Fill (unmapped)

We encountered approximately 2.5 feet of undocumented fill in borings B-2 and B-3. The undocumented fill consists of loose to dense, dry to moist, silty to clayey sand with gravel and cobble. We expect the undocumented fill will be removed within the building pad to reach basement grade. The undocumented fill is not suitable in its current condition for the support of foundations or structural fill and should be removed during grading. The undocumented fill can be reused as fill during grading operations provided it is free of roots and debris.

3.2 Topsoil/Sapprolite (unmapped)

Topsoil was encountered in Boring B-1 consisting of dark red brown silty sand to a depth of approximately 7 feet below existing grade. The topsoil is composed of saprolitic granitic rock. The topsoil/saprolite is not suitable to support settlement sensitive improvements and should be removed and replaced as compacted fill within structural improvement areas. We expect the majority of the topsoil will be removed to reach the basement level. However, this should be evaluated once a grading plan is prepared and building pad grades are established. The topsoil/sapprolite can be reused as fill during grading operations provided it is free of roots and debris.

3.3 Granitic Rock (Kgt)

We encountered Cretaceous-age granitic rock (Tan, 2002) in all of the borings to the greatest depth explored. The granitic rock encountered varied from weak to moderately weak, completely to highly weathered rock, and possesses a "very low" to "low" expansion index (expansion index of 50 or less). Based on the exploratory excavations, we expect the proposed grading will not require blasting or rock breaking to a depth of 18.5 feet; however, localized corestones or zones of strong rock should be expected during construction operations. The granitic rock is suitable for support of proposed fill and structural loads. We expect granitic rock will be exposed at the planned basement building pad elevation.

4. GROUNDWATER

We did not encounter groundwater during our field investigation to depths of 18.5 feet below existing grade. We do not expect groundwater will be encountered during construction of the planned improvements. It is not uncommon for groundwater or seepage conditions to develop where none previously existed. Groundwater and seepage are dependent on seasonal precipitation, irrigation, land use, among other factors, and varies as a result. Proper surface drainage will be important to future performance of the project.

5. GEOLOGIC HAZARDS

5.1 Seismic Hazard Map

The City of Santee (2021) shows the property is located in an area assigned as "A", *Granitic Rock.*

5.2 Ground Rupture

The USGS (2016) and Todd (2004) shows that there are no mapped Quaternary faults crossing or trending toward the property. The site is not located within a currently established Alquist-Priolo Earthquake Fault Zone (CEG, 2021a).

There are no active faults, potentially active faults, inactive faults, presumed inactive faults, or activity unknown faults at the site or trending toward the site. The risk associated with ground rupture hazard is low.

5.3 Seismicity

Considerations important in seismic design include frequency and duration of motion and soil conditions underlying the site. Seismic design of structures should be evaluated in accordance with the 2022 California Building Code currently adopted by the local agency. The risk associated with strong seismic ground motion hazard is high; however, the risk is no greater than that for the site vicinity.

5.4 Liquefaction

The risk associated with seismically induced soil liquefaction hazard is low due to the density and age of the underlying geologic units.

5.5 Landslides

No evidence of landsliding was observed during our investigation. Tan (2002) does not map any landslides at the subject site or in areas that could affect the site. The risk associated with ground movement hazard due to landsliding is low.

5.6 Seiches and Tsunamis

The site is not mapped within a State of California tsunami hazard zone (CGS, 2021b). The site is not located near a large body of water. The risk associated with flooding due to tsunami or seiche hazard is low.

5.7 Flooding

The site is not mapped in a Special Flood Hazard Area as defined by FEMA (2020). The risk of inundation hazard due to flooding is low.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 General

6.1.1 We did not encounter soil or geologic conditions during our exploration that would preclude the proposed development, provided the recommendations presented herein are followed and implemented during design and construction. We will provide supplemental recommendations if we observe variable or undesirable conditions during construction, or if the proposed construction will differ from that anticipated herein.

6.1.2 With the exception of possible moderate to strong seismic shaking, we did not observe or know of significant geologic hazards on the site that would adversely affect the proposed project.

6.1.3 The undocumented fill and topsoil is potentially compressible and unsuitable in their present condition to support compacted fill or settlement-sensitive improvements and will require removal and replacement with properly compacted fill. Granitic rock is suitable to support proposed fill and structural loads.

6.1.4 We did not encounter groundwater during our subsurface exploration and we do not expect it to be a constraint to project development; however, seepage within the existing soils may be encountered during the grading operations, especially during the rainy seasons.

6.1.5 Proper drainage should be maintained to preserve the engineering properties of the soil. Recommendations for site drainage are provided herein.

6.1.6 Infiltration on the property is considered infeasible as discussed in Appendix C.

6.1.7 We do not expect the planned development will destabilize or result in the settlement of adjacent properties if properly constructed.

6.2 Excavation and Soil Characteristics

6.2.1 Excavation of the in-situ soil should be possible with moderate to heavy effort using conventional heavy-duty equipment. Excavation of the granitic rock may require very heavy effort and may generate oversized material. Oversized rock (rocks greater than 12-inches in dimension) may be generated during excavation of granitic rock that will require special handling or disposal. The grading and improvement contractors should review this report and evaluate the proper equipment to use for the planned excavations.

6.2.2 The soil encountered in the field investigation is considered both "non-expansive" (Expansion Index [EI] of 20 or less)) and "expansive" (EI greater than 20) as defined by 2022 California Building Code (CBC) Section 1803.5.3. We expect most of the soil encountered possess a "very low" to "low" expansion potential (EI of 50 or less) in accordance with ASTM D 4829. Table 6.2 presents soil classifications based on the expansion index.

TABLE 6.2
EXPANSION CLASSIFICATION BASED ON EXPANSION INDEX

Expansion Index (EI)	ASTM D 4829 Expansion Classification	2022 CBC Expansion Classification
0 – 20	Very Low	Non-Expansive
21 – 50	Low	Expansive
51 – 90	Medium	
91 – 130	High	
Greater Than 130	Very High	

6.2.3 We performed a laboratory test on a sample of the site soil to evaluate the percentage of water-soluble sulfate content. Appendix B presents test results, which indicate the on-site soils at the location tested possesses "S0" sulfate exposure to concrete structures as defined by 2022 CBC Section 1904 and ACI 318. The presence of water-soluble sulfates is not a visually discernible characteristic; therefore, other soil samples from the site could yield different concentrations. Over time, landscaping activities (i.e., addition of fertilizers and other additives) may affect the water-soluble sulfate concentration.

6.2.4 Geocon Incorporated does not practice in the field of corrosion engineering; therefore, further evaluation by a corrosion engineer may be needed if improvements susceptible to corrosion are planned.

6.3 Grading

6.3.1 Grading should be performed in accordance with the recommendations provided in this report; the Recommended Grading Specifications contained in Appendix D; and the City of Santee grading ordinance. Geocon Incorporated should observe the grading operations on a full-time basis and provide testing during the fill placement.

6.3.2 A preconstruction conference should be held at the site with the agency inspector, developer, grading and underground contractors, civil engineer, and geotechnical engineer in attendance. Special soil handling and the grading plans can be discussed at that time.

6.3.3 Site preparation should begin with the removal of deleterious material, debris, vegetation, asphalt concrete, and concrete. The depth of vegetation removal should be such that soil exposed in cut areas or to be used as fill is relatively free of organic matter. Material generated during stripping and/or site demolition should be exported from the site. Asphalt and concrete should not be mixed with the fill.

6.3.4 Abandoned foundations and buried utilities should be removed and the resultant depressions and trenches backfilled with properly compacted soil.

6.3.5 We expect the excavation to reach the basement level for the proposed building will expose granitic rock. However, since building pad grade has not yet been established, once grading plans have been developed, we should evaluate if additional removals below building pad grade will be required.

6.3.6 Where granitic rock is exposed at basement grade, no additional removal below pad elevation will be required. Where undocumented fill or topsoil is present below building pad grade, the undocumented fill or topsoil should be removed to competent granitic rock and replaced with properly compacted fill.

6.3.7 If grading results in a cut to fill transition in the building pad, the building pad should be undercut to a depth of at least 3 feet below pad grade or 1-foot below the building footings, whichever is deeper. The undercut area should then be replaced with compacted fill. The undercut should extend to at least 5 feet beyond the building footprint, where practical. As an alternative to undercutting, building footings can be deepened to extend through compacted fill to bear entirely on the underlying granitic rock.

6.3.8 In structural improvement area outside of the proposed building pad, undocumented fill and topsoil should be removed to the granitic rock and replaced as compacted fill. The excavations should extend at least 3 feet laterally outside of the improvement area.

6.3.9 Table 6.3.1 provides a summary of the remedial grading recommendations.

TABLE 6.3.1
SUMMARY OF REMEDIAL GRADING RECOMMENDATIONS

Area	Remedial Grading Excavation Requirements
Building Pad	Remove undocumented fill and toposoil to expose granitic rock. Undercut building pad if grading results in a cut to fill transition, or alternatively, extend building footings through the fill to bear entirely on the granitic rock.
Site Development	Remove undocumented fill and topsoil to granitic rock and replace with properly compacted fill
Lateral Grading Limits	5 Feet Outside of Building Pad
	3 Feet Outside of Improvement Areas
Exposed Bottoms of Excavations	Scarify Upper 12 Inches

6.3.10 A representative of Geocon should be on-site during excavations to evaluate the limits of the remedial grading.

6.3.11 The site soils are suitable for use as fill provided that they are free from vegetation, debris, and other deleterious material. Prior to placing fill the removal bottom should be scarified, moisture conditioned, and recompacted. Fill should be placed in layers no greater than 6 to 8 inches in loose thickness and no thicker than will allow for adequate bonding and compaction. Fill, including backfill and scarified ground surfaces, should be compacted to a dry density of at least 90 percent of the laboratory maximum dry density near to slightly above optimum moisture content in accordance with ASTM Test Procedure D 1557. Fill soil placed below optimum moisture content will require moisture conditioning prior to placing additional fill. The upper 12 inches of subgrade soil underlying pavement should be compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content shortly before paving operations.

6.3.12 Imported fill, if needed, should consist of the characteristics presented in Table 6.3.2. Geocon Incorporated should be provided with samples of the proposed import soil to perform laboratory testing prior to importation to the site.

TABLE 6.3.2
SUMMARY OF IMPORT FILL RECOMMENDATIONS

Soil Characteristic	Values
Expansion Potential	"Very Low" to "Low" (Expansion Index of 50 or less)
Particle Size	Maximum Dimension Less Than 3 Inches
	Generally Free of Debris

6.4 Subdrains

6.4.1 With the exception of retaining wall drains, we do not expect the installation of other subdrains.

6.5 Excavation Slopes, Shoring and Tiebacks

6.5.1 The recommendations included herein are provided for stable excavations. It is the contractor's responsibility to ensure all excavations, temporary slopes, and trenches are properly constructed and maintained in accordance with applicable OSHA guidelines in order to maintain safety and the stability of the excavations and adjacent improvements. These excavation sidewalls should not be allowed to become saturated or to dry out. Surcharge loads should not be permitted within a distance equal to the height of the excavation from the edge of the excavation. The edge of the excavation should be a minimum of 15 feet from the edge of existing improvements.

6.5.2 Geocon Incorporated is not responsible for site safety and the stability of the proposed excavations. The stability of an excavation is dependent on the design and construction of the shoring system and site conditions and should be reviewed by the contractor's competent person in accordance with OSHA guidelines.

6.5.3 The design of temporary shoring is governed by soil and groundwater conditions, and by the depth and width of the excavated area. Continuous support of the excavation face can be provided by a system of soldier piles and wood lagging or other applicable techniques. Excavations exceeding 15 feet may require tieback anchors or internal bracing to provide additional wall restraint.

6.5.4 The condition of existing improvements around the perimeter of the planned excavation should be documented prior to the start of shoring and excavation work. Special attention should be given to documenting existing cracks or other indications of differential settlement within these adjacent structures, pavements, and other improvements. Settlement-sensitive, underground utilities should be videotaped prior to construction to verify the integrity of pipes. Monitoring points should be established indicating location and elevation around the excavation and on existing structures. These points should be monitored at appropriate intervals during excavation work and on a monthly basis thereafter. Inclinometers should be installed and monitored behind any shoring sections that will be advanced deeper than 30 feet below the existing ground surface.

6.5.5 In general, ground conditions are suited for soldier-pile-and-tieback anchor wall construction techniques; however, gravel and cobble could be encountered that could be difficult to drill.

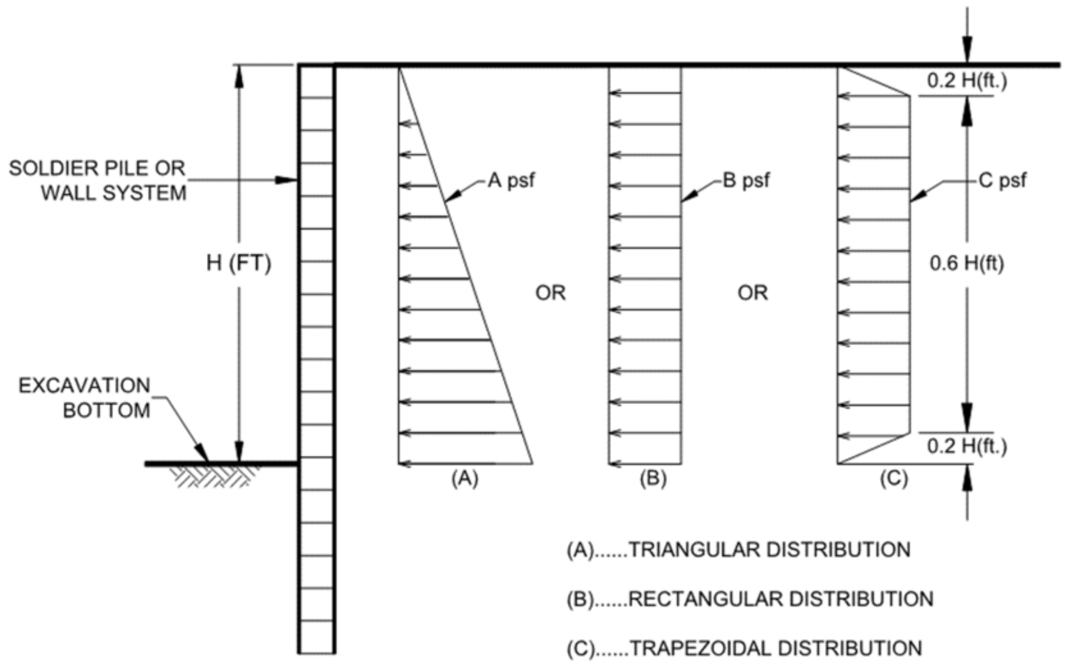
If cohesionless sand layers are encountered, raveling could result along the unsupported portions of excavations.

6.5.6 Temporary shoring having a level backfill surface should be designed using a lateral pressure envelope acting on the back of the shoring as presented in Table 6.5.1. The distributions are shown on the Active Pressures for Temporary Shoring. Cantilevered shoring should use the triangular distribution and multi-braced systems (such as tieback anchors and rakers) should use the trapezoidal or rectangular distributions. The project shoring engineer should determine the applicable soil distribution for the design of the temporary shoring system. Additional lateral earth pressure due to the surcharging effects from construction equipment, sloping backfill, planned stockpiles, adjacent structures and/or traffic loads should be considered, where appropriate, during design of the shoring system. Geocon Incorporated should be contacted to provide revised lateral earth pressures if permanent shoring is required.

TABLE 6.5.1
SUMMARY OF TEMPORARY SHORING WALL RECOMMENDATIONS

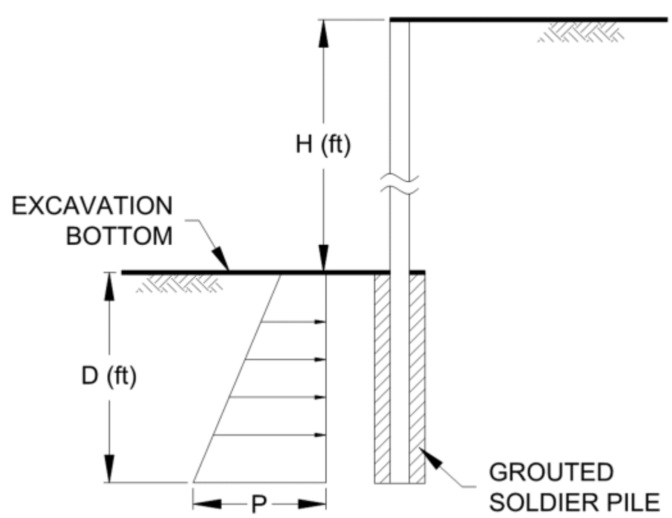
Parameter	Value
Triangular Distribution, A	21H psf
Rectangular Distribution, B	14H psf
Trapezoidal Distribution, C	17H psf
Passive Pressure, P	350D + 500 psf
Effective Zone Angle, E	31 degrees
Maximum Design Lateral Movement	1 Inch
Maximum Design Vertical Movement	½ Inch
Maximum Design Retained Height, H	15 Feet

H equals the height of the retaining portion of the wall in feet
D equals the embedment depth of the retaining wall in feet



Active Pressures on Temporary Shoring

6.5.7 The passive resistance can be assumed to act over a width of three pile diameters. Typically, soldier piles are embedded a minimum of 0.5 times the maximum height of the excavation (this depth is to include footing excavations) if tieback anchors are not employed. The project shoring engineer should determine the actual embedment depth.



Passive Pressures on Temporary Shoring

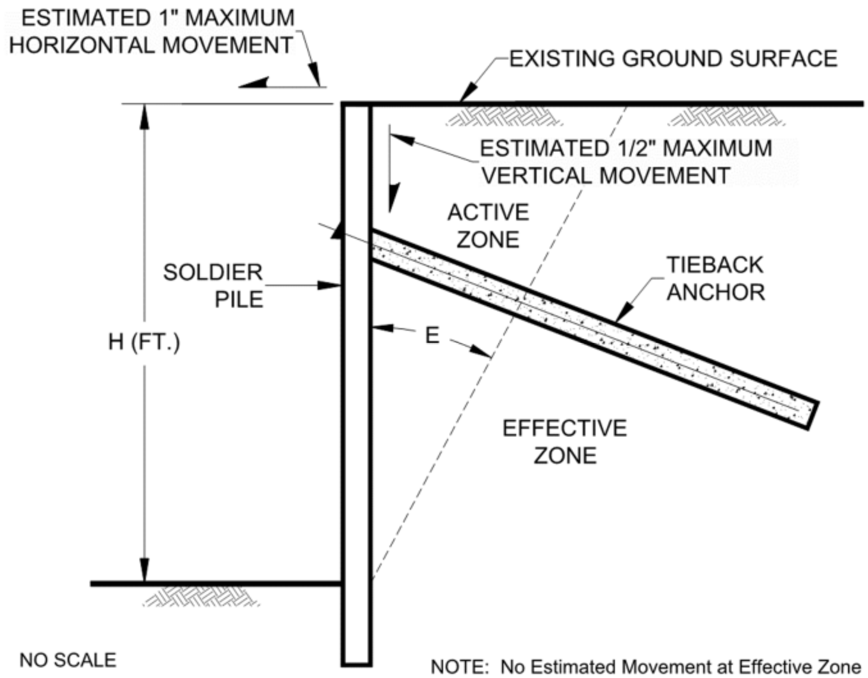
6.5.8 We should observe the drilled shafts for the soldier piles prior to the placement of the pile to check that the exposed soil conditions are similar to those expected and that the excavation have been extended to the appropriate bearing strata and design depths. If unexpected soil conditions are encountered, modifications could be required.

6.5.9 Lateral movement of shoring is associated with vertical ground settlement outside of the excavation. The shoring system should be designed to limit horizontal movement to a maximum of 1 inch. The amount of horizontal deflection can be assumed to be essentially zero along the Active Zone and Effective Zone boundary. The magnitude of movement for intermediate depths and distances from the shoring wall can be linearly interpolated. Horizontal movements of the shoring wall should be accurately monitored and recorded during excavation and shoring construction.

6.5.10 Survey points should be established at the top of the pile on at least 20 percent of the soldier piles. An additional point located at an intermediate point between the top of the pile and the base of the excavation should be monitored on at least 20 percent of the piles if tieback anchors will be used. These points should be monitored on appropriate intervals during excavation work and until the permanent support system is constructed.

6.5.11 The project civil engineer should provide the location, depth, and pipe type of the underground utilities to the shoring engineer to help select the shoring type and shoring design.

6.5.12 Tieback anchors employed in shoring should be designed such that anchors fully penetrate the Active Zone behind the shoring. The Active Zone can be considered the wedge of soil from the face of the shoring to a plane extending upward from the base of the excavation as shown on the Active Zone Detail. Normally, tieback anchors are contractor-designed and installed, and there are numerous anchor construction methods available. Non-shrinkage grout should be used for the construction of the tieback anchors.



Active Zone Detail

6.5.13 Experience has shown that the use of pressure grouting during formation of the bonded portion of the anchor will increase the soil-grout bond stress. A pressure grouting tube should be installed during the construction of the tieback. Post grouting should be performed if adequate capacity cannot be obtained by other construction methods.

6.5.14 Anchor capacity is a function of construction method, depth of anchor, batter, diameter of the bonded section and the length of the bonded section. Anchor capacity should be evaluated using the strength parameters shown in Table 6.5.2.

TABLE 6.5.2
SOIL STRENGTH PARAMETERS FOR TEMPORARY SHORING

Description	Soil Density (pcf)	Cohesion (psf)	Friction Angle (Degrees)
Undocumented Fill/Topsoil	120	100	26
Granitic Rock	130	400	36

6.5.15 Grout should only be placed in the tieback anchor's bonded section prior to testing. Tieback anchors should be proof-tested to at least 130 percent of the anchor's design working load. Following a successful proof test, the tieback anchors should be locked off at 80 percent of the allowable working load. Tieback anchor test failure criteria should be established in project plans and specifications. The tieback anchor test failure criteria should be based upon a maximum allowable displacement at 130 percent of the anchor's working load (anchor creep) and a maximum residual displacement within the anchor following stressing. Tieback anchor stressing should only be conducted after sufficient hydration has occurred within the grout. Tieback anchors that fail to meet project specified test criteria should be replaced or additional anchors should be constructed.

6.5.16 Lagging should keep pace with excavation. The excavation should not be advanced deeper than three feet below the bottom of lagging at any time or as determined by the shoring contractor. These unlagged gaps should only be allowed to stand for short periods of time in order to decrease the probability of soil instability and should never be unsupported overnight. Proper backfilling should be conducted when necessary between the back of lagging and excavation sidewalls to reduce sloughing in this zone and all voids should be filled by the end of each day. It may be necessary to backfill with slurry to help prevent future lateral movement behind the supported excavation. Further, the excavation should not be advanced further than four feet below a row of tiebacks prior to those tiebacks being proof tested and locked off unless otherwise specific by the shoring engineer. Surface sloughing may occur during the excavation process.

6.5.17 If tieback anchors are employed, an accurate survey of existing utilities and other underground structures adjacent to the shoring wall should be conducted. The survey should include both locations and depths of existing utilities. Locations of anchors should be adjusted as necessary during the design and construction process to accommodate the existing and proposed utilities.

6.5.18 Tieback anchors within the City right of way should be de-tensioned and removed.

6.6 Seismic Design Criteria – 2022 California Building Code

6.6.1 Table 6.6.1 summarizes site-specific design criteria obtained from the 2022 California Building Code (CBC; Based on the 2021 International Building Code [IBC] and ASCE 7-16), Chapter 16 Structural Design, Section 1613 Earthquake Loads. We used SEAOC (2019) to calculate the seismic design parameters. The short spectral response uses a period of 0.2 second. We evaluated the Site Class based on the discussion in Section 1613.2.2 of the 2022 CBC and Table 20.3-1 of ASCE 7-16. The values presented herein are for the risk-targeted maximum considered earthquake (MCE_R).

TABLE 6.6.1
2022 CBC SEISMIC DESIGN PARAMETERS

Parameter	Value	2022 CBC Reference
Site Class	C	Section 1613.2.2
MCE_R Ground Motion Spectral Response Acceleration – Class B (short), S_S	0.766g	Figure 1613.2.1(1)
MCE_R Ground Motion Spectral Response Acceleration – Class B (1 sec), S_1	0.282g	Figure 1613.2.1(3)
Site Coefficient, F_A	1.2	Table 1613.2.3(1)
Site Coefficient, F_V	1.5	Table 1613.2.3(2)
Site Class Modified MCE_R Spectral Response Acceleration (short), S_{MS}	0.919g	Section 1613.2.3 (Eqn 16-20)
Site Class Modified MCE_R Spectral Response Acceleration – (1 sec), S_{M1}	0.423g	Section 1613.2.3 (Eqn 16-21)
5% Damped Design Spectral Response Acceleration (short), S_{DS}	0.613g	Section 1613.2.4 (Eqn 16-22)
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.282g	Section 1613.2.4 (Eqn 16-23)

*See following paragraph.

6.6.2 Table 6.6.2 presents the mapped maximum considered geometric mean (MCE_G) seismic design parameters for projects located in Seismic Design Categories of D through F in accordance with ASCE 7-16.

TABLE 6.6.2
ASCE 7-16 PEAK GROUND ACCELERATION

Parameter	Value	ASCE 7-16 Reference
Mapped MCE_G Peak Ground Acceleration, PGA	0.328g	Figure 22-9
Site Coefficient, F_{PGA}	1.2	Table 11.8-1
Site Class Modified MCE_G Peak Ground Acceleration, PGA_M	0.394g	Section 11.8.3 (Eqn 11.8-1)

6.6.3 Conformance to the criteria in Tables 6.6.1 and 6.6.2 for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur in the event of a large earthquake. The primary goal of seismic design is to protect life, not to avoid all damage, since such design may be economically prohibitive.

6.6.4 The values presented herein assume a Risk Category of II and result in a Seismic Design Category D. The project structural engineer and architect should evaluate the appropriate Risk Category and Seismic Design Category for the planned structures. Table 6.6.3 presents a summary of the risk categories in accordance with ASCE 7-16.

TABLE 6.6.3
ASCE 7-16 RISK CATEGORIES

Risk Category	Building Use	Examples
I	Low risk to Human Life at Failure	Barn, Storage Shelter
II	Nominal Risk to Human Life at Failure (Buildings Not Designated as I, III or IV)	Residential, Commercial and Industrial Buildings
III	Substantial Risk to Human Life at Failure	Theaters, Lecture Halls, Dining Halls, Schools, Prisons, Small Healthcare Facilities, Infrastructure Plants, Storage for Explosives/Toxins
IV	Essential Facilities	Hazardous Material Facilities, Hospitals, Fire and Rescue, Emergency Shelters, Police Stations, Power Stations, Aviation Control Facilities, National Defense, Water Storage

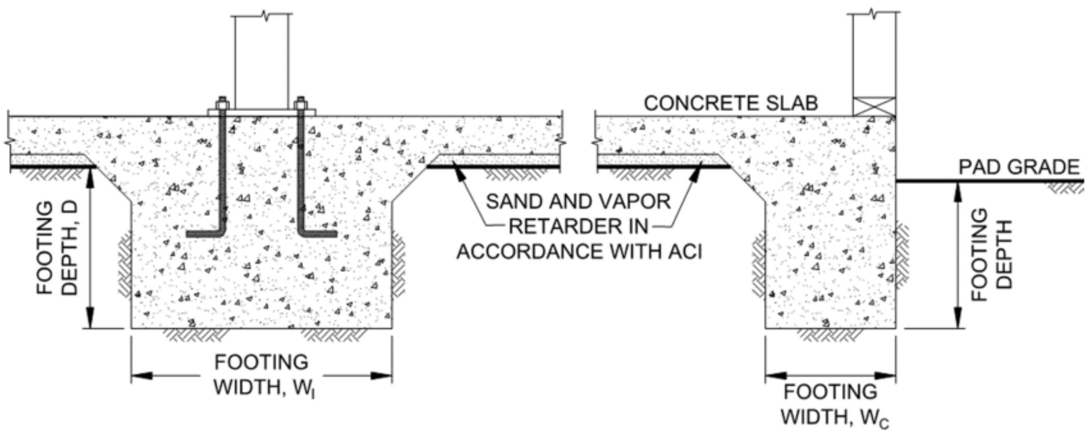
6.7 Shallow Foundations

6.7.1 The proposed structure can be supported on a shallow foundation system founded entirely on granitic rock. Foundations for the structure should consist of continuous strip footings and/or isolated spread footings. Table 6.7 provides a summary of the foundation design recommendations.

TABLE 6.7
SUMMARY OF FOUNDATION RECOMMENDATIONS

Parameter	Value
Minimum Continuous Foundation Width, W_C	12 inches
Minimum Isolated Foundation Width, W_I	24 inches
Minimum Foundation Depth, D	24 Inches Below Lowest Adjacent Grade
Minimum Steel Reinforcement	4 No. 5 Bars, 2 at the Top and 2 at the Bottom
Allowable Bearing Capacity (Compacted Fill)	2,500 psf
Allowable Bearing Capacity (Granitic Rock)	8,000 psf
Bearing Capacity Increase	500 psf per Foot of Depth
	300 psf per Foot of Width
Maximum Allowable Bearing Capacity (Compacted fill)	4,000 psf
Maximum Allowable Bearing Capacity (Granitic Rock)	10,000 psf
Estimated Total Settlement	1-Inch
Estimated Differential Settlement	½ Inch in 40 Feet
Footing Size Used for Settlement	10-Foot Square
Design Expansion Index	50 or less

6.7.2 The foundations should be embedded in accordance with the recommendations herein and the Wall/Column Footing Dimension Detail. The embedment depths should be measured from the lowest adjacent pad grade for both interior and exterior footings. Footings should be deepened such that the bottom outside edge of the footing is at least 7 feet horizontally from the face of the slope.



Wall/Column Footing Dimension Detail

6.7.3 The bearing capacity values presented herein are for dead plus live loads and may be increased by one-third when considering transient loads due to wind or seismic forces.

6.7.4 Overexcavation of the footings and replacement with 3-sack cement-slurry back to footing bottom can be used in areas where compacted fill exists below building footings.

6.7.5 We should observe the foundation excavations prior to the placement of reinforcing steel to check that the exposed soil conditions are similar to those expected and that they have been extended to the appropriate bearing strata. Foundation modifications may be required if unexpected soil conditions are encountered.

6.7.6 Geocon Incorporated should be consulted to provide additional design parameters as required by the structural engineer.

6.8 Concrete Slabs On Grade

6.8.1 Concrete slabs on grade for the structures should be constructed in accordance with Table 6.8.

TABLE 6.8
MINIMUM CONCRETE-SLAB-ON-GRADE RECOMMENDATIONS

Parameter	Value
Minimum Concrete Slab Thickness	5 inches
Minimum Concrete Reinforcement	No. 3 Bars 18 Inches on Center, Both Directions
Typical Slab Underlayment	3 to 4 Inches of Sand/Gravel/Base
Design Expansion Index	50 or less

6.8.2 A vapor retarder should underlie slabs that could receive moisture-sensitive floor coverings or be used to store moisture-sensitive materials. The vapor retarder design should be consistent with the guidelines presented in the American Concrete Institute's (ACI) *Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials* (ACI 302.2R-06). The membrane should be installed in a manner that prevents puncture in accordance with manufacturer's recommendations and ASTM requirements. The project architect or developer should specify the vapor retarder used based on the type of floor covering that will be installed and if the structure will possess a humidity-controlled environment.

6.8.3 The project foundation engineer, architect, or developer should determine the thickness of the slab bedding. It is common to have 3 to 4 inches of sand in the southern California region. We should be contacted to provide recommendations if the bedding sand is thicker than 6 inches.

6.8.4 The foundation design engineer should provide appropriate concrete mix design criteria and curing measures to assure proper curing of the slab. The foundation design engineer should present the concrete mix design and proper curing methods on the foundation plans. It is critical that the foundation contractor understands and follows the specifications presented on the foundation plans.

6.8.5 Concrete slabs should be provided with adequate crack-control joints, construction joints and expansion joints. American Concrete Institute (ACI) guidelines should be used to establish crack-control spacing. Crack-control joints should be spaced at intervals no greater than 12 feet. Additional reinforcement, concrete admixtures, and closer crack-control-joint spacing should be considered where bare-concrete finished floors are planned.

6.8.6 Subgrade presaturation is not deemed necessary prior to placing concrete; however, the exposed foundation and slab subgrade soil should be moisturized to maintain a moist condition as would be expected in any such concrete placement.

6.8.7 The concrete-slab-on-grade recommendations are based on soil support characteristics only. The project structural engineer should evaluate the structural requirements of the concrete slabs for supporting expected loads.

6.8.8 The recommendations of this report are intended to reduce potential cracking of slabs due to expansive soil (if present), differential settlement of existing soil or fill soil with varying thicknesses, however, even with the incorporation of the recommendations presented herein, foundations, stucco walls, and slabs-on-grade could still exhibit cracking due to soil movement and concrete shrinkage. The occurrence of concrete-shrinkage cracks is independent of the supporting soil characteristics. Their occurrence may be controlled by limiting the slump of the concrete, proper concrete placement and curing, and by the placement of crack control joints at periodic intervals, in particular, where re-entrant slab corners occur.

6.9 Exterior Concrete Flatwork

6.9.1 Exterior concrete flatwork not subject to vehicular traffic should be constructed in accordance with the recommendations presented in Table 6.9. The recommended concrete reinforcement would help reduce potential cracking.

TABLE 6.9
MINIMUM CONCRETE FLATWORK RECOMMENDATIONS

Expansion Index, EI	Minimum Steel Reinforcement* Options	Minimum Thickness
EI $\leq$ 90	6x6-W2.9/W2.9 (6x6-6/6) welded wire mesh	4 Inches
	No. 3 Bars 18 inches on center, Both Directions	

*In excess of 8 feet square.

6.9.2 The subgrade soil should be properly moisturized and compacted prior to the placement of steel and concrete. The subgrade soil should be compacted to a dry density of at least 90 percent of the laboratory maximum dry density near to slightly above optimum moisture content in accordance with ASTM D 1557.

6.9.3 Even with the incorporation of the recommendations presented in this report, the exterior concrete flatwork could experience uplift due to expansive soil. Flatwork should be structurally connected to the curbs, where practical, to reduce potential offsets between the curbs and the flatwork.

6.9.4 Concrete flatwork should be provided with crack-control joints to control shrinkage cracking. American Concrete Institute (ACI) guidelines should be taken into consideration when establishing crack-control spacing.

6.9.5 Subgrade soil for exterior slabs not subjected to vehicle loads should be compacted in accordance with criteria presented in the grading section prior to concrete placement. Subgrade soil should be properly compacted and the moisture content of subgrade soil should be verified prior to placing concrete. Base materials will not be required below concrete improvements.

6.9.6 Where exterior flatwork abuts the structure at entrant or exit points, the exterior slab should be dowelled into the structure's foundation stem wall. This recommendation is intended to reduce potential differential elevations resulting from settlement or heave of the flatwork. Dowelling details should be designed by the project structural engineer.

6.9.7 The recommendations presented herein are intended to reduce potential cracking of exterior slabs resulting from differential movement. Even with the incorporation of the recommendations presented herein, slabs on grade could still crack. The occurrence of concrete shrinkage cracks is independent of the soil-support characteristics. Their occurrence could be controlled by limiting the slump of the concrete, the use of crack-control joints, and proper concrete placement and curing. Crack-control joints should be spaced at intervals no greater than 12 feet. Portland Concrete Association (PCA) and American Concrete Institute (ACI) provide guidelines for proper concrete mix, construction, and curing practices, and should be incorporated into project construction.

6.10 Retaining Walls

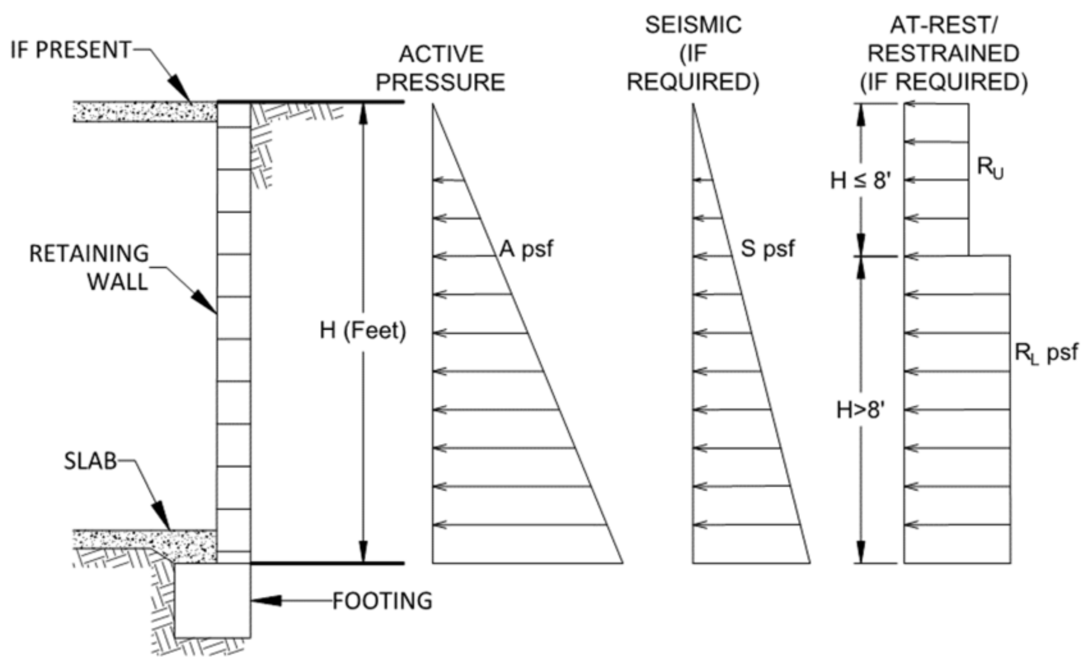
6.10.1 Retaining walls should be designed using the values presented in Table 6.10.1. Soil with an expansion index (EI) of greater than 50 should not be used as backfill behind retaining walls.

TABLE 6.10.1
RETAINING WALL DESIGN RECOMMENDATIONS

Parameter	Value
Active Soil Pressure, A (Fluid Density, Level Backfill)	35 pcf
Active Soil Pressure, A (Fluid Density, 2:1 Sloping Backfill)	50 pcf
Seismic Pressure, S	13H psf
At-Rest/Restrained Walls Additional Uniform Pressure, R_U (0 to 8 Feet High)	7H psf
At-Rest/Restrained Walls Additional Uniform Pressure, R_L (8+ Feet High)	13H psf
Expected Expansion Index for the Subject Property	EI≤50

H equals the height of the retaining portion of the wall

6.10.2 The project retaining walls should be designed as shown in the Retaining Wall Loading Diagram.



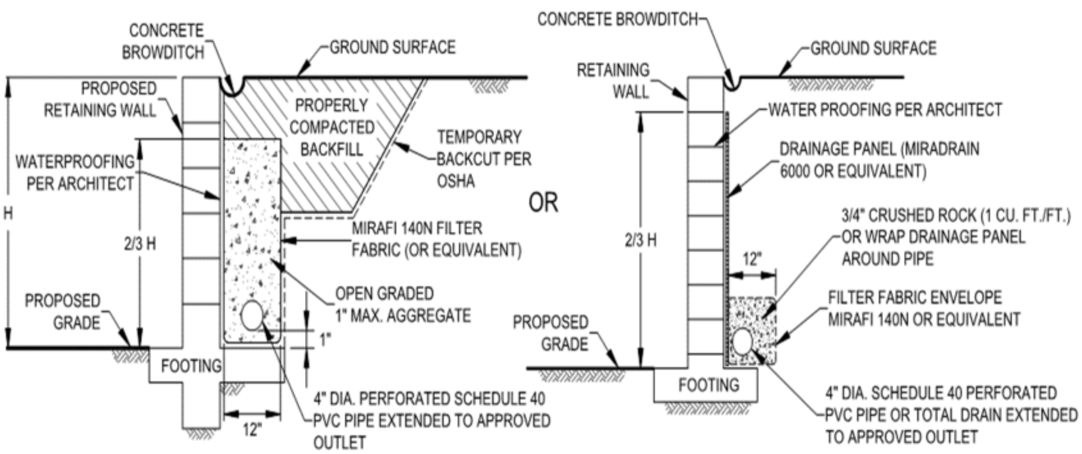
Retaining Wall Loading Diagram

6.10.3 Unrestrained walls are those that are allowed to rotate more than 0.001H (where H equals the height of the retaining portion of the wall) at the top of the wall. Where walls are restrained from movement at the top (at-rest condition), an additional uniform pressure should be applied to the wall. For retaining walls subject to vehicular loads within a horizontal distance equal to two-thirds the wall height, a surcharge equivalent to 2 feet of fill soil should be added to the upper 10 feet of the retaining wall.

6.10.4 The structural engineer should determine the Seismic Design Category for the project in accordance with Section 1613 of the 2022 CBC or Section 11.6 of ASCE 7-16. For structures assigned to Seismic Design Category of D, E, or F, retaining walls that support more than 6 feet of backfill should be designed with seismic lateral pressure in accordance with Section 1803.5.12 of the 2022 CBC. The seismic load is dependent on the retained height where H is the height of the wall, in feet, and the calculated loads result in pounds per square foot (psf) exerted at the base of the wall and zero at the top of the wall.

6.10.5 It is not necessary to consider active pressure on the keyway.

6.10.6 Drainage openings through the base of the wall should not be used where the seepage could be a nuisance or otherwise adversely affect the property adjacent to the base of the wall. The recommendations herein assume a properly compacted granular (EI of 90 or less) free-draining backfill material with no hydrostatic forces or imposed surcharge load. The retaining wall should be properly drained as shown in the Typical Retaining Wall Drainage Detail. If conditions different than those described are expected, or if specific drainage details are desired, Geocon Incorporated should be contacted for additional recommendations.



Typical Retaining Wall Drainage Detail

6.10.7 In general, wall foundations should be designed in accordance with Table 6.10.2. The proximity of the foundation to the top of a slope steeper than 3:1 could impact the allowable soil bearing pressure. Therefore, retaining wall foundations should be deepened such that the bottom outside edge of the footing is at least 7 feet horizontally from the face of the slope.

TABLE 6.10.2
SUMMARY OF RETAINING WALL FOUNDATION RECOMMENDATIONS

Parameter	Value
Minimum Retaining Wall Foundation Width	12 inches
Minimum Retaining Wall Foundation Depth	12 Inches
Minimum Concrete Reinforcement	Per Structural Engineer
Maximum Allowable Bearing Capacity	2,500 psf
Estimated Total Settlement	1 Inch
Estimated Differential Settlement	½ Inch in 40 Feet

6.10.8 The recommendations presented herein are generally applicable to the design of rigid concrete or masonry retaining walls. In the event that other types of walls (such as mechanically stabilized earth [MSE] walls, soil nail walls, or soldier pile walls) are planned, Geocon Incorporated should be consulted for additional recommendations.

6.10.9 Unrestrained walls will move laterally when backfilled and loading is applied. The amount of lateral deflection is dependent on the wall height, the type of soil used for backfill, and loads acting on the wall. The retaining walls and improvements above the retaining walls should be designed to incorporate an appropriate amount of lateral deflection as determined by the structural engineer.

6.10.10 Soil contemplated for use as retaining wall backfill, including import materials, should be identified in the field prior to backfill. At that time, Geocon Incorporated should obtain samples for laboratory testing to evaluate its suitability. Modified lateral earth pressures may be necessary if the backfill soil does not meet the required expansion index or shear strength. City or regional standard wall designs, if used, are based on a specific active lateral earth pressure and/or soil friction angle. In this regard, on-site soil to be used as backfill may or may not meet the values for standard wall designs. Geocon Incorporated should be consulted to assess the suitability of the on-site soil for use as wall backfill if standard wall designs will be used.

6.11 Lateral Loading

6.11.1 Table 6.11 should be used to help design the proposed structures and improvements to resist lateral loads for the design of footings or shear keys. The allowable passive pressure assumes a horizontal surface extending at least 5 feet, or three times the surface generating the passive pressure, whichever is greater. The upper 12 inches of material in areas not protected by floor slabs or pavement should not be included in the design for passive resistance.

TABLE 6.11
SUMMARY OF LATERAL LOAD DESIGN RECOMMENDATIONS

Parameter	Value
Passive Pressure Fluid Density	350 pcf
Coefficient of Friction (Concrete and Soil)	0.35
Coefficient of Friction (Along Vapor Barrier)	0.2 to 0.25*

*Per manufacturer's recommendations.

6.11.2 The passive and frictional resistant loads can be combined for design purposes. The lateral passive pressures may be increased by one-third when considering transient loads due to wind or seismic forces.

6.12 Preliminary Pavement Recommendations

6.12.1 We calculated the flexible pavement sections in general conformance with the *Caltrans Method of Flexible Pavement Design* (Highway Design Manual, Section 608.4) using an estimated Traffic Index (TI) of 5.0, 5.5, 6.0, and 7.0 for parking stalls, driveways, medium truck traffic areas, and heavy truck traffic areas, respectively. The project civil engineer should review the pavement designations to determine appropriate locations for pavement thickness. The final pavement sections should be based on the R-Value of the subgrade soil encountered at final subgrade elevation. We have assumed an R-Value of 30 and 78 for the subgrade soil and base materials, respectively, for the purposes of this preliminary analysis. Table 6.12.1 presents the preliminary flexible pavement sections.

TABLE 6.12.1
PRELIMINARY FLEXIBLE PAVEMENT SECTION

Location	Assumed Traffic Index	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
Parking Stalls for Automobiles and Light-Duty Vehicles	5.0	3	5.5
Driveways for Automobiles and Light-Duty Vehicles	5.5	3	7
Medium Truck Traffic Areas	6.0	3.5	7.5
Driveways for Heavy Truck Traffic	7.0	4	9.5

6.12.2 Prior to placing base materials, the upper 12 inches of the subgrade soil should be scarified, moisture conditioned as necessary, and recompacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content as determined by ASTM D 1557. Similarly, the base material should be compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Asphalt concrete should be compacted to a density of at least 95 percent of the laboratory Hveem density in accordance with ASTM D 2726.

6.12.3 Aggregate base should conform to Section 26-1.02B of the *Standard Specifications for The State of California Department of Transportation (Caltrans)* with a ¾-inch maximum size aggregate. Asphalt concrete should conform to Section 203-6 of the *Standard Specifications for Public Works Construction (Greenbook)*.

6.12.4 A rigid Portland cement concrete (PCC) pavement section should be placed in roadway aprons and cross gutters. We calculated the rigid pavement section in general conformance with the procedure recommended by the American Concrete Institute report ACI 330-21 *Commercial Concrete Parking Lots and Site Paving Design and Construction – Guide.* Table 6.12.2 provides the traffic categories and design parameters used for the calculations for 20-year design life.

TABLE 6.12.2
TRAFFIC CATEGORIES

Traffic Category	Description	Reliability (%)	Slabs Cracked at End of Design Life (%)
A	Car Parking Areas and Access Lanes	60	15
D	Truck Traffic and Fire Lanes	75	15

6.12.5 We used the parameters presented in Table 6.12.3 to calculate the pavement design sections. We should be contacted to provide updated design sections, if necessary.

TABLE 6.13.3
RIGID PAVEMENT DESIGN PARAMETERS

Design Parameter	Design Value
Modulus of Subgrade Reaction, k	150 pci
Modulus of Rupture for Concrete, M_R	500 psi
Concrete Compressive Strength	3,000 psi
Concrete Modulus of Elasticity, E	3,150,000 psi

6.12.6 Based on the criteria presented herein, the PCC pavement sections should have a minimum thickness as presented in Table 6.13.4.

TABLE 6.13.4
RIGID VEHICULAR PAVEMENT RECOMMENDATIONS

Traffic Category	Trucks Per Day	Portland Cement Concrete, T (Inches)
A = Car Parking Areas and Access Lanes	10	5
D = Heavy Duty Trucks/Fire Lane	50	6.5

6.12.7 The PCC vehicular pavement should be placed over subgrade soil that is compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content.

6.12.8 The trash-truck pad should be large enough such that all wheels are on the concrete pad during the loading operations.

6.12.9 Adequate joint spacing based on ACI guidelines should be incorporated into the design and construction of the rigid pavement.

6.12.10 Reinforcing steel will not be necessary within the concrete pavement.

6.12.11 Perimeter curbs adjacent to landscape areas should extend at least 6 inches below the bottom of the pavement aggregate base. In lieu of extending the perimeter curb, an impermeable liner should be installed.

6.12.12 Concrete flatwork should be structurally connected to the curbs to help reduce potential offsets between the curbs and the flatwork.

6.12.13 To control the location and spread of concrete shrinkage cracks, crack-control joints should be included in the design of the concrete-pavement slab. Crack-control joints should be sealed with an appropriate sealant to prevent the migration of water through the control joint to the subgrade materials. The depth of the crack-control joints should be in accordance with ACI guidelines.

6.12.14 Construction joints should be provided at the interface between areas of concrete placed at different times during construction. The project structural engineer should provide details for load transfer.

6.12.15 Concrete curb/gutter should be placed on soil subgrade compacted to a dry density of at least 90 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Cross-gutters should be placed on subgrade soil compacted to a dry density of at least

95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Base materials should not be placed below the curb/gutter, or cross-gutters so water is not able to migrate from the adjacent parkways to the pavement sections. Where flatwork is located directly adjacent to the curb/gutter, the concrete flatwork should be structurally connected to the curbs to help reduce the potential for offsets between the curbs and the flatwork.

6.13 Site Drainage and Moisture Protection

6.13.1 Adequate site drainage is critical to reduce the potential for differential soil movement, erosion and subsurface seepage. Under no circumstances should water be allowed to pond adjacent to footings. The site should be graded and maintained such that surface drainage is directed away from structures in accordance with 2022 CBC 1804.4 or other applicable standards. In addition, surface drainage should be directed away from the top of slopes into swales or other controlled drainage devices. Roof and pavement drainage should be directed into conduits that carry runoff away from the proposed structure.

6.13.2 In the case of basement walls or building walls retaining landscaping areas, a water-proofing system should be used on the wall and joints, and a Miradrain drainage panel (or similar) should be placed over the waterproofing. The project architect or civil engineer should provide detailed specifications on the plans for all waterproofing and drainage.

6.13.3 Underground utilities should be leak free. Utility and irrigation lines should be checked periodically for leaks, and detected leaks should be repaired promptly. Detrimental soil movement could occur if water is allowed to infiltrate the soil for prolonged periods of time.

6.13.4 Landscaping planters adjacent to paved areas are not advised due to potential surface or irrigation water infiltration into the pavement subgrade and base courses. Area drains to collect excess irrigation water and transmit it to drainage structures or impervious above-grade planter boxes can be used. In addition, where landscaping is planned adjacent to the pavement, construction of a cutoff wall along the edge of the pavement that extends at least 6 inches below the bottom of the base material should be considered.

6.13.5 We have prepared a storm water management investigation and it is included in Appendix C herein.

6.14 Grading and Foundation Plan Review

6.14.1 Geocon Incorporated should review the grading and building foundation plans for the project prior to final design submittal to evaluate if additional analyses and/or recommendations are required.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

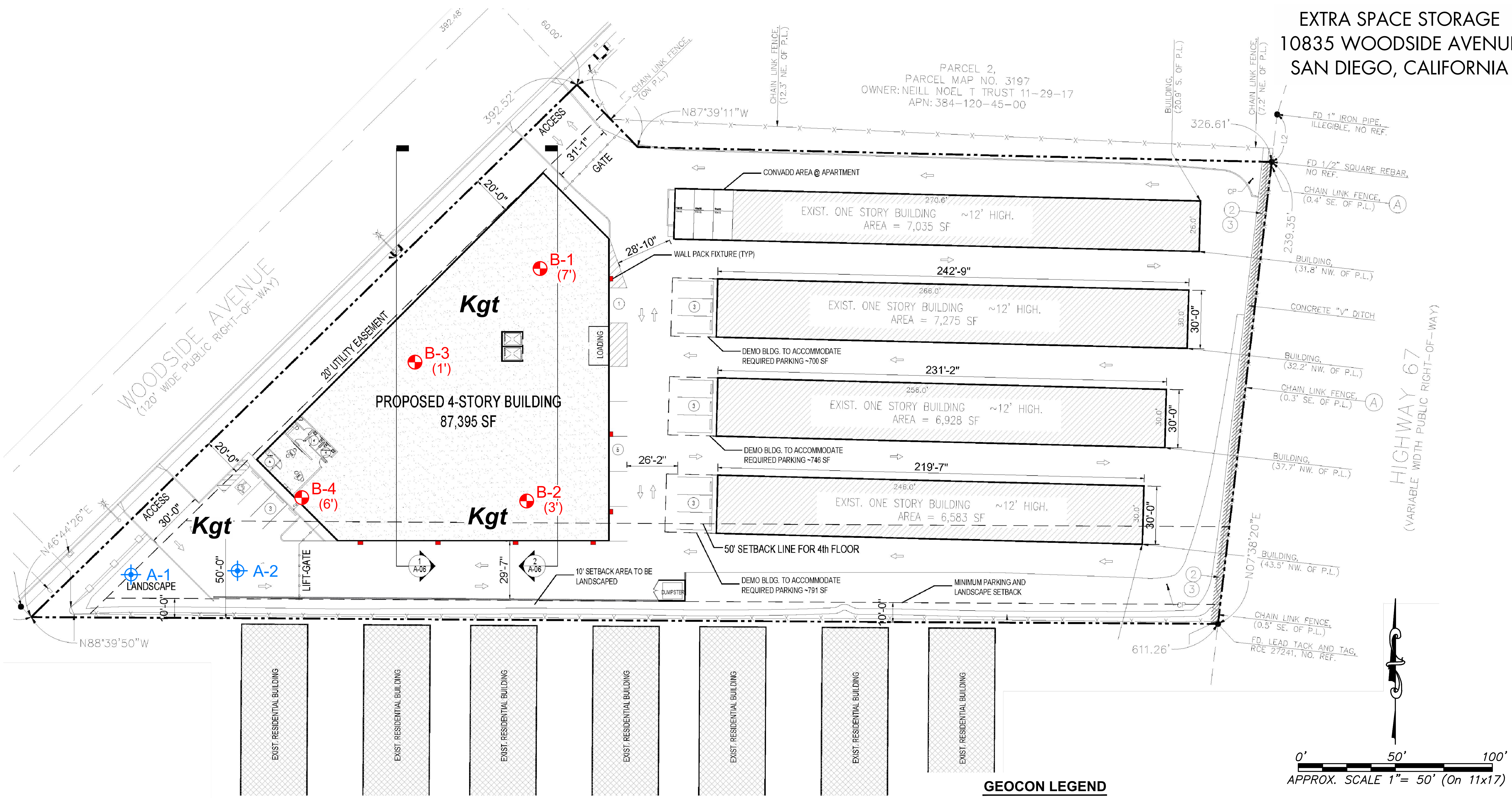
1. The firm that performed the geotechnical investigation for the project should be retained to provide testing and observation services during construction to provide continuity of geotechnical interpretation and to check that the recommendations presented for geotechnical aspects of site development are incorporated during site grading, construction of improvements, and excavation of foundations. If another geotechnical firm is selected to perform the testing and observation services during construction operations, that firm should prepare a letter indicating their intent to assume the responsibilities of project geotechnical engineer of record. A copy of the letter should be provided to the regulatory agency for their records. In addition, that firm should provide revised recommendations concerning the geotechnical aspects of the proposed development, or a written acknowledgement of their concurrence with the recommendations presented in our report. They should also perform additional analyses deemed necessary to assume the role of Geotechnical Engineer of Record.

2. The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon Incorporated should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the scope of services provided by Geocon Incorporated.

3. This report is issued with the understanding that it is the responsibility of the owner or his representative to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

4. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they be due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

EXTRA SPACE STORAGE
10835 WOODSIDE AVENUE
SAN DIEGO, CALIFORNIA



GEOCON LEGEND

Kgt ....GRANITIC ROCK

B-4 ....APPROX. LOCATION OF BORING

A-2 ....APPROX. LOCATION OF INFILTRATION TEST

(6') ....ESTIMATED DEPTH OF REMEDIAL GRADING (In Feet)

GEOLOGIC MAP

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PROJECT NO. G3177 - 42 - 01
FIGURE 1
DATE 09 - 22 - 2023

APPENDIX A

APPENDIX A

FIELD INVESTIGATION

We performed the drilling operations on August 17, 2023. The approximate locations of the exploratory borings are shown on the Geologic Map, Figure 1 and the boring logs are presented in this appendix.

The borings were drilled to a maximum depth of approximately 18.5 feet below existing grade using an Ingersoll Rand A-300 drill rig equipped with hollow-stem augers. The infiltration-test borings were drilled to depths of approximately 4 to 4.5 feet.

We obtained soil samples from the borings using a California-Modified, split-spoon sampler. We also collected bulk soil samples from the auger spoils. The type of sample is noted on the boring logs.

The penetration resistances shown on the boring logs are shown in terms of blows per foot. The blow-count values are not N-values as adjustments have not been applied.

We visually examined, classified, and logged the soil encountered in the borings in general accordance with American Society for Testing and Materials (ASTM) practice for Description and Identification of Soils (Visual-Manual Procedure D 2488). The logs depict the soil and geologic conditions observed and the depth at which samples were obtained.

BORING B 1

ELEV. (MSL.) **378'** DATE COMPLETED **08-17-2023**

EQUIPMENT **IR A-300** BY: **K. OVERTURF**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	2" **ROCK**			
					TOPSOIL/SAPROLITE Loose, damp, dark reddish brown, Silty, fine to coarse SAND; saprolite granitic rock			
2	B1-1					7		
4								
	B1-2					11	115.3	9.7
6								
8					**GRANITIC ROCK (Kgt)** Highly weathered, grayish brown, weak GRANITIC ROCK; excavates as Silty, fine SAND			
10	B1-3					50/5"	119.4	4.2
12								
14								
	B1-4				-Becomes moderately weak; no recovery	50/1"		
16								
18	B1-5				-No recovery	50/1"		

BORING TERMINATED AT 18.5 FEET
No groundwater encountered
Backfilled with cuttings

Figure A-1,
Log of Boring B 1, Page 1 of 1

G3177-42-01 BORING LOGS.GPJ

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

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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BORING B 2

ELEV. (MSL.) **382'** DATE COMPLETED **08-17-2023**

EQUIPMENT **IR A-300** BY: **K. OVERTURF**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	B2-1			SM	2" **ROCK**			
					UNDOCUMENTED FILL (Qudf) Loose, dry, light grayish brown, Silty, fine to coarse SAND			
2	B2-2					50/4"		
4					**GRANITIC ROCK (Kgt)** Highly weathered, light brown to gray, weak GRANITIC ROCK; excavates as Silty, fine SAND			
	B2-3					50/5"		
6								
8								
10	B2-4				-Becomes moderately weak; poor recovery due to rock	50/1"		
12								
14								
	B2-5				-Becomes mottled white and black, micaceous	50/3"		
16								
18	B2-6				-No recovery	50/2"		

BORING TERMINATED AT 18.5 FEET
No groundwater encountered
Backfilled with cuttings

Figure A-2,
Log of Boring B 2, Page 1 of 1

G3177-42-01 BORING LOGS.GPJ

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

GEOCON

BORING B 3

ELEV. (MSL.) **379'** DATE COMPLETED **08-17-2023**

EQUIPMENT **IR A-300** BY: **K. OVERTURF**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					2" **ROCK/GRAVEL**			
				SC	**GRANITIC ROCK (Kgt)** Highly weathered, light brown to gray, weak GRANITIC ROCK; excavates as Silty, fine SAND			
2	B3-1					72/11.5"		
4					-Hard drilling			
	B3-2					86/10"		
6								
8								
10	B3-3				-Becomes moderately weak; no recovery	50/1"		
12								
14	B3-4					84/9"		
16								
18	B3-5				-No recovery	50/1"		

BORING TERMINATED AT 18.5 FEET
No groundwater encountered
Backfilled with cuttings

Figure A-3,
Log of Boring B 3, Page 1 of 1

G3177-42-01 BORING LOGS.GPJ

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

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. G3177-42-01

BORING B 4

ELEV. (MSL.) 380' DATE COMPLETED 08-17-2023

EQUIPMENT IR A-300 BY: K. OVERTURF

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SC	2" **ROCK/GRAVEL**			
					UNDOCUMENTED FILL (Qudf) Loose, damp, dark brown, Clayey, fine to coarse SAND			
2	B4-1			SC	**TOPSOIL/SAPPROLITE** Very dense, moist, dark reddish brown, Clayey, fine to coarse SAND; micaceous	88/9"		
4	B4-2					50/3"		
6					**GRANITIC ROCK (Kgt)** Highly weathered, light brown to gray, weak GRANITIC ROCK; excavates as Silty, fine SAND			
10	B4-3				-No recovery	50/2"		
	B4-4							
14	B4-5				-No recovery	50/1"		
18	B4-6					50/1"		

BORING TERMINATED AT 18.5 FEET
No groundwater encountered
Backfilled with cuttings

Figure A-4,
Log of Boring B 4, Page 1 of 1

G3177-42-01 BORING LOGS.GPJ

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

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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APPENDIX B

APPENDIX B

LABORATORY TESTING

We performed laboratory tests in accordance with generally accepted test methods of the American Society for Testing and Materials (ASTM) or other suggested procedures. We tested selected soil samples for in-place dry density/moisture content, maximum density/optimum moisture content, expansion index, water-soluble sulfate, pH and resistivity, chloride, R-Value, consolidation, and direct shear strength. The results of our laboratory tests are presented herein. The in-place dry density and moisture content of the samples tested are presented on the boring logs in Appendix A.

SUMMARY OF LABORATORY MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT TEST RESULTS ASTM D 1557

Sample No.	Description	Maximum Dry Density (pcf)	Optimum Moisture Content (% dry wt.)
B2-1	Grayish brown, Silty SAND; trace gravel	137.9	8.2

SUMMARY OF LABORATORY EXPANSION INDEX TEST RESULTS ASTM D 4829

Sample No.	Moisture Content (%)		Dry Density (pcf)	Expansion Index	2022 CBC Expansion Classification	ASTM Soil Expansion Classification
	Before Test	After Test				
B4-4	6.0	11.5	126.3	0	Non-Expansive	Very Low

SUMMARY OF LABORATORY WATER-SOLUBLE SULFATE TEST RESULTS CALIFORNIA TEST NO. 417

Sample No.	Depth (feet)	Geologic Unit	Water-Soluble Sulfate (%)	ACI 318 Sulfate Exposure
B4-4	10-15	Kgt	0.001	S0

SUMMARY OF LABORATORY CHLORIDE TEST RESULTS AASHTO T 291

Sample No.	Depth (Feet)	Geologic Unit	Chloride Ion Content (ppm)	Chloride Ion Content (%)
B4-4	10-15	Kgt	81	0.008

SUMMARY OF LABORATORY POTENTIAL OF HYDROGEN (PH) AND RESISTIVITY TEST RESULTS CALIFORNIA TEST NO. 643

Sample No.	Depth (Feet)	Geologic Unit	pH	Minimum Resistivity (ohm-centimeters)
B4-4	10-15	Kgr	7.7	6,100

SUMMARY OF LABORATORY RESISTANCE VALUE (R-VALUE) TEST RESULTS ASTM D 2844

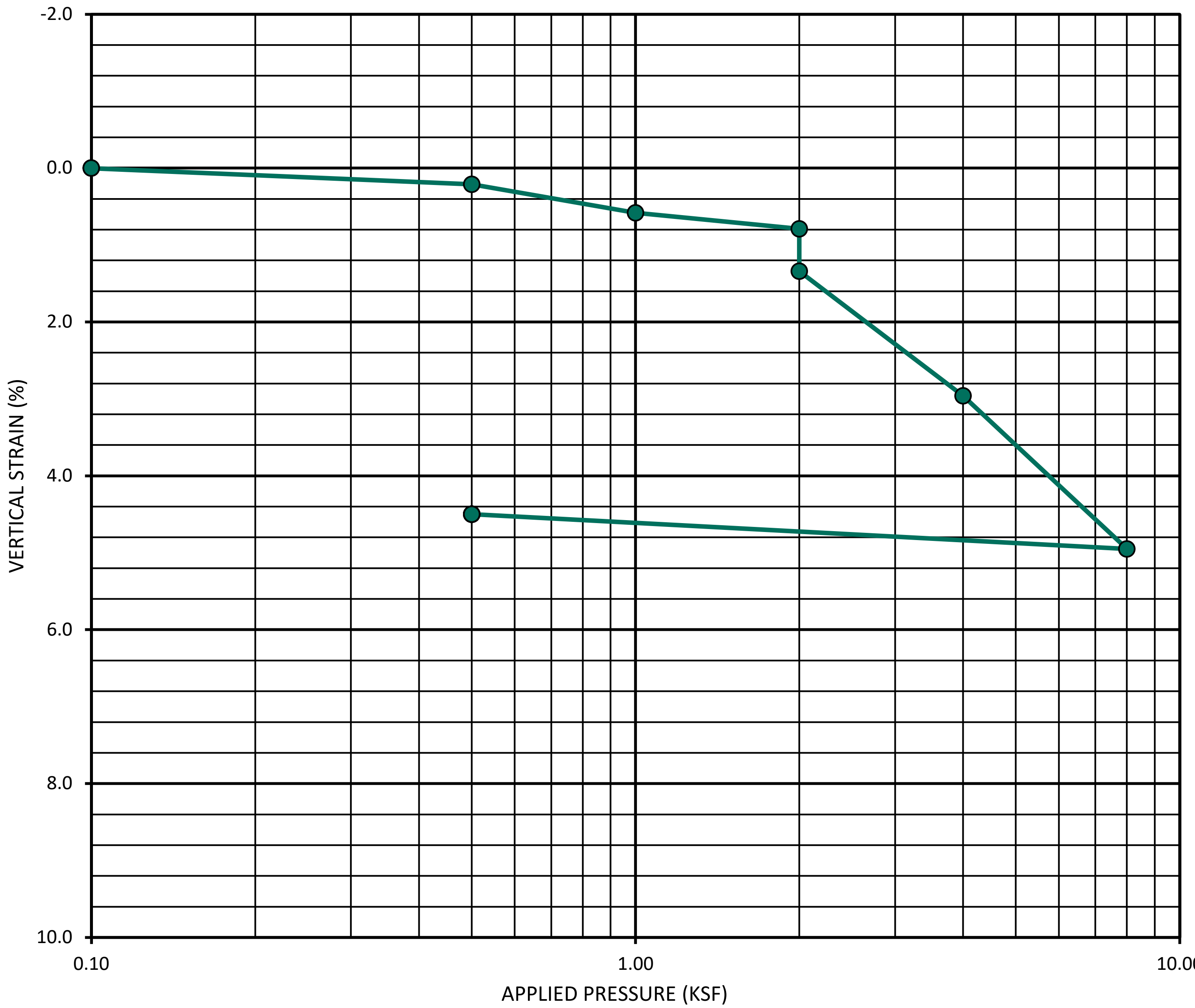
Sample No.	Depth (Feet)	Description (Geologic Unit)	R-Value
B2-1	0-3	Grayish brown, Silty SAND; trace gravel (Qudf)	67

SAMPLE NO.: **B1-2**

SAMPLE DEPTH (FT): **5'**

GEOLOGIC UNIT: **Qudf**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	115.3
INITIAL WATER CONTENT (%):	9.7%
SAMPLE SATURATED AT (KSF):	2.0
INITIAL SATURATION (%):	58.9%



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CONSOLIDATION CURVE - ASTM D 2435

10835 WOODSIDE AVENUE

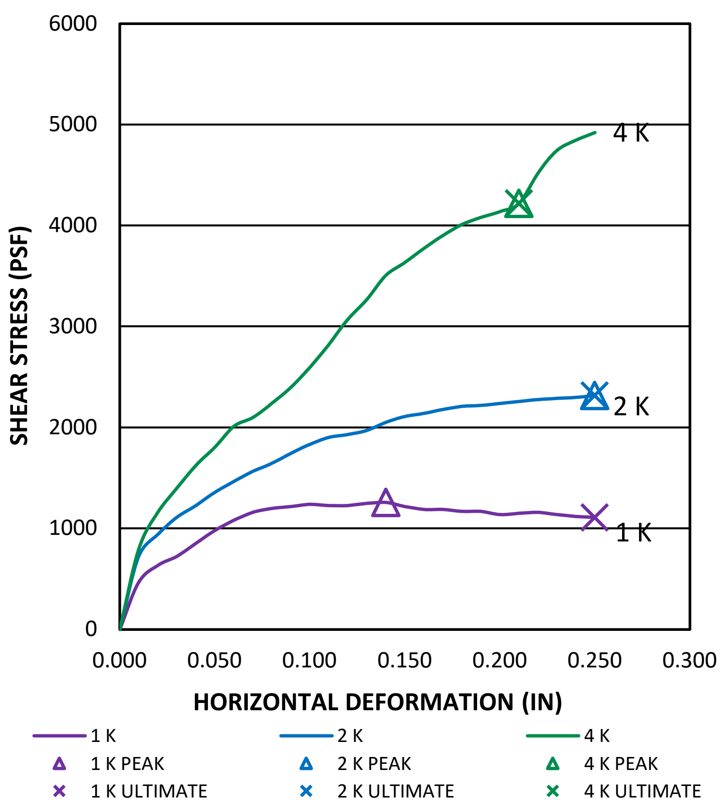
PROJECT NO.: G3177-42-01

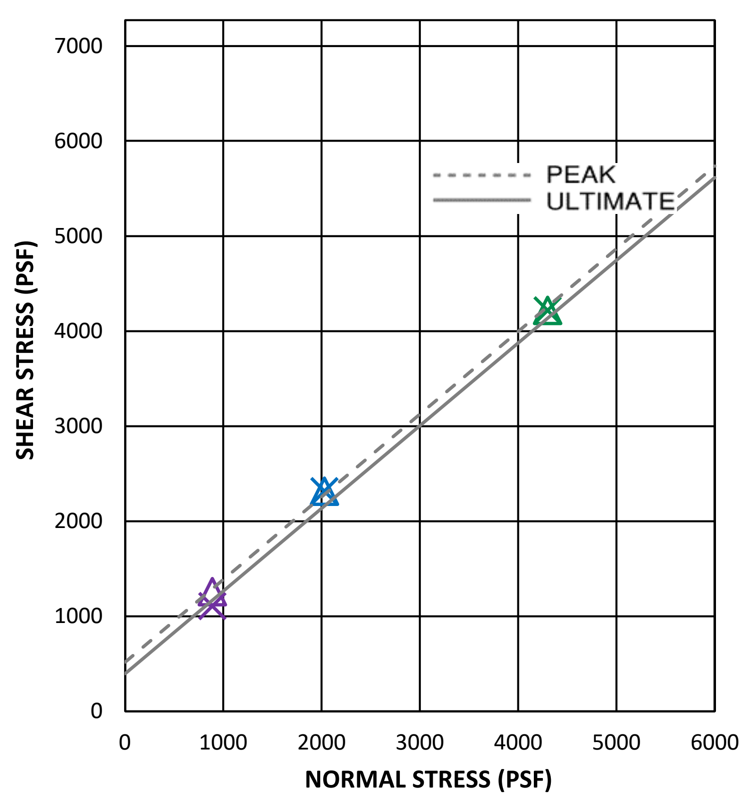
SAMPLE NO.:	B1-3	GEOLOGIC UNIT:	Kgr
SAMPLE DEPTH (FT):	10'	NATURAL/REMOLDED:	N

INITIAL CONDITIONS				
NORMAL STRESS TEST LOAD	1 K	2 K	4 K	AVERAGE
ACTUAL NORMAL STRESS (PSF):	890	2030	4300	--
WATER CONTENT (%):	4.3	4.0	4.5	4.2
DRY DENSITY (PCF):	123.1	117.5	117.7	119.4

AFTER TEST CONDITIONS				
NORMAL STRESS TEST LOAD	1 K	2 K	4 K	AVERAGE
WATER CONTENT (%):	12.8	14.7	14.8	14.1
PEAK SHEAR STRESS (PSF):	1258	2317	4218	--
ULT.-E.O.T. SHEAR STRESS (PSF):	1109	2317	4218	--

RESULTS		
PEAK	COHESION, C (PSF)	520
	FRICTION ANGLE (DEGREES)	41
ULTIMATE	COHESION, C (PSF)	400
	FRICTION ANGLE (DEGREES)	41





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DIRECT SHEAR - AASHTO T-236

10835 WOODSIDE AVE

PROJECT NO.: G3177-42-01

APPENDIX C

APPENDIX C

STORM WATER MANAGEMENT INVESTIGATION

We understand storm water management devices are being proposed in accordance with the 2016 City of Santee BMP Design Manual. If not properly constructed, there is a potential for distress to improvements and properties located hydrologically down gradient or adjacent to these devices. Factors such as the amount of water to be detained, its residence time, and soil permeability have an important effect on seepage transmission and the potential adverse impacts that may occur if the storm water management features are not properly designed and constructed. We have not performed a hydrogeological study at the site. If infiltration of storm water runoff occurs, downstream properties may be subjected to seeps, springs, slope instability, raised groundwater, movement of foundations and slabs, or other undesirable impacts as a result of water infiltration.

Hydrologic Soil Group

The United States Department of Agriculture (USDA), Natural Resources Conservation Services, possesses general information regarding the existing soil conditions for areas within the United States. The USDA website also provides the Hydrologic Soil Group. Table C-1 presents the descriptions of the hydrologic soil groups.

TABLE C-1
HYDROLOGIC SOIL GROUP DEFINITIONS

Soil Group	Soil Group Definition
A	Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
B	Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.
C	Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.
D	Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Table C-2 presents the information from the USDA website for the property.

TABLE C-2
USDA WEB SOIL SURVEY – HYDROLOGIC SOIL GROUP*

Map Unit Name	Map Unit Symbol	Approximate Percentage of Property	Hydrologic Soil Group	k_{SAT} of Most Limiting Layer (Inches/ Hour)
Ramona Sandy Loam, 2 to 5 Percent Slopes	RaB	100	C	0.20 – 0.57

*The areas of the property that possess fill materials should be considered to possess a Hydrologic Soil Group D.

In Situ Testing

We performed constant-head infiltration tests at the locations shown on the *Geologic Map*, Figure 1. Table C-3 presents the results of the infiltration tests. The field data sheets are attached herein. We applied a feasibility factor of safety of 2.0 to our estimated infiltration rates. Soil infiltration rates from in-situ tests can vary significantly from one location to another due to the heterogeneous characteristics inherent to most soil.

TABLE C-3
INFILTRATION TEST RESULTS

Test No.	Geologic Unit	Test Elevation (feet, MSL)	Field-Saturated Hydraulic Conductivity/Infiltration Rate, k_{sat} (inch/hour)	Worksheet Infiltration Rate[1] (inch/hour)
A-1	Topsoil	375	0.136.	0.068
A-2	Kgr	377	0.039	0.020
Average			0.088	0.044

[1] Using a Factor of Safety of 2.

Infiltration categories include full infiltration, partial infiltration and no infiltration. Table C-4 presents the commonly accepted definitions of the potential infiltration categories based on the infiltration rates.

TABLE C-4
INFILTRATION CATEGORIES

Infiltration Category	Field Infiltration Rate, I (Inches/Hour)	Factored Infiltration Rate[1], I (Inches/Hour)
Full Infiltration	$I > 1.0$	$I > 0.5$
Partial Infiltration	$0.10 < I \leq 1.0$	$0.05 < I \leq 0.5$
No Infiltration (Infeasible)	$I < 0.10$	$I < 0.05$

[1] Using a Factor of Safety of 2.

Based on our observations and test results, the average of the factored infiltration rates at the test locations indicated rates less than 0.05 inches per hour. Therefore, partial and full infiltration on the property is considered infeasible based on the calculated infiltration rates, and the site possesses a "No Infiltration" condition.

GEOTECHNICAL CONSIDERATIONS

Groundwater Elevations

We expect groundwater is approximately 20 feet or greater below existing grade. We do not expect groundwater to be encountered during construction of the proposed development. The SWS indicates that the depth to the groundwater table beneath an infiltration BMP must be greater than 10 feet for infiltration to be allowed. Therefore, infiltration would be feasible when considering the depth to groundwater.

New or Existing Utilities

Utilities are located on and adjacent to the property within the existing parking areas, driveways, and roadways. Therefore, full and partial infiltration within the areas near these utilities should be considered infeasible. Setbacks for infiltration should be incorporated if infiltration were to be considered. The setback for infiltration devices should be a minimum of 10 feet and a 1:1 plane of 1 foot below the closest edge of the deepest adjacent utility.

Existing and Planned Structures

Existing buildings are present adjacent to the site. Water should not be allowed to infiltrate in areas where it could affect the neighboring properties and existing adjacent structures, improvements, and roadway. Mitigation for existing structures consists of not allowing water infiltration within a lateral distance of at least 10 feet from the new or existing foundations and property lines.

Soil or Groundwater Contamination

We are unaware of contaminated soil on the property. Therefore, infiltration associated with this risk is considered feasible. In addition, groundwater mounding would not be a concern due to the lack of a near surface groundwater table.

CONCLUSIONS AND RECOMMENDATIONS

Storm Water Evaluation Narrative

The in-place infiltration test locations were selected in areas likely used for potential infiltration devices. We performed 2 infiltration tests within the underlying topsoil and granitic rock and the results indicate an average rate of 0.044 inches per hour (with an applied factor of safety of 2).

Storm Water Evaluation Conclusion

Based on the results of our infiltration tests (less than 0.05 inches per hour); we opine full and partial infiltration on the property is considered infeasible and the property possesses a "No Infiltration" condition.

Storm Water Management Devices

Liners and subdrains should be incorporated into the design and construction of the planned storm water devices. The liners should be impermeable (e.g. High-density polyethylene, HDPE, with a thickness of about 30 mil or equivalent Polyvinyl Chloride, PVC) to prevent water migration. The subdrains should be perforated within the liner area, installed at the base and above the liner, be at least 3 inches in diameter and consist of Schedule 40 PVC pipe. The subdrains outside of the liner should consist of solid pipe. The penetration of the liners at the subdrains should be properly waterproofed. The subdrains should be connected to a proper outlet. The devices should also be installed in accordance with the manufacturer's recommendations.

Storm Water Standard Worksheets

The BMP design manual requests the geotechnical engineer complete the Categorization of Infiltration Feasibility Condition (Form I-8) worksheet information to help evaluate the potential for infiltration on the property. Form I-8 presents the completed information for the submittal process and is attached herein.

The regional storm water standards also have a worksheet that helps the project civil engineer estimate the factor of safety based on several factors. Table C-5 describes the suitability assessment input parameters related to the geotechnical engineering aspects for the factor of safety determination.

TABLE C-5
SUITABILITY ASSESSMENT RELATED CONSIDERATIONS FOR INFILTRATION FACILITY SAFETY FACTORS

Consideration	High Concern – 3 Points	Medium Concern – 2 Points	Low Concern – 1 Point
Assessment Methods	Use of soil survey maps or simple texture analysis to estimate short-term infiltration rates. Use of well permeameter or borehole methods without accompanying continuous boring log. Relatively sparse testing with direct infiltration methods	Use of well permeameter or borehole methods with accompanying continuous boring log. Direct measurement of infiltration area with localized infiltration measurement methods (e.g., Infiltrometer). Moderate spatial resolution	Direct measurement with localized (i.e. small-scale) infiltration testing methods at relatively high resolution or use of extensive test pit infiltration measurement methods.
Predominant Soil Texture	Silty and clayey soils with significant fines	Loamy soils	Granular to slightly loamy soils
Site Soil Variability	Highly variable soils indicated from site assessment or unknown variability	Soil boring/test pits indicate moderately homogenous soils	Soil boring/test pits indicate relatively homogenous soils
Depth to Groundwater/ Impervious Layer	<5 feet below facility bottom	5-15 feet below facility bottom	>15 feet below facility bottom

Based on our geotechnical investigation and the previous table, Table C-6 presents the estimated factor values for the evaluation of the factor of safety. This table only presents the suitability assessment safety factor (Part A) of the worksheet. The project civil engineer should evaluate the safety factor for design (Part B) and use the combined safety factor for the design infiltration rate.

TABLE C-6
FACTOR OF SAFETY WORKSHEET DESIGN VALUES – PART A

Suitability Assessment Factor Category	Assigned Weight (w)	Factor Value (v)	Product (p = w x v)
Assessment Methods	0.25	2	0.50
Predominant Soil Texture	0.25	1	0.25
Site Soil Variability	0.25	2	0.50
Depth to Groundwater/ Impervious Layer	0.25	1	0.25
Suitability Assessment Safety Factor, $S_A = \sum p$			1.50

*The project civil engineer should complete Form I-9 using the data on this table. Additional information is required to evaluate the design factor of safety.

Categorization of Infiltration Feasibility Condition			Form I-8
Part 1 - Full Infiltration Feasibility Screening Criteria **Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?**			
Criteria	Screening Question	**Yes**	**No**
1	**Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		X
Provide basis: We performed 2 Aardvark Permeameter tests at the site in areas where storm water devices may be installed. The following presents the results of the field infiltration tests: A-1 at 4.5 feet: 0.136 inches/hour (0.068 inches/hour with FOS=2) A-2 at 4.0 feet: 0.039 inches/hour (0.020 inches/hour with FOS=2) These tests result in an average of 0.088 inches/hour (0.044 inches/hour with an applied factor of safety of 2); less than 0.5 inches per hour.			
2	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	X	
Provide basis: Geologic hazards do not exist at the site that would preclude infiltration.			

Form I-8 Page 2 of 4			
Criteria	Screening Question	**Yes**	**No**
3	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: Groundwater was not encountered during our investigation. We expect groundwater is approximately 20 feet or greater below existing grade. Therefore, risk of groundwater contamination does not exist at the site that would preclude infiltration.			
4	**Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: We do not expect infiltration will cause water balance issues such as seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters.			
Part 1 Result*	If all answers to rows 1 - 4 are "**Yes**" a full infiltration design is potentially feasible. The feasibility screening category is **Full Infiltration** If any answer from row 1-4 is "**No**", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design. Proceed to Part 2		No Full Infiltration

***To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by the City to substantiate findings.**

Part 2 – Partial Infiltration vs. No Infiltration Feasibility Screening Criteria

Would infiltration of water in any appreciable amount be physically feasible without any negative consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
5	**Do soil and geologic conditions allow for infiltration in any appreciable rate or volume?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		X

Provide basis:

We performed 2 Aardvark Permeameter tests at the site in areas where storm water devices may be installed. The following presents the results of the field infiltration tests:

A-1 at 4.5 feet: 0.136 inches/hour (0.068 inches/hour with FOS=2)

A-2 at 4.0 feet: 0.039 inches/hour (0.020 inches/hour with FOS=2)

These tests result in an average of 0.088 inches/hour (0.044 inches/hour with an applied factor of safety of 2); less than 0.05 inches per hour.

Criteria	Screening Question	Yes	No
6	**Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level**? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	X	

Provide basis:

Geologic hazards do not exist at the site that would preclude infiltration.

<table>
<tr><th>Criteria</th><th>Screening Question</th><th>Yes</th><th>No</th></tr>
<tr><td>7</td><td>Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</td><td>X</td><td></td></tr>
<tr><td colspan="4">Provide basis:

Groundwater was not encountered during our investigation. We expect groundwater is approximately 20 feet or greater below existing grade. Therefore, risk of groundwater contamination does not exist at the site that would preclude infiltration.</td></tr>
<tr><td>8</td><td>Can infiltration be allowed without violating downstream water rights? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</td><td>X</td><td></td></tr>
<tr><td colspan="4">Provide basis:

We have not provided a study regarding water rights. However, these rights are not typical in the San Diego County area.</td></tr>
<tr><td>Part 2 Result*</td><td colspan="2">If all answers from row 1-4 are yes then partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration.

If any answer from row 5-8 is no, then infiltration of any volume is considered to be infeasible within the drainage area. The feasibility screening category is No Infiltration.</td><td>No Infiltration</td></tr>
</table>

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by the City to substantiate findings.

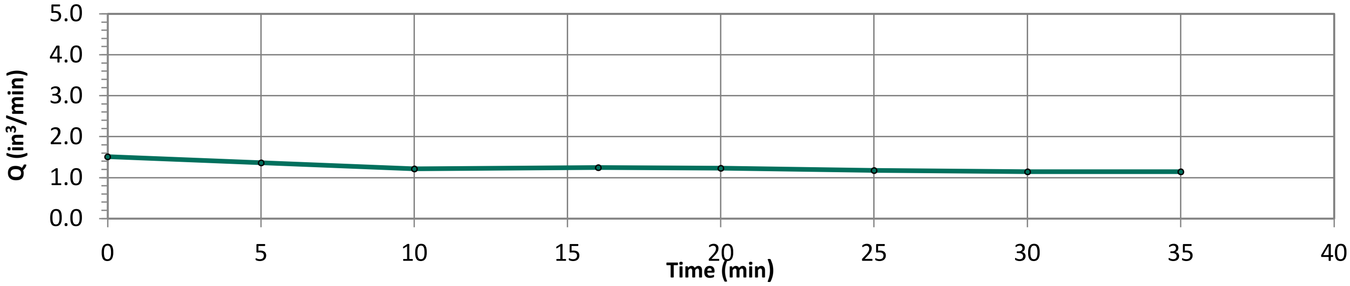
TEST NO.: **A-1**

GEOLOGIC UNIT: **Qu**

EXCAVATION ELEVATION (MSL, FT): **379**

TEST INFORMATION	
BOREHOLE DIAMETER (IN):	4
BOREHOLE DEPTH (FT):	4.5
TEST/BOTTOM ELEVATION (MSL, FT):	375
MEASURED HEAD HEIGHT (IN):	6.0
CALCULATED HEAD HEIGHT (IN):	6.2
FACTOR OF SAFETY:	2.0

TEST RESULTS	
STEADY FLOW RATE (IN^3/MIN):	**1.146**
FIELD-SATURATED INFILTRATION RATE (IN/HR):	**0.136**
FACTORED INFILTRATION RATE (IN/HR):	**0.068**



TEST DATA

Reading	Time Elapsed (min)	Water Weight Consumed (lbs)	Water Volume Consumed (in^3)	Q (in^3/min)
1	0.00	0.000	0.00	0.00
2	5.00	0.273	7.56	1.512
3	5.00	0.246	6.81	1.362
4	6.00	0.264	7.31	1.218
5	4.00	0.180	4.98	1.246
6	5.00	0.222	6.15	1.230
7	5.00	0.213	5.90	1.180
8	5.00	0.207	5.73	1.146
9	5.00	0.207	5.73	1.146

GEOCON INCORPORATED
GEOTECHNICAL CONSULTANTS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 2974
PHONE 858 558-6900 - FAX 858 558-6159

AARDVARK PERMEAMETER TEST RESULTS

EXTRA SPACE STORAGE #1984

PROJECT NO.: G3177-42-01

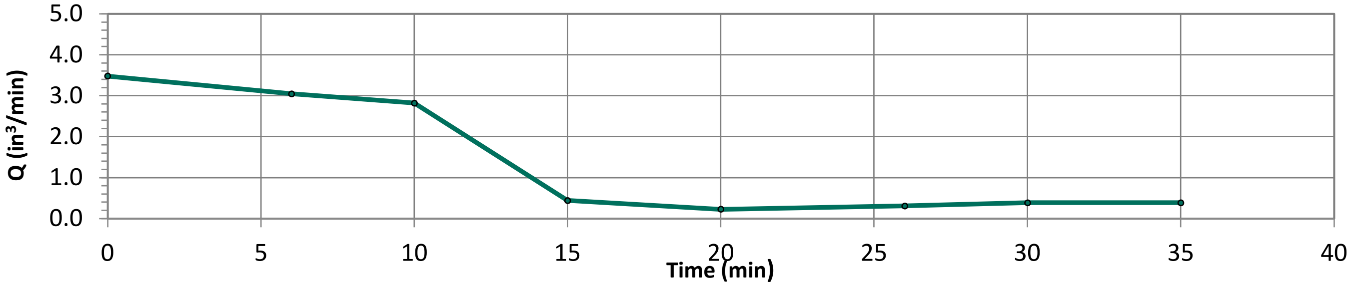
TEST NO.: **A-2**

GEOLOGIC UNIT: **Kgr**

EXCAVATION ELEVATION (MSL, FT): **381**

TEST INFORMATION	
BOREHOLE DIAMETER (IN):	4
BOREHOLE DEPTH (FT):	4.0
TEST/BOTTOM ELEVATION (MSL, FT):	377
MEASURED HEAD HEIGHT (IN):	6.0
CALCULATED HEAD HEIGHT (IN):	6.1
FACTOR OF SAFETY:	2.0

TEST RESULTS	
STEADY FLOW RATE (IN^3/MIN):	**0.329**
FIELD-SATURATED INFILTRATION RATE (IN/HR):	**0.039**
FACTORED INFILTRATION RATE (IN/HR):	**0.020**



TEST DATA

Reading	Time Elapsed (min)	Water Weight Consumed (lbs)	Water Volume Consumed (in^3)	Q (in^3/min)
1	0.00	0.000	0.00	0.00
2	6.00	0.755	20.91	3.485
3	4.00	0.440	12.18	3.046
4	5.00	0.510	14.12	2.825
5	5.00	0.080	2.22	0.443
6	6.00	0.050	1.38	0.231
7	4.00	0.045	1.25	0.312
8	5.00	0.070	1.94	0.388
9	5.00	0.070	1.94	0.388

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AARDVARK PERMEAMETER TEST RESULTS

EXTRA SPACE STORAGE #1984

PROJECT NO.: G3177-42-01

APPENDIX D

APPENDIX D

RECOMMENDED GRADING SPECIFICATIONS

FOR

EXTRA SPACE STORAGE
10835 WOODSIDE AVENUE
SANTEE, CALIFORNIA

PROJECT NO. G3177-42-01

RECOMMENDED GRADING SPECIFICATIONS

1. GENERAL

1.1 These Recommended Grading Specifications shall be used in conjunction with the Geotechnical Report for the project prepared by Geocon. The recommendations contained in the text of the Geotechnical Report are a part of the earthwork and grading specifications and shall supersede the provisions contained hereinafter in the case of conflict.

1.2 Prior to the commencement of grading, a geotechnical consultant (Consultant) shall be employed for the purpose of observing earthwork procedures and testing the fills for substantial conformance with the recommendations of the Geotechnical Report and these specifications. The Consultant should provide adequate testing and observation services so that they may assess whether, in their opinion, the work was performed in substantial conformance with these specifications. It shall be the responsibility of the Contractor to assist the Consultant and keep them apprised of work schedules and changes so that personnel may be scheduled accordingly.

1.3 It shall be the sole responsibility of the Contractor to provide adequate equipment and methods to accomplish the work in accordance with applicable grading codes or agency ordinances, these specifications and the approved grading plans. If, in the opinion of the Consultant, unsatisfactory conditions such as questionable soil materials, poor moisture condition, inadequate compaction, and/or adverse weather result in a quality of work not in conformance with these specifications, the Consultant will be empowered to reject the work and recommend to the Owner that grading be stopped until the unacceptable conditions are corrected.

2. DEFINITIONS

2.1 **Owner** shall refer to the owner of the property or the entity on whose behalf the grading work is being performed and who has contracted with the Contractor to have grading performed.

2.2 **Contractor** shall refer to the Contractor performing the site grading work.

2.3 **Civil Engineer** or **Engineer of Work** shall refer to the California licensed Civil Engineer or consulting firm responsible for preparation of the grading plans, surveying and verifying as-graded topography.

2.4 **Consultant** shall refer to the soil engineering and engineering geology consulting firm retained to provide geotechnical services for the project.

2.5 **Soil Engineer** shall refer to a California licensed Civil Engineer retained by the Owner, who is experienced in the practice of geotechnical engineering. The Soil Engineer shall be responsible for having qualified representatives on-site to observe and test the Contractor's work for conformance with these specifications.

2.6 **Engineering Geologist** shall refer to a California licensed Engineering Geologist retained by the Owner to provide geologic observations and recommendations during the site grading.

2.7 **Geotechnical Report** shall refer to a soil report (including all addenda) which may include a geologic reconnaissance or geologic investigation that was prepared specifically for the development of the project for which these Recommended Grading Specifications are intended to apply.

3. MATERIALS

3.1 Materials for compacted fill shall consist of any soil excavated from the cut areas or imported to the site that, in the opinion of the Consultant, is suitable for use in construction of fills. In general, fill materials can be classified as *soil* fills, *soil-rock* fills or *rock* fills, as defined below.

3.1.1 **Soil fills** are defined as fills containing no rocks or hard lumps greater than 12 inches in maximum dimension and containing at least 40 percent by weight of material smaller than ¾ inch in size.

3.1.2 **Soil-rock fills** are defined as fills containing no rocks or hard lumps larger than 4 feet in maximum dimension and containing a sufficient matrix of soil fill to allow for proper compaction of soil fill around the rock fragments or hard lumps as specified in Paragraph 6.2. **Oversize rock** is defined as material greater than 12 inches.

3.1.3 **Rock fills** are defined as fills containing no rocks or hard lumps larger than 3 feet in maximum dimension and containing little or no fines. Fines are defined as material smaller than ¾ inch in maximum dimension. The quantity of fines shall be less than approximately 20 percent of the rock fill quantity.

3.2 Material of a perishable, spongy, or otherwise unsuitable nature as determined by the Consultant shall not be used in fills.

3.3 Materials used for fill, either imported or on-site, shall not contain hazardous materials as defined by the California Code of Regulations, Title 22, Division 4, Chapter 30, Articles 9 and 10; 40CFR; and any other applicable local, state or federal laws. The Consultant shall not be responsible for the identification or analysis of the potential presence of hazardous materials. However, if observations, odors or soil discoloration cause Consultant to suspect the presence of hazardous materials, the Consultant may request from the Owner the termination of grading operations within the affected area. Prior to resuming grading operations, the Owner shall provide a written report to the Consultant indicating that the suspected materials are not hazardous as defined by applicable laws and regulations.

3.4 The outer 15 feet of *soil-rock* fill slopes, measured horizontally, should be composed of properly compacted *soil* fill materials approved by the Consultant. *Rock* fill may extend to the slope face, provided that the slope is not steeper than 2:1 (horizontal:vertical) and a soil layer no thicker than 12 inches is track-walked onto the face for landscaping purposes. This procedure may be utilized provided it is acceptable to the governing agency, Owner and Consultant.

3.5 Samples of soil materials to be used for fill should be tested in the laboratory by the Consultant to determine the maximum density, optimum moisture content, and, where appropriate, shear strength, expansion, and gradation characteristics of the soil.

3.6 During grading, soil or groundwater conditions other than those identified in the Geotechnical Report may be encountered by the Contractor. The Consultant shall be notified immediately to evaluate the significance of the unanticipated condition.

4. CLEARING AND PREPARING AREAS TO BE FILLED

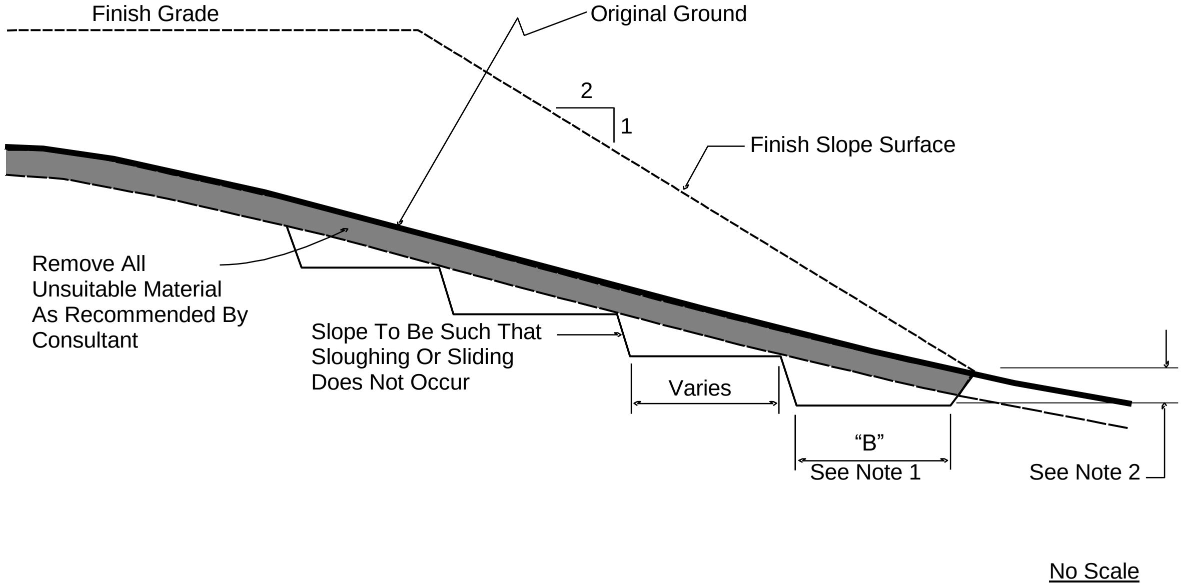
4.1 Areas to be excavated and filled shall be cleared and grubbed. Clearing shall consist of complete removal above the ground surface of trees, stumps, brush, vegetation, man-made structures, and similar debris. Grubbing shall consist of removal of stumps, roots, buried logs and other unsuitable material and shall be performed in areas to be graded. Roots and other projections exceeding 1½ inches in diameter shall be removed to a depth of 3 feet below the surface of the ground. Borrow areas shall be grubbed to the extent necessary to provide suitable fill materials.

4.2 Asphalt pavement material removed during clearing operations should be properly disposed at an approved off-site facility or in an acceptable area of the project evaluated by Geocon and the property owner. Concrete fragments that are free of reinforcing steel may be placed in fills, provided they are placed in accordance with Section 6.2 or 6.3 of this document.

4.3 After clearing and grubbing of organic matter and other unsuitable material, loose or porous soils shall be removed to the depth recommended in the Geotechnical Report. The depth of removal and compaction should be observed and approved by a representative of the Consultant. The exposed surface shall then be plowed or scarified to a minimum depth of 6 inches and until the surface is free from uneven features that would tend to prevent uniform compaction by the equipment to be used.

4.4 Where the slope ratio of the original ground is steeper than 5:1 (horizontal:vertical), or where recommended by the Consultant, the original ground should be benched in accordance with the following illustration.

TYPICAL BENCHING DETAIL



DETAIL NOTES: (1) Key width "B" should be a minimum of 10 feet, or sufficiently wide to permit complete coverage with the compaction equipment used. The base of the key should be graded horizontal, or inclined slightly into the natural slope.

(2) The outside of the key should be below the topsoil or unsuitable surficial material and at least 2 feet into dense formational material. Where hard rock is exposed in the bottom of the key, the depth and configuration of the key may be modified as approved by the Consultant.

4.5 After areas to receive fill have been cleared and scarified, the surface should be moisture conditioned to achieve the proper moisture content, and compacted as recommended in Section 6 of these specifications.

5. COMPACTION EQUIPMENT

5.1 Compaction of *soil* or *soil-rock* fill shall be accomplished by sheepsfoot or segmented-steel wheeled rollers, vibratory rollers, multiple-wheel pneumatic-tired rollers, or other types of acceptable compaction equipment. Equipment shall be of such a design that it will be capable of compacting the *soil* or *soil-rock* fill to the specified relative compaction at the specified moisture content.

5.2 Compaction of *rock* fills shall be performed in accordance with Section 6.3.

6. PLACING, SPREADING AND COMPACTION OF FILL MATERIAL

6.1 *Soil* fill, as defined in Paragraph 3.1.1, shall be placed by the Contractor in accordance with the following recommendations:

6.1.1 *Soil* fill shall be placed by the Contractor in layers that, when compacted, should generally not exceed 8 inches. Each layer shall be spread evenly and shall be thoroughly mixed during spreading to obtain uniformity of material and moisture in each layer. The entire fill shall be constructed as a unit in nearly level lifts. Rock materials greater than 12 inches in maximum dimension shall be placed in accordance with Section 6.2 or 6.3 of these specifications.

6.1.2 In general, the *soil* fill shall be compacted at a moisture content at or above the optimum moisture content as determined by ASTM D 1557.

6.1.3 When the moisture content of *soil* fill is below that specified by the Consultant, water shall be added by the Contractor until the moisture content is in the range specified.

6.1.4 When the moisture content of the *soil* fill is above the range specified by the Consultant or too wet to achieve proper compaction, the *soil* fill shall be aerated by the Contractor by blading/mixing, or other satisfactory methods until the moisture content is within the range specified.

6.1.5 After each layer has been placed, mixed, and spread evenly, it shall be thoroughly compacted by the Contractor to a relative compaction of at least 90 percent. Relative compaction is defined as the ratio (expressed in percent) of the in-place dry density of the compacted fill to the maximum laboratory dry density as determined in accordance with ASTM D 1557. Compaction shall be continuous over the entire area, and compaction equipment shall make sufficient passes so that the specified minimum relative compaction has been achieved throughout the entire fill.

6.1.6 Where practical, soils having an Expansion Index greater than 50 should be placed at least 3 feet below finish pad grade and should be compacted at a moisture content generally 2 to 4 percent greater than the optimum moisture content for the material.

6.1.7 Properly compacted *soil* fill shall extend to the design surface of fill slopes. To achieve proper compaction, it is recommended that fill slopes be over-built by at least 3 feet and then cut to the design grade. This procedure is considered preferable to track-walking of slopes, as described in the following paragraph.

6.1.8 As an alternative to over-building of slopes, slope faces may be back-rolled with a heavy-duty loaded sheepsfoot or vibratory roller at maximum 4-foot fill height intervals. Upon completion, slopes should then be track-walked with a D-8 dozer or similar equipment, such that a dozer track covers all slope surfaces at least twice.

6.2 *Soil-rock* fill, as defined in Paragraph 3.1.2, shall be placed by the Contractor in accordance with the following recommendations:

6.2.1 Rocks larger than 12 inches but less than 4 feet in maximum dimension may be incorporated into the compacted *soil* fill, but shall be limited to the area measured 15 feet minimum horizontally from the slope face and 5 feet below finish grade or 3 feet below the deepest utility, whichever is deeper.

6.2.2 Rocks or rock fragments up to 4 feet in maximum dimension may either be individually placed or placed in windrows. Under certain conditions, rocks or rock fragments up to 10 feet in maximum dimension may be placed using similar methods. The acceptability of placing rock materials greater than 4 feet in maximum dimension shall be evaluated during grading as specific cases arise and shall be approved by the Consultant prior to placement.

6.2.3 For individual placement, sufficient space shall be provided between rocks to allow for passage of compaction equipment.

6.2.4 For windrow placement, the rocks should be placed in trenches excavated in properly compacted *soil* fill. Trenches should be approximately 5 feet wide and 4 feet deep in maximum dimension. The voids around and beneath rocks should be filled with approved granular soil having a Sand Equivalent of 30 or greater and should be compacted by flooding. Windrows may also be placed utilizing an "open-face" method in lieu of the trench procedure, however, this method should first be approved by the Consultant.

6.2.5 Windrows should generally be parallel to each other and may be placed either parallel to or perpendicular to the face of the slope depending on the site geometry. The minimum horizontal spacing for windrows shall be 12 feet center-to-center with a 5-foot stagger or offset from lower courses to next overlying course. The minimum vertical spacing between windrow courses shall be 2 feet from the top of a lower windrow to the bottom of the next higher windrow.

6.2.6 Rock placement, fill placement and flooding of approved granular soil in the windrows should be continuously observed by the Consultant.

6.3 *Rock* fills, as defined in Section 3.1.3, shall be placed by the Contractor in accordance with the following recommendations:

6.3.1 The base of the *rock* fill shall be placed on a sloping surface (minimum slope of 2 percent). The surface shall slope toward suitable subdrainage outlet facilities. The *rock* fills shall be provided with subdrains during construction so that a hydrostatic pressure buildup does not develop. The subdrains shall be permanently connected to controlled drainage facilities to control post-construction infiltration of water.

6.3.2 *Rock* fills shall be placed in lifts not exceeding 3 feet. Placement shall be by rock trucks traversing previously placed lifts and dumping at the edge of the currently placed lift. Spreading of the *rock* fill shall be by dozer to facilitate *seating* of the rock. The *rock* fill shall be watered heavily during placement. Watering shall consist of water trucks traversing in front of the current rock lift face and spraying water continuously during rock placement. Compaction equipment with compactive energy comparable to or greater than that of a 20-ton steel vibratory roller or other compaction equipment providing suitable energy to achieve the required compaction or deflection as recommended in Paragraph 6.3.3 shall be utilized. The number of passes to be made should be determined as described in Paragraph 6.3.3. Once a *rock* fill lift has been covered with *soil* fill, no additional *rock* fill lifts will be permitted over the *soil* fill.

6.3.3 Plate bearing tests, in accordance with ASTM D 1196, may be performed in both the compacted *soil* fill and in the *rock* fill to aid in determining the required minimum number of passes of the compaction equipment. If performed, a minimum of three plate bearing tests should be performed in the properly compacted *soil* fill (minimum relative compaction of 90 percent). Plate bearing tests shall then be performed on areas of *rock* fill having two passes, four passes and six passes of the compaction equipment, respectively. The number of passes required for the *rock* fill shall be determined by comparing the results of the plate bearing tests for the *soil* fill and the *rock* fill and by evaluating the deflection variation with number of passes. The required number of passes of the compaction equipment will be performed as necessary until the plate bearing deflections are equal to or less than that determined for the properly compacted *soil* fill. In no case will the required number of passes be less than two.

6.3.4 A representative of the Consultant should be present during *rock* fill operations to observe that the minimum number of "passes" have been obtained, that water is being properly applied and that specified procedures are being followed. The actual number of plate bearing tests will be determined by the Consultant during grading.

6.3.5 Test pits shall be excavated by the Contractor so that the Consultant can state that, in their opinion, sufficient water is present and that voids between large rocks are properly filled with smaller rock material. In-place density testing will not be required in the *rock* fills.

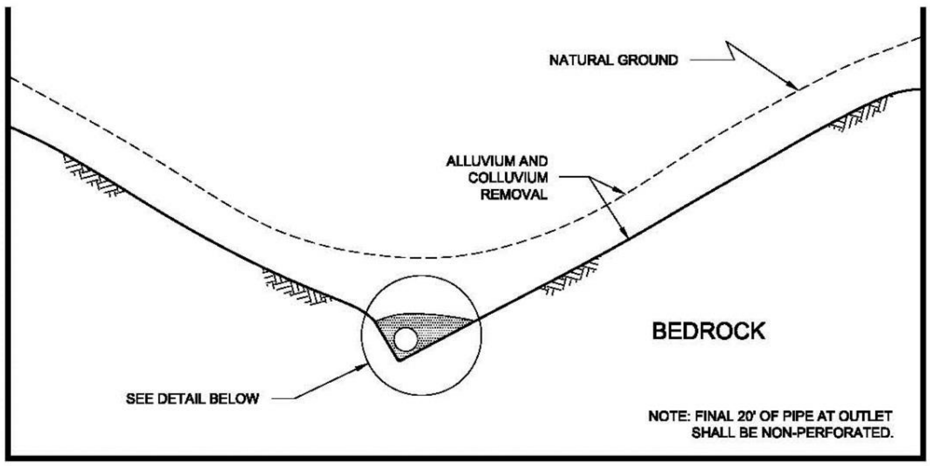
6.3.6 To reduce the potential for "piping" of fines into the *rock* fill from overlying *soil* fill material, a 2-foot layer of graded filter material shall be placed above the uppermost lift of *rock* fill. The need to place graded filter material below the *rock* should be determined by the Consultant prior to commencing grading. The gradation of the graded filter material will be determined at the time the *rock* fill is being excavated. Materials typical of the *rock* fill should be submitted to the Consultant in a timely manner, to allow design of the graded filter prior to the commencement of *rock* fill placement.

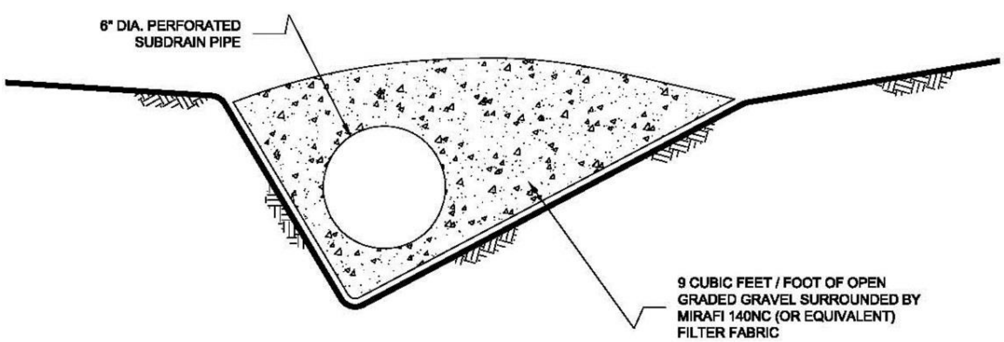
6.3.7 *Rock* fill placement should be continuously observed during placement by the Consultant.

7. SUBDRAINS

7.1 The geologic units on the site may have permeability characteristics and/or fracture systems that could be susceptible under certain conditions to seepage. The use of canyon subdrains may be necessary to mitigate the potential for adverse impacts associated with seepage conditions. Canyon subdrains with lengths in excess of 500 feet or extensions of existing offsite subdrains should use 8-inch-diameter pipes. Canyon subdrains less than 500 feet in length should use 6-inch-diameter pipes.

TYPICAL CANYON DRAIN DETAIL





NOTES:

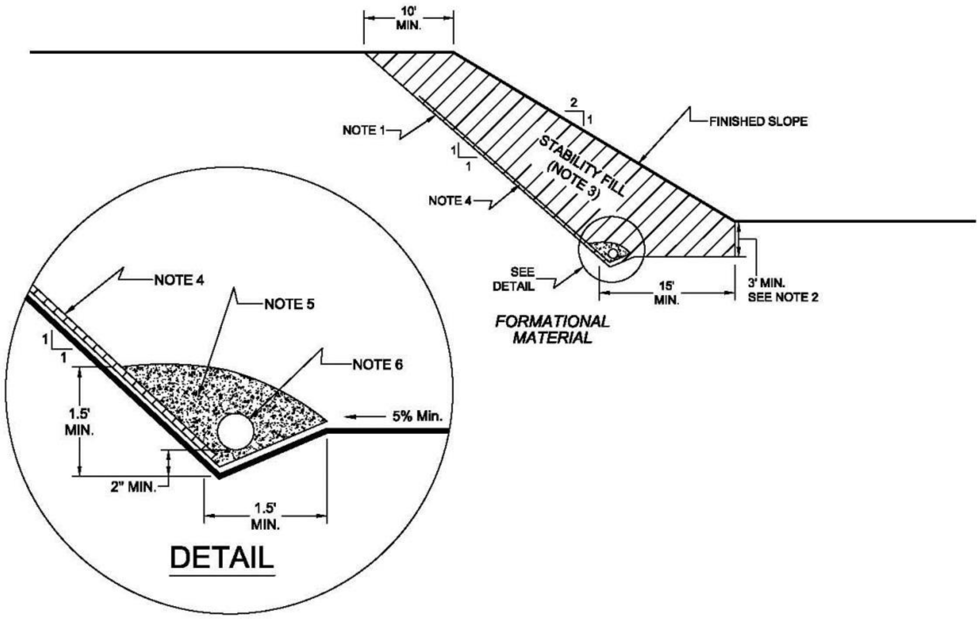
1......6-INCH DIAMETER, SCHEDULE 80 PVC PERFORATED PIPE FOR FILLS IN EXCESS OF 100-FEET IN DEPTH OR A PIPE LENGTH OF LONGER THAN 500 FEET.

2......6-INCH DIAMETER, SCHEDULE 40 PVC PERFORATED PIPE FOR FILLS LESS THAN 100-FEET IN DEPTH OR A PIPE LENGTH SHORTER THAN 500 FEET.

NO SCALE

7.2 Slope drains within stability fill keyways should use 4-inch-diameter (or lager) pipes.

TYPICAL STABILITY FILL DETAIL



NOTES:

1.....EXCAVATE BACKCUT AT 1:1 INCLINATION (UNLESS OTHERWISE NOTED).

2.....BASE OF STABILITY FILL TO BE 3 FEET INTO FORMATIONAL MATERIAL, SLOPING A MINIMUM 5% INTO SLOPE.

3.....STABILITY FILL TO BE COMPOSED OF PROPERLY COMPACTED GRANULAR SOIL.

4.....CHIMNEY DRAINS TO BE APPROVED PREFABRICATED CHIMNEY DRAIN PANELS (MIRADRAIN G200N OR EQUIVALENT) SPACED APPROXIMATELY 20 FEET CENTER TO CENTER AND 4 FEET WIDE. CLOSER SPACING MAY BE REQUIRED IF SEEPAGE IS ENCOUNTERED.

5.....FILTER MATERIAL TO BE 3/4-INCH, OPEN-GRADED CRUSHED ROCK ENCLOSED IN APPROVED FILTER FABRIC (MIRAFI 140NC).

6.....COLLECTOR PIPE TO BE 4-INCH MINIMUM DIAMETER, PERFORATED, THICK-WALLED PVC SCHEDULE 40 OR EQUIVALENT, AND SLOPED TO DRAIN AT 1 PERCENT MINIMUM TO APPROVED OUTLET.

NO SCALE

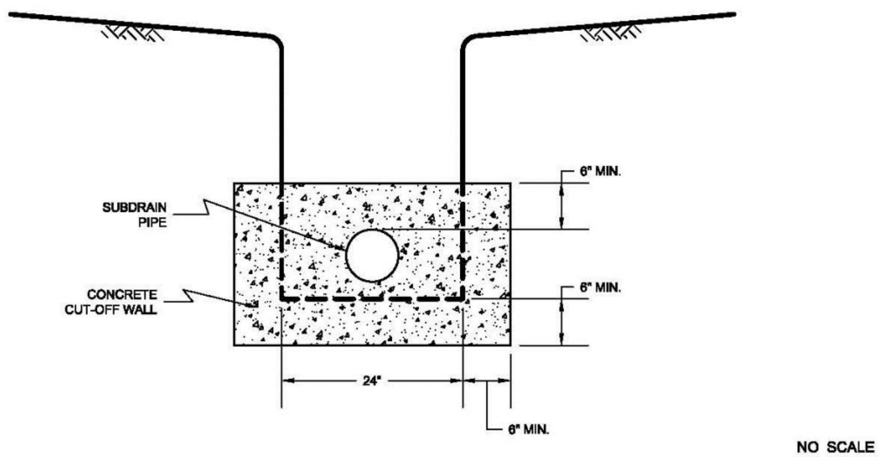
7.3 The actual subdrain locations will be evaluated in the field during the remedial grading operations. Additional drains may be necessary depending on the conditions observed and the requirements of the local regulatory agencies. Appropriate subdrain outlets should be evaluated prior to finalizing 40-scale grading plans.

7.4 *Rock* fill or *soil-rock* fill areas may require subdrains along their down-slope perimeters to mitigate the potential for buildup of water from construction or landscape irrigation. The subdrains should be at least 6-inch-diameter pipes encapsulated in gravel and filter fabric. *Rock* fill drains should be constructed using the same requirements as canyon subdrains.

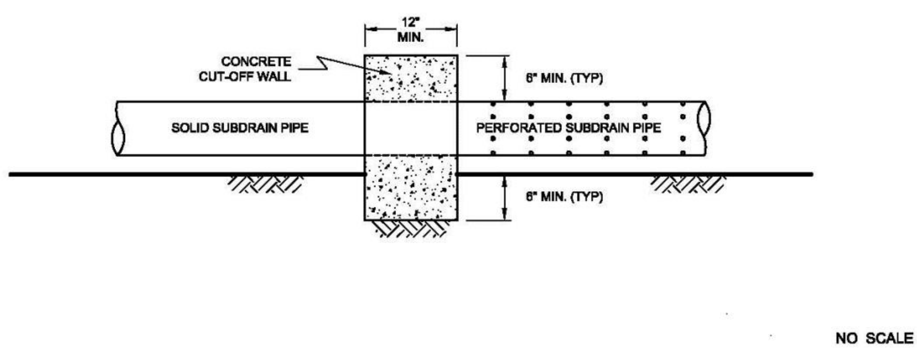
7.5 Prior to outletting, the final 20-foot segment of a subdrain that will not be extended during future development should consist of non-perforated drainpipe. At the non-perforated/ perforated interface, a seepage cutoff wall should be constructed on the downslope side of the pipe.

TYPICAL CUT OFF WALL DETAIL

FRONT VIEW

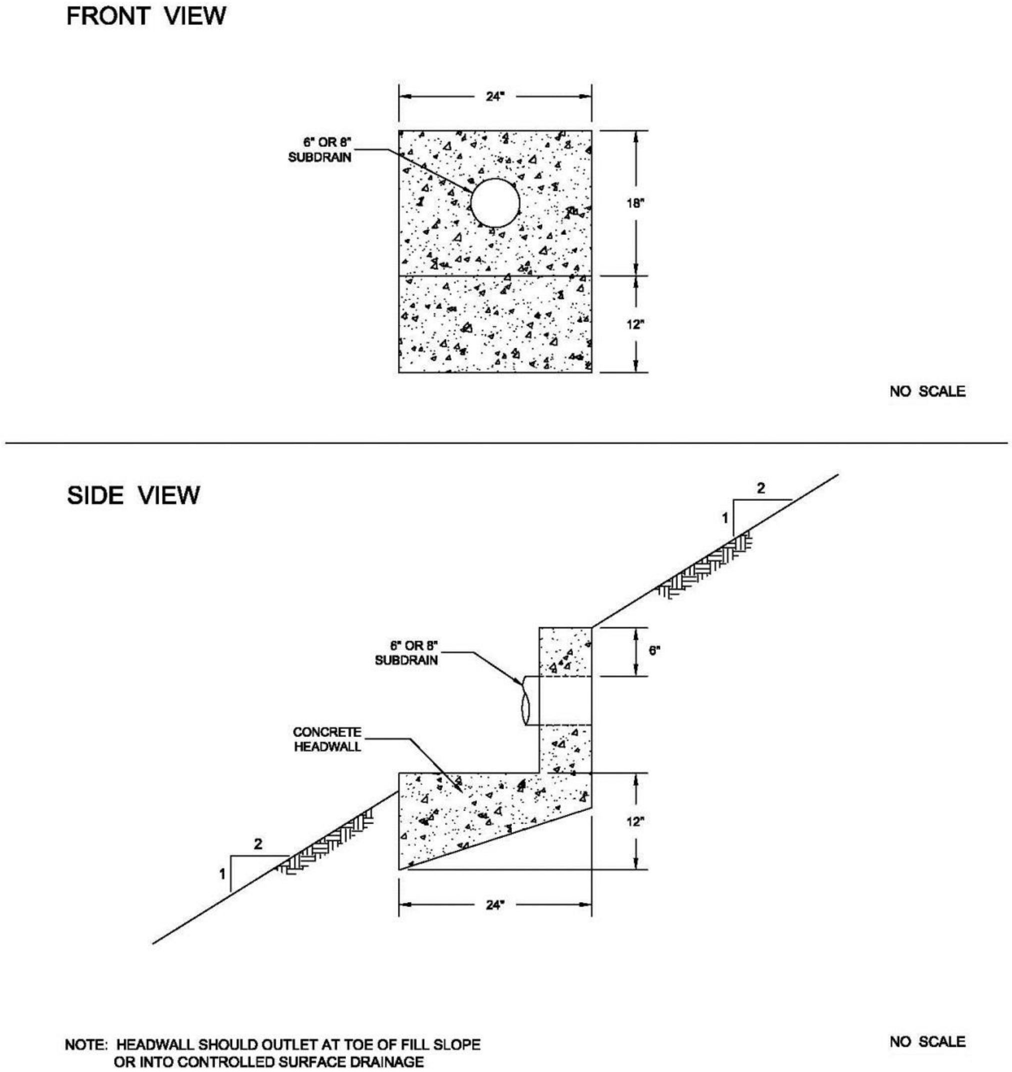


SIDE VIEW



7.6 Subdrains that discharge into a natural drainage course or open space area should be provided with a permanent headwall structure.

TYPICAL HEADWALL DETAIL



7.7 The final grading plans should show the location of the proposed subdrains. After completion of remedial excavations and subdrain installation, the project civil engineer should survey the drain locations and prepare an "as-built" map showing the drain locations. The final outlet and connection locations should be determined during grading operations. Subdrains that will be extended on adjacent projects after grading can be placed on formational material and a vertical riser should be placed at the end of the subdrain. The grading contractor should consider videoing the subdrains shortly after burial to check proper installation and functionality. The contractor is responsible for the performance of the drains.

8. OBSERVATION AND TESTING

8.1 The Consultant shall be the Owner's representative to observe and perform tests during clearing, grubbing, filling, and compaction operations. In general, no more than 2 feet in vertical elevation of *soil* or *soil-rock* fill should be placed without at least one field density test being performed within that interval. In addition, a minimum of one field density test should be performed for every 2,000 cubic yards of *soil* or *soil-rock* fill placed and compacted.

8.2 The Consultant should perform a sufficient distribution of field density tests of the compacted *soil* or *soil-rock* fill to provide a basis for expressing an opinion whether the fill material is compacted as specified. Density tests shall be performed in the compacted materials below any disturbed surface. When these tests indicate that the density of any layer of fill or portion thereof is below that specified, the particular layer or areas represented by the test shall be reworked until the specified density has been achieved.

8.3 During placement of *rock* fill, the Consultant should observe that the minimum number of passes have been obtained per the criteria discussed in Section 6.3.3. The Consultant should request the excavation of observation pits and may perform plate bearing tests on the placed *rock* fills. The observation pits will be excavated to provide a basis for expressing an opinion as to whether the *rock* fill is properly seated and sufficient moisture has been applied to the material. When observations indicate that a layer of *rock* fill or any portion thereof is below that specified, the affected layer or area shall be reworked until the *rock* fill has been adequately seated and sufficient moisture applied.

8.4 A settlement monitoring program designed by the Consultant may be conducted in areas of *rock* fill placement. The specific design of the monitoring program shall be as recommended in the Conclusions and Recommendations section of the project Geotechnical Report or in the final report of testing and observation services performed during grading.

8.5 We should observe the placement of subdrains, to check that the drainage devices have been placed and constructed in substantial conformance with project specifications.

8.6 Testing procedures shall conform to the following Standards as appropriate:

8.6.1 Soil and Soil-Rock Fills:

8.6.1.1 Field Density Test, ASTM D 1556, *Density of Soil In-Place By the Sand-Cone Method.*

8.6.1.2 Field Density Test, Nuclear Method, ASTM D 6938, *Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth).*

8.6.1.3 Laboratory Compaction Test, ASTM D 1557, *Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-Pound Hammer and 18-Inch Drop.*

8.6.1.4. Expansion Index Test, ASTM D 4829, *Expansion Index Test*.

9. PROTECTION OF WORK

9.1 During construction, the Contractor shall properly grade all excavated surfaces to provide positive drainage and prevent ponding of water. Drainage of surface water shall be controlled to avoid damage to adjoining properties or to finished work on the site. The Contractor shall take remedial measures to prevent erosion of freshly graded areas until such time as permanent drainage and erosion control features have been installed. Areas subjected to erosion or sedimentation shall be properly prepared in accordance with the Specifications prior to placing additional fill or structures.

9.2 After completion of grading as observed and tested by the Consultant, no further excavation or filling shall be conducted except in conjunction with the services of the Consultant.

10. CERTIFICATIONS AND FINAL REPORTS

10.1 Upon completion of the work, Contractor shall furnish Owner a certification by the Civil Engineer stating that the lots and/or building pads are graded to within 0.1 foot vertically of elevations shown on the grading plan and that all tops and toes of slopes are within 0.5 foot horizontally of the positions shown on the grading plans. After installation of a section of subdrain, the project Civil Engineer should survey its location and prepare an *as-built* plan of the subdrain location. The project Civil Engineer should verify the proper outlet for the subdrains and the Contractor should ensure that the drain system is free of obstructions.

10.2 The Owner is responsible for furnishing a final as-graded soil and geologic report satisfactory to the appropriate governing or accepting agencies. The as-graded report should be prepared and signed by a California licensed Civil Engineer experienced in geotechnical engineering and by a California Certified Engineering Geologist, indicating that the geotechnical aspects of the grading were performed in substantial conformance with the Specifications or approved changes to the Specifications.

LIST OF REFERENCES

CGS (2021a), *EQ Zapp: California Earthquake Hazards Zone Application*, web application that queries California Geological Survey mapped earthquake hazard zones, https://www.conservation.ca.gov/cgs/geohazards/eq-zapp, accessed September 2023.

CGS (2021b), *California Tsunami Maps and Data*, web application for accessing tsunami inundation hazard, https://www.conservation.ca.gov/cgs/tsunami/maps, accessed September 2023.

City of Santee (2021), *Seismic Safety Study*, *Geotechnical/Seismic Hazard Map*;

FEMA (2020), *Flood Insurance Rate Map (FIRM), Map Number 06073C1654G, effective date May 16, 2012*, http://www.fema.gov/portal/home, accessed September 2023.

SEAOC (2019), *OSHPD Seismic Design Maps*: web application that uses USGS data to retrieve seismic design data, Structural Engineers Association of California website, http://seismicmaps.org/, accessed September 2023.

Tan, S, S. (2002), *Geologic Map of the El Cajon 7.5' Quadrangle, San Dieg0, California*, CGS & USGS, scale 1:24,000.

USGS (2016), *Quaternary Fault and Fold Database of the United States*: U.S. Geological Survey website, https://www.usgs.gov/programs/earthquake-hazards/faults, accessed September 2023.

ATTACHMENT F

STORMWATER QUALITY MANAGEMENT PLAN

CITY OF SANTEE

PRIORITY DEVELOPMENT PROJECT (PDP)

STORM WATER QUALITY MANAGEMENT PLAN (SWQMP)

FOR

Extra Space Storage - Santee
CUP-2024-0001

10835 Santee Woodside Avenue
Santee, CA 92071

ASSESSOR'S PARCEL NUMBER(S):
384-120-46-00

ENGINEER OF WORK:

____

Lucas A. Corsbie, RCE 72588

PREPARED FOR:

Clint Kleppe
2795 E. Cottonwood Parkway, STE 400
Salt Lake City, Utah 84121
480.266.5263

PDP SWQMP PREPARED BY:

Ware Malcomb
3911 Sorrento Valley Blvd, STE 120
San Diego, CA 92121
858.875.1069

DATE OF SWQMP:
September 11, 2024

PLANS PREPARED BY:

Ware Malcomb
3911 Sorrento Valley Blvd, STE 120
San Diego, CA 92121
858.875.1069

PDP SWQMP Template Date: February 2016
PDP SWQMP Preparation Date: February 2024

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TABLE OF CONTENTS

ACRONYMS

APN	Assessor's Parcel Number
BMP	Best Management Practice
HMP	Hydromodification Management Plan
HSG	Hydrologic Soil Group
MS4	Municipal Separate Storm Sewer System
N/A	Not Applicable
NRCS	Natural Resources Conservation Service
PDP	Priority Development Project
PE	Professional Engineer
SC	Source Control
SD	Site Design
SDRWQCB	San Diego Regional Water Quality Control Board
SIC	Standard Industrial Classification
SWQMP	Storm Water Quality Management Plan

SWQMP PREPARER'S
CERTIFICATION PAGE

Project Name: Extra Space Storage - Santee
Permit Application Number: CUP-2024-0001

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the City of Santee BMP Design Manual, which is a design manual for compliance with local City of Santee and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2015-0100) requirements for storm water management.

I have read and understand that the [City Engineer] has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the BMP Design Manual. I certify that this PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP SWQMP by the [City Engineer] is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

____
Engineer of Work's Signature, PE Number & Expiration Date

____
Print Name

____
Company

____
Date

Engineer's Seal:

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SWQMP PROJECT OWNER'S
CERTIFICATION PAGE

Project Name: Extra Space Storage – Santee
Permit Application Number: CUP-2024-0001

PROJECT OWNER'S CERTIFICATION

This PDP SWQMP has been prepared for Clint Kleppe by Ware Malcomb. The PDP SWQMP is intended to comply with the PDP requirements of the City of Santee BMP Design Manual, which is a design manual for compliance with local City of Santee and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2015-0100) requirements for storm water management.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan. Once the undersigned transfers its interests in the property, its successor-in-interest shall bear the aforementioned responsibility to implement the best management practices (BMPs) described within this plan, including ensuring on-going operation and maintenance of structural BMPs. A signed copy of this document shall be available on the subject property into perpetuity.

____
Project Owner's Signature

____
Print Name

____
Company

____
Date

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SUBMITTAL RECORD

Use this Table to keep a record of submittals of this PDP SWQMP. Each time the PDP SWQMP is re-submitted, provide the date and status of the project. In column 4 summarize the changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck comments behind this page.

Submittal Number	Date	Project Status	Summary of Changes
1	2/26/2024	☒ Preliminary Design / Planning/ CEQA ☐ Final Design	Initial Submittal
2	5/23/2024	☒ Preliminary Design / Planning/ CEQA ☐ Final Design	2nd Submittal
3	09/11/2024	☒ Preliminary Design / Planning/ CEQA ☐ Final Design	3rd Submittal
4		☐ Preliminary Design / Planning/ CEQA ☐ Final Design	

PROJECT VICINITY MAP

Project Name: Extra Space Storage - Santee
Permit Application Number: CUP-2024-0001

Applicability of Permanent, Post-Construction Storm Water BMP Requirements (Storm Water Intake Form for all Development Permit Applications)			Form I-1 Model BMP Design Manual [August 31, 2015]
Project Identification			
Project Name: Extra Space Storage – Santee			
Permit Application Number: CUP-2024-0001			Date: 09/11/2024
Project Address: 10835 Santee Woodside Avenue Santee, CA 92071			
Determination of Requirements			
The purpose of this form is to identify permanent, post-construction requirements that apply to the project. This form serves as a short summary of applicable requirements, in some cases referencing separate forms that will serve as the backup for the determination of requirements. Answer each step below, starting with Step 1 and progressing through each step until reaching "Stop". **Upon reaching a Stop, do not complete further Steps beyond the Stop.** Refer to BMP Design Manual sections and/or separate forms referenced in each step below.			
Step	**Answer**	**Progression**	
Step 1: Is the project a "development project"? See Section 1.3 of the BMP Design Manual for guidance.	X Yes	Go to Step 2.	
	☐ No	Stop. Permanent BMP requirements do not apply. No SWQMP will be required. Provide discussion below.	
Discussion / justification if the project is not a "development project" (e.g., the project includes *only* interior remodels within an existing building):			
Step 2: Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? To answer this item, see Section 1.4 of the BMP Design Manual *in its entirety* for guidance, AND complete Form I-2, Project Type Determination.	☐ Standard Project	Stop. Only Standard Project requirements apply, including Standard Project SWQMP.	
	X PDP	Standard and PDP requirements apply, including PDP SWQMP. Go to Step 3.	
	☐ Exception to PDP definitions	Stop. Standard Project requirements apply, and any additional requirements specific to the type of project. Provide discussion and list any additional requirements below. Prepare Standard Project SWQMP.	

Form I-1 Page 2, Form Template Date: August 31, 2015		
[Step 2 Continued from Page 1] Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:		
Step 3 (PDPs only). Is the project subject to earlier PDP requirements due to a prior lawful approval? See Section 1.10 of the BMP Design Manual for guidance.	☐ Yes	Consult the [City Engineer] to determine requirements. Provide discussion and identify requirements below. Go to Step 4.
	☒ No	BMP Design Manual PDP requirements apply. Go to Step 4.
Discussion / justification of prior lawful approval, and identify requirements (*not required if prior lawful approval does not apply*):		
Step 4 (PDPs only). Do hydromodification control requirements apply? See Section 1.6 of the BMP Design Manual for guidance.	☐ Yes	PDP structural BMPs required for pollutant control (Chapter 5) and hydromodification control (Chapter 6). Go to Step 5.
	☒ No	Stop. PDP structural BMPs required for pollutant control (Chapter 5) only. Provide brief discussion of exemption to hydromodification control below.
Discussion / justification if hydromodification control requirements do not apply: The proposed project connects to a hydromod exempt storm drain system. See Attachment 2 for further details.		
Step 5 (PDPs subject to hydromodification control requirements only). Does protection of critical coarse sediment yield areas apply based on review of WMAA Potential Critical Coarse Sediment Yield Area Map? See Section 6.2 of the BMP Design Manual for guidance.	☐ Yes	Management measures required for protection of critical coarse sediment yield areas (Chapter 6.2). Stop.
	☒ No	Management measures not required for protection of critical coarse sediment yield areas. Provide brief discussion below. Stop.

<table>
<tr><td colspan="3">Priority Determination Form</td><td>Form I-2
Model BMP Design Manual
[August 31, 2015]</td></tr>
<tr><td colspan="4">Project Information</td></tr>
<tr><td colspan="4">Project Name: Extra Space Storage – Santee</td></tr>
<tr><td colspan="3">Permit Application Number: CUP-2024-0001</td><td>Date: 09/11/2024</td></tr>
<tr><td colspan="4">Project Address: 10835 Santee Woodside Avenue Santee, CA 92071</td></tr>
<tr><td colspan="4">Project Type Determination: Standard Project or Priority Development Project (PDP)</td></tr>
<tr><td colspan="4">The project is (select one): New Development X Redevelopment</td></tr>
<tr><td colspan="4">The total proposed newly created or replaced impervious area is: 47,878 ft^2 (1.10) acres</td></tr>
<tr><td colspan="4">Is the project in any of the following categories, (a) through (f)?</td></tr>
<tr><td>Yes
X</td><td>No</td><td>(a)</td><td>New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.</td></tr>
<tr><td>Yes
X</td><td>No</td><td>(b)</td><td>Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.</td></tr>
<tr><td>Yes</td><td>No
X</td><td>(c)</td><td>New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses:
(i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812).
(ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater.
(iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce.
(iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.</td></tr>
</table>

Form I-2 Page 2, Form Template Date: August 31, 2015			
Yes	No ☒	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). *Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. See BMP Design Manual Section 1.4.2 for additional guidance.*
Yes	No ☒	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes ☒	No	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. *Note: See BMP Design Manual Section 1.4.2 for additional guidance.*

Does the project meet the definition of one or more of the Priority Development Project categories (a) through (f) listed above?

No – the project is not a Priority Development Project (Standard Project).

☒ Yes – the project is a Priority Development Project (PDP).

The following is for redevelopment PDPs only:

The area of existing (pre-project) impervious area at the project site is: 73,384 ft^2 (A)
The total proposed newly created or replaced impervious area is 47,878 ft^2 (B)
Percent impervious surface created or replaced (B/A)*100: 65%
The percent impervious surface created or replaced is (select one based on the above calculation):

less than or equal to fifty percent (50%) – only new impervious areas are considered PDP

OR

☒ greater than fifty percent (50%) – the entire project site is a PDP

Site Design Checklist For PDPs	Form I-3B (PDPs) Model BMP Design Manual [August 31, 2015]
Project Summary Information	
Project Name	Extra Space Storage - Santee
Project Address	10835 Santee Woodside Avenue Santee, CA 92071
Assessor's Parcel Number(s) (APN(s))	384-120-46-00
Permit Application Number	CUP-2024-0001
Project Hydrologic Unit	Select One: ☐ Santa Margarita 902 ☐ San Luis Rey 903 ☐ Carlsbad 904 ☐ San Dieguito 905 ☐ Penasquitos 906 ☒ San Diego 907 ☐ Pueblo San Diego 908 ☐ Sweetwater 909 ☐ Otay 910 ☐ Tijuana 911
Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	San Diego, Lower San Diego, Santee 907.12
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	__2.81___ Acres (___121,968___ Square Feet)
Area to be Disturbed by the Project (Project Area)	____1.29____ Acres (___56,222___ Square Feet)
Project Proposed Impervious Area (subset of Project Area)	____1.10____ Acres (___47,878___ Square Feet)
Project Proposed Pervious Area (subset of Project Area)	____0.19____ Acres (___8,344___ Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	

Form I-3B Page 2 of 10, Form Template Date: August 31, 2015
Description of Existing Site Condition
Current Status of the Site (select all that apply): ☒ Existing development ☐ Previously graded but not built out ☐ Demolition completed without new construction ☐ Agricultural or other non-impervious use ☐ Vacant, undeveloped/natural Description / Additional Information: The existing site is developed with an existing RV parking lot, four (4) existing storage buildings and asphalt drive aisle.
Existing Land Cover Includes (select all that apply): ☒ Vegetative Cover ☐ Non-Vegetated Pervious Areas ☒ Impervious Areas Description / Additional Information: The existing site is developed with an existing RV parking lot, four (4) existing storage buildings and asphalt drive aisle. There is vegetation along the perimeter of the site and minimal landscape area around the existing RV parking lot.
Underlying Soil belongs to Hydrologic Soil Group (select all that apply): ☐ NRCS Type A ☐ NRCS Type B ☒ NRCS Type C ☐ NRCS Type D

Approximate Depth to Groundwater (GW): ☐ GW Depth < 5 feet ☐ 5 feet < GW Depth < 10 feet ☐ 10 feet < GW Depth < 20 feet ☒ GW Depth > 20 feet
Existing Natural Hydrologic Features (select all that apply): ☐ Watercourses ☐ Seeps ☐ Springs ☐ Wetlands ☒ None Description / Additional Information: There are no existing natural hydrologic features near the site.

Form I-3B Page 3 of 10, Form Template Date: August 31, 2015
Description of Existing Site Drainage Patterns

How is storm water runoff conveyed from the site? At a minimum, this description should answer:

(1) whether existing drainage conveyance is natural or urban;

(2) Is runoff from offsite conveyed through the site? if yes, quantify all offsite drainage areas, design flows, and locations where offsite flows enter the project site, and summarize how such flows are conveyed through the site;

(3)Provide details regarding existing project site drainage conveyance network, including any existing storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels; and

(4) Identify all discharge locations from the existing project site along with a summary of conveyance system size and capacity for each of the discharge locations. Provide summary of the pre-project drainage areas and design flows to each of the existing runoff discharge locations.

Describe existing site drainage patterns:

1) The existing drainage conveyance of the site is urban. The existing 2.81 acre project site is developed as a commercial storage development with four (4) existing storage buildings and a gravel parking lot.

2) There is runoff from offsite conveyed through the site. Offsite areas from the south and the east discharges offsite runoff onto the project site. A total of 3.48 acres of onsite and offsite drainage area was analyzed. The project site is split into several drainage areas discharge into three (3) points of compliance (POC)s.

3,4) The existing site is developed. The site consists of three (3) drainage basins. Drainage Basin 1A and 1B combine for a total area of 2.61 acres that discharge to POC 1. Drainage Basin 1A consists of the existing storage buildings, drive aisles and some landscape areas. Runoff sheets flows towards an existing concrete swale that then covey flows towards the ROW. Drainage Basin 1B consists of the existing RV parking lot and associated landscape areas. Flow from the parking lot sheet flow towards an existing concrete swale the west that then conveys flows north to confluence with flows with Drainage Basin 1A at the driveway prior to discharging into the Woodside Avenue (POC 1). Runoff is conveyed via curb and gutter north until it enters the City of Santee public storm drain system. Existing run-on is no conveyed through Drainage Basin 1.

Drainage Basin 2B consists of 0.25 acres. Drainage Basin 2B consists of existing offsite run-on from the residential properties to the south and a portion of the existing RV parking lot and associated landscape areas. The existing run-on flows from the southern residential properties enter the site through an existing concrete swale at the southern property line. Flows are conveyed to the west in the concrete swale towards Woodside Avenue. A portion of existing runoff from the project site confluences with the existing run-on prior to discharging into Woodside Avenue via an existing 12-inch storm drain pipe (POC 2). Runoff then flows south via curb and gutter and then eventually enters the City of Santee public storm drain system.

Drainage Basin 3A consist of 0.60 acres. Drainage Basin 3A consists of existing run-on from a portion of the southern residential properties and a portion of the existing landscape slope to the east. Run-on flows are conveyed north via an existing concrete swale. Flows continue north onto to the adjacent property via the concrete swale where it ultimately discharges on Woodside avenue via a curb outlet and then ultimately enters the City of Santee public storm drain system. 100-year flow was not analyzed for Drainage Basin 3A.

Refer to Hydrology Report for the project site for detailed calculations.

Form I-3B Page 4 of 10, Form Template Date: August 31, 2015
Description of Proposed Site Development
Project Description / Proposed Land Use and/or Activities: The project proposes to re-develop a portion of the property into a four-story storage building and associated site improvements. The total property is 2.81 acres of land, but the proposed project will disturb 1.29 acres of the entire site. The site is bounded by Woodside Avenue to the west, existing commercial development to the north, California State Route 67 to the east, and residential development to the south.
List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features): Proposed impervious features of the redevelopment project consist of building, drive aisles, parking stalls, and sidewalk.
List/describe proposed pervious features of the project (e.g., landscape areas): Proposed pervious features include site landscaping areas.
Does the project include grading and changes to site topography? ☒ Yes ☐ No Description / Additional Information: Proposed site grading was designed to convey runoff away from the proposed building to the planned onsite storm drain facilities which capture, store, and treat stormwater runoff before conveying runoff to discharge locations in accordance with existing drainage patterns.

Form I-3B Page 5 of 10, Form Template Date: August 31, 2015
Description of Proposed Site Drainage Patterns

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?

☒ Yes

☐ No

If yes, provide details regarding the proposed project site drainage conveyance network, including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels, and the method for conveying offsite flows through or around the proposed project site. Identify all discharge locations from the proposed project site along with a summary of the conveyance system size and capacity for each of the discharge locations. Provide a summary of pre- and post-project drainage areas and design flows to each of the runoff discharge locations. Reference the drainage study for detailed calculations.

Describe proposed site drainage patterns:

The project proposes the development of a four-story storage building along, parking stalls and associated site improvements. The proposed project will encompass 1.29 acres of the 2.81 acre project site. The proposed project site will maintain the three (3) drainage basins. Due to site constraints, Drainage Basin 1 and 2 will not match the existing drainage basin area. However, the discharge 100-year flow rate leaving the site will be below existing conditions.

Drainage Basin 1A consist of 0.88 acres of the proposed project. Basin 1A consist of a portion of the proposed building, a portion of the exiting storage buildings, new and existing drive aisle and some landscape area. Runoff sheet flows from east to west towards a proposed modular wetland with a curb inlet for stormwater treatment only. Flows then discharge towards Woodside Avenue via a curb outlet at the northwest corner of the site (POC 1). Runoff flows will be conveyed north via curb and gutter where it ultimately enters the City of Santee public storm drain system. The area discharging to POC 1 in proposed conditions is less than existing conditions.

Drainage Basin 2A and 2B combined consist of 1.98 acres and discharge at POC 2. Drainage Basin 2A consists of a majority of the proposed building area, existing storage buildings, new and existing drive aisles, and landscape area. Basin 2A drains from east to west via sheet flow and pipe flow and eventually discharges into the underground detention vault. Due to the increased area in Drainage Basin 2, the underground detention vault is used to attenuate the increased 100-year flow. The underground detention vault is designed to detain the 100-year flow and the required stormwater treatment. Low flows will charge to the proposed modular wetland for stormwater treatment and high flows will discharge directly into the proposed storm drain system. Flows ultimately discharge towards Woodside Avenue via pipe flow. Drainage Basin 2B consists of existing run-on from the residential properties to the south. Flows are conveyed onto the site via an existing concrete swale at the southern property line. Existing run-on flows are conveyed west towards a proposed catch basin and discharge via pipe flow to the proposed storm drain system in Woodside Avenue. Flows from Drainage Basin 2A and 2B confluence together at POC 2 then connect to the City of Santee public storm drain system

Drainage Basin 3A will remain the same as in existing conditions and will remain undisturbed.
See Hydrology Report for detailed calculations of proposed flows

Form I-3B Page 6 of 10, Form Template Date: August 31, 2015
Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply): ☒ On-site storm drain inlets ☒ Interior floor drains and elevator shaft sump pumps ☐ Interior parking garages ☒ Need for future indoor & structural pest control ☒ Landscape/Outdoor Pesticide Use ☐ Pools, spas, ponds, decorative fountains, and other water features ☐ Food service ☒ Refuse areas ☐ Industrial processes ☐ Outdoor storage of equipment or materials ☐ Vehicle and Equipment Cleaning ☐ Vehicle/Equipment Repair and Maintenance ☐ Fuel Dispensing Areas ☐ Loading Docks ☐ Fire Sprinkler Test Water ☐ Miscellaneous Drain or Wash Water ☒ Plazas, sidewalks, and parking lots Description / Additional Information:

Form I-3B Page 7 of 10, Form Template Date: August 31, 2015		
Identification and Narrative of Receiving Water and Pollutants of Concern		
Describe flow path of storm water from the project site discharge location(s), through urban storm conveyance systems as applicable, to receiving creeks, rivers, and lagoons as applicable, and ultimate discharge to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable): Onsite Runoff is conveyed to public storm drain in Woodside Avenue and is discharged to the San Vicente Creek- San Diego River and ultimately the Pacific Ocean.		
List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs and/or Highest Priority Pollutants from the WQIP for the impaired water bodies:		
303(d) Impaired Water Body	**Pollutant(s)/Stressor(s)**	**TMDLs / WQIP Highest Priority Pollutant**
Forester Creek	Benthic Community Effects, Indicator Bacteria, Nitrogen, dissolved oxygen, phosphorous, total dissolved solids, cadmium, and toxicity.	Indicator Bacteria
San Diego River (Lower)	Benthic Community Effects, Bifenthrin, Chlordane, Chloride, Color, Cyfluthrin, Cypermethrin, Indicator Bacteria, Nitrogen, DO, Permethrin, Phosphorus, Pyrethroids, Total Dissolved solids, Toxicity, Turbidity	Indicator Bacteria

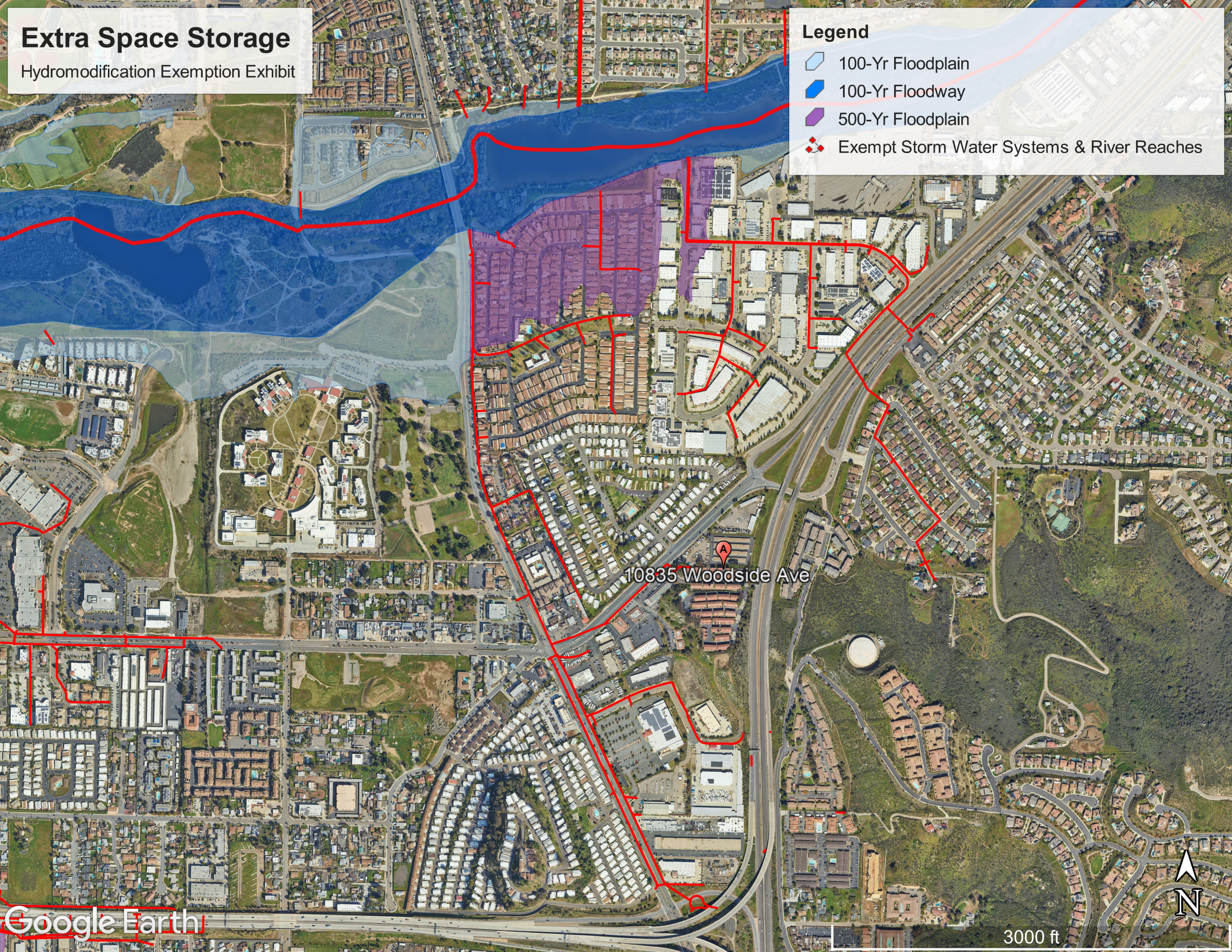
Identification of Project Site Pollutants*

***Identification of project site pollutants is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs (note the project must also participate in an alternative compliance program unless prior lawful approval to meet earlier PDP requirements is demonstrated)**

Identify pollutants expected from the project site based on all proposed use(s) of the site (see BMP Design Manual Appendix B.6):

Pollutant	Not Applicable to the Project Site	Expected from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment			
Nutrients			
Heavy Metals			
Organic Compounds			
Trash & Debris			
Oxygen Demanding Substances			
Oil & Grease			
Bacteria & Viruses			
Pesticides			

Form I-3B Page 8 of 10, Form Template Date: August 31, 2015
Hydromodification Management Requirements
Do hydromodification management requirements apply (see Section 1.6 of the BMP Design Manual)? ☐ Yes, hydromodification management flow control structural BMPs required. ☐ No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean. ☐ No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean. ☒ No, the project will discharge runoff directly to an area identified as appropriate for an exemption by the WMAA for the watershed in which the project resides. Description / Additional Information (to be provided if a 'No' answer has been selected above): The proposed project is hydromod exempt. The project proposes to collect stormwater runoff via a proposed storm drain system that connects to an exempt storm drain system. See Hydromodification Exempt Exhibit.



Extra Space Storage
Hydromodification Exemption Exhibit
Legend
100-Yr Floodplain
100-Yr Floodway
500-Yr Floodplain
Exempt Storm Water Systems & River Reaches
10835 Woodside Ave
A
Google Earth
3000 ft
N

Critical Coarse Sediment Yield Areas* *This Section only required if hydromodification management requirements apply
Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries? ☐ Yes ☒ No, No critical coarse sediment yield areas to be protected based on WMAA maps If yes, have any of the optional analyses presented in Section 6.2 of the BMP Design Manual been performed? ☐ 6.2.1 Verification of Geomorphic Landscape Units (GLUs) Onsite ☐ 6.2.2 Downstream Systems Sensitivity to Coarse Sediment ☐ 6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite ☐ No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps If optional analyses were performed, what is the final result? ☐ No critical coarse sediment yield areas to be protected based on verification of GLUs onsite ☐ Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 2.b of the SWQMP. ☐ Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections 6.2.4 and 6.2.5 as applicable, and the areas are identified on the SWQMP Exhibit. Discussion / Additional Information:

Form I-3B Page 9 of 10, Form Template Date: August 31, 2015
Flow Control for Post-Project Runoff* ***This Section only required if hydromodification management requirements apply**
List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit. N/A . The site is hydromod exempt
Has a geomorphic assessment been performed for the receiving channel(s)? ☐ No, the low flow threshold is 0.1Q2 (default low flow threshold) ☐ Yes, the result is the low flow threshold is 0.1Q2 ☐ Yes, the result is the low flow threshold is 0.3Q2 ☐ Yes, the result is the low flow threshold is 0.5Q2 If a geomorphic assessment has been performed, provide title, date, and preparer: N/A Discussion / Additional Information: (optional) N/A

Form I-3B Page 10 of 10, Form Template Date: August 31, 2015
Other Site Requirements and Constraints
When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements. The disturbance is greater than 50%, so the entire site will have to be treated. There is limited space for a traditional biofiltration basin, so proprietary BMPs will be used
Optional Additional Information or Continuation of Previous Sections As Needed
This space provided for additional information or continuation of information from previous sections as needed.

Source Control BMP Checklist for All Development Projects (Standard Projects and Priority Development Projects)	Form I-4 Model BMP Design Manual [August 31, 2015]

Project Identification

Project Name: Extra Space Storage - Santee

Permit Application Number: CUP-2024-0001

Source Control BMPs

All development projects must implement source control BMPs SC-1 through SC-6 where applicable and feasible. See Chapter 4 and Appendix E of the Model BMP Design Manual for information to implement source control BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the source control BMP as described in Chapter 4 and/or Appendix E of the Model BMP Design Manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification may be provided.

Source Control Requirement	Applied?		
SC-1 Prevention of Illicit Discharges into the MS4	☒ Yes	☐ No	☐ N/A
Discussion / justification if SC-1 not implemented:			
SC-2 Storm Drain Stenciling or Signage	☒ Yes	☐ No	☐ N/A
Discussion / justification if SC-2 not implemented:			
SC-3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	☒ N/A
Discussion / justification if SC-3 not implemented: N/A			
SC-4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	☒ N/A
Discussion / justification if SC-4 not implemented: N/A			

Form I-4 Page 2 of 2, Form Template Date: August 31, 2015			
Source Control Requirement	**Applied?**		
SC-5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	X Yes	☐ No	☐ N/A
Discussion / justification if SC-5 not implemented:			
SC-6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below)			
☐ On-site storm drain inlets	X Yes	☐ No	☐ N/A
☐ Interior floor drains and elevator shaft sump pumps	X Yes	☐ No	☐ N/A
☐ Interior parking garages	☐ Yes	☐ No	X N/A
☐ Need for future indoor & structural pest control	X Yes	☐ No	☐ N/A
☐ Landscape/Outdoor Pesticide Use	X Yes	☐ No	☐ N/A
☐ Pools, spas, ponds, decorative fountains, and other water features	☐ Yes	☐ No	X N/A
☐ Food service	☐ Yes	☐ No	X N/A
☐ Refuse areas	X Yes	☐ No	☐ N/A
☐ Industrial processes	☐ Yes	☐ No	X N/A
☐ Outdoor storage of equipment or materials	☐ Yes	☐ No	X N/A
☐ Vehicle and Equipment Cleaning	☐ Yes	☐ No	X N/A
☐ Vehicle/Equipment Repair and Maintenance	☐ Yes	☐ No	X N/A
☐ Fuel Dispensing Areas	☐ Yes	☐ No	X N/A
☐ Loading Docks	☐ Yes	☐ No	X N/A
☐ Fire Sprinkler Test Water	☐ Yes	☐ No	X N/A
☐ Miscellaneous Drain or Wash Water	☐ Yes	☐ No	X N/A
☐ Plazas, sidewalks, and parking lots	X Yes	☐ No	☐ N/A

Discussion / justification if SC-6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for <u>all</u> "No" answers shown above.

Site Design BMP Checklist for All Development Projects (Standard Projects and Priority Development Projects)				Form I-5 Model BMP Design Manual [August 31, 2015]
Project Identification				
Project Name: Extra Space Storage - Santee				
Permit Application Number: CUP-2024-0001				
Site Design BMPs				

All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the Model BMP Design Manual for information to implement site design BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the site design BMP as described in Chapter 4 and/or Appendix E of the Model BMP Design Manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification may be provided.

Site Design Requirement	Applied?		
SD-1 Maintain Natural Drainage Pathways and Hydrologic Features	☐ Yes	☐ No	X N/A
Discussion / justification if SD-1 not implemented: The site is already developed			
SD-2 Conserve Natural Areas, Soils, and Vegetation	☐ Yes	☐ No	X N/A
Discussion / justification if SD-2 not implemented: The site is already developed			
SD-3 Minimize Impervious Area	X Yes	☐ No	☐ N/A
Discussion / justification if SD-3 not implemented: Impervious Area is limited to the proposed building and supporting site elements necessary to a functional development.			
SD-4 Minimize Soil Compaction	☐ Yes	☐ No	X N/A
Discussion / justification if SD-4 not implemented: Site is already developed			
SD-5 Impervious Area Dispersion	☐ Yes	☐ No	X N/A
Discussion / justification if SD-5 not implemented: Limited landscape area not feasible for area dispersion			

Form I-5 Page 2 of 2, Form Template Date: August 31, 2015			
Site Design Requirement	**Applied?**		
SD-6 Runoff Collection	X Yes	☐ No	☐ N/A
Discussion / justification if SD-6 not implemented:			
SD-7 Landscaping with Native or Drought Tolerant Species	X Yes	☐ No	☐ N/A
Discussion / justification if SD-7 not implemented:			
SD-8 Harvesting and Using Precipitation	☐ Yes	☐ No	X N/A
Discussion / justification if SD-8 not implemented: Refer to Form I-7, Attachment 1c of this SWQMP			

Summary of PDP Structural BMPs	Form I-6 (PDPs) Model BMP Design Manual [August 31, 2015]

Project Identification
Project Name: Extra Space Storage - Santee
Permit Application Number: CUP-2024-0001
PDP Structural BMPs
All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the BMP Design Manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the BMP Design Manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s). PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative and engineer of record to certify construction of the structural BMPs (see Section 1.12 of the BMP Design Manual). PDP structural BMPs must be maintained into perpetuity, and the local jurisdiction must confirm the maintenance (see Section 7 of the BMP Design Manual). Use this form to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP). Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the BMP Design Manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate. The building footprint encompasses a majority of the site, leaving minimal space to implement infiltration or partial retention BMPs for the entire site. Based on the geotechnical review letter included in Attachment 1d, the project site is classified as no infiltration condition; therefore bioretention basins were deemed infeasible. The harvest and reuse for toilet demand was considered infeasible per Attachment 1c. Therefore, the other effective BMP that is feasible to implement is a proprietary biofiltration unit. The BMP implemented for this project is the Modular Wetland System (MWS). Per Section F.2.2 in Appendix F of the City of Santee BMP Design Manual, proprietary BMP 1 and BMP 2 sized as volume based. For the volume based BMPs, the minimum volume calculation for water quality treatment was determined using Worksheet B.6-1 in Attachment 1e of this report. The calculated treatment volume was then used to select the appropriately sized model unit.

The selected biofiltration unit has a small footprint and meets the requirements per Section B.6.3. Runoff will be collected and conveyed to the biofiltration unit before flowing offsite via storm drain system.

Since the modular wetland system does not meet the minimum three percent surface area required, tree credit volume will be used to meet the volume retention requirements. Reference Attachment 1e for pollutant control worksheets.

The Modular Wetland Units will be maintained in accordance with manufacturer guidelines and conditions.

The proposed MWS will be for pollutant control only. The site is hydromod exempt. The proposed underground storage system is proposed to attenuate the increase in the 100-year flow rate prior to discharging to the proposed storm drain system that connects to the existing hydromod exempt storm drain system.

(Continue on page 2 as necessary.)

Form I-6 Page 2 of 8, Form Template Date: August 31, 2015
(Page reserved for continuation of description of general strategy for structural BMP implementation at the site)
(Continued from page 1)

Form I-6 Page 3 of 8 (Copy as many as needed) , Form Template Date: August 31, 2015	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP 1	
Construction Plan Sheet No. C3.0	
Type of structural BMP: ☐ Retention by harvest and use (HU-1) ☐ Retention by infiltration basin (INF-1) ☐ Retention by bioretention (INF-2) ☐ Retention by permeable pavement (INF-3) ☐ Partial retention by biofiltration with partial retention (PR-1) ☐ Biofiltration (BF-1) ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒ Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐ Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐ Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐ Detention pond or vault for hydromodification management ☐ Other (describe in discussion section below)	
Purpose: ☒ Pollutant control only ☐ Hydromodification control only ☐ Combined pollutant control and hydromodification control ☐ Pre-treatment/forebay for another structural BMP ☐ Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)	Ware Malcomb 3911 Sorrento Valley Blvd, #120 San Diego, CA 92121 Attn: Samuel Bellomio, PE, sbellomio@waremalcomb.com 858.875.1069
Who will be the final owner of this BMP?	Private owner: Extra Space Storage 2795 E. Cottonwood Parkway, Ste 400, Salt Lake City, Utah 84121 Attn: Clint Kleppe, ckleppe@extraspace.com 480.266.5263
Who will maintain this BMP into perpetuity?	Private Owner
What is the funding mechanism for maintenance?	Private Financing

Form I-6 Page 4 of 8 (Copy as many as needed) , Form Template Date: August 31, 2015
Structural BMP ID No. BMP 1
Construction Plan Sheet No. C3.0
Discussion (as needed): Modular Wetlands System MWS L-4-17-V treats stormwater from DMA 1.

Form I-6 Page 5 of 8 (Copy as many as needed) , Form Template Date: August 31, 2015	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP 2	
Construction Plan Sheet No. C3.0	
Type of structural BMP: ☐ Retention by harvest and use (HU-1) ☐ Retention by infiltration basin (INF-1) ☐ Retention by bioretention (INF-2) ☐ Retention by permeable pavement (INF-3) ☐ Partial retention by biofiltration with partial retention (PR-1) ☐ Biofiltration (BF-1) ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒ Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐ Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐ Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐ Detention pond or vault for hydromodification management ☐ Other (describe in discussion section below)	
Purpose: ☒ Pollutant control only ☐ Hydromodification control only ☐ Combined pollutant control and hydromodification control ☐ Pre-treatment/forebay for another structural BMP ☐ Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)	Ware Malcomb 3911 Sorrento Valley Blvd, #120 San Diego, CA 92121 Attn: Samuel Bellomio, PE, sbellomio@waremalcomb.com 858.875.1069
Who will be the final owner of this BMP?	Private owner: Extra Space Storage 2795 E. Cottonwood Parkway, Ste 400, Salt Lake City, Utah 84121 Attn: Clint Kleppe, ckleppe@extraspace.com 480.266.5263
Who will maintain this BMP into perpetuity?	Private Owner
What is the funding mechanism for maintenance?	Private Financing

Form I-6 Page 6 of 8 (Copy as many as needed) , Form Template Date: August 31, 2015
Structural BMP ID No. BMP -2
Construction Plan Sheet No. C3.0
Discussion (as needed): Modular Wetlands System MWS L-8-8-V treats stormwater from DMA 2.

Form I-6 Page 7 of 8 (Copy as many as needed) , Form Template Date: August 31, 2015	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. Underground Detention Vaults	
Construction Plan Sheet No. C3.0	
Type of structural BMP: ☐ Retention by harvest and use (HU-1) ☐ Retention by infiltration basin (INF-1) ☐ Retention by bioretention (INF-2) ☐ Retention by permeable pavement (INF-3) ☐ Partial retention by biofiltration with partial retention (PR-1) ☐ Biofiltration (BF-1) ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2) ☐ Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐ Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐ Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐ Detention pond or vault for hydromodification management ☒ Other (describe in discussion section below)	
Purpose: ☐ Pollutant control only ☐ Hydromodification control only ☐ Combined pollutant control and hydromodification control ☐ Pre-treatment/forebay for another structural BMP ☒ Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)	Ware Malcomb 3911 Sorrento Valley Blvd, #120 San Diego, CA 92121 Attn: Samuel Bellomio, PE, sbellomio@waremalcomb.com 858.875.1069
Who will be the final owner of this BMP?	Private owner: Extra Space Storage 2795 E. Cottonwood Parkway, Ste 400, Salt Lake City, Utah 84121 Attn: Clint Kleppe, ckleppe@extraspace.com 480.266.5263
Who will maintain this BMP into perpetuity?	Private Owner
What is the funding mechanism for maintenance?	Private Financing

Form I-6 Page 8 of 8 (Copy as many as needed) , Form Template Date: August 31, 2015
Structural BMP ID No. Underground Detention Vaults
Construction Plan Sheet No. C3.0
Discussion (as needed): Underground Detention Vaults: for 100-year attenuation Volume provided: 4,187 cf Length: 104ft Width: 16ft Inside Height: 3ft

ATTACHMENT 1
BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	**Contents**	**Checklist**
Attachment 1a	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this Attachment cover sheet.	X Included
Attachment 1b	Tabular Summary of DMAs Showing DMA ID matching DMA Exhibit, DMA Area, and DMA Type (Required)* *Provide table in this Attachment OR on DMA Exhibit in Attachment 1a	X Included on DMA Exhibit in Attachment 1a ☐ Included as Attachment 1b, separate from DMA Exhibit
Attachment 1c	Form I-7, Harvest and Use Feasibility Screening Checklist (Required unless the entire project will use infiltration BMPs) Refer to Appendix B.3-1 of the BMP Design Manual to complete Form I-7.	X Included ☐ Not included because the entire project will use infiltration BMPs
Attachment 1d	Form I-8, Categorization of Infiltration Feasibility Condition (Required unless the project will use harvest and use BMPs) Refer to Appendices C and D of the BMP Design Manual to complete Form I-8.	X Included ☐ Not included because the entire project will use harvest and use BMPs
Attachment 1e	Pollutant Control BMP Design Worksheets / Calculations (Required) Refer to Appendices B and E of the BMP Design Manual for structural pollutant control BMP design guidelines	X Included

Use this checklist to ensure the required information has been included on the DMA Exhibit:

The DMA Exhibit must identify:

☒ Underlying hydrologic soil group

☒ Approximate depth to groundwater

☒ Existing natural hydrologic features (watercourses, seeps, springs, wetlands)

☒ Critical coarse sediment yield areas to be protected

☒ Existing topography and impervious areas

☒ Existing and proposed site drainage network and connections to drainage offsite

☒ Proposed demolition

☒ Proposed grading

☒ Proposed impervious features

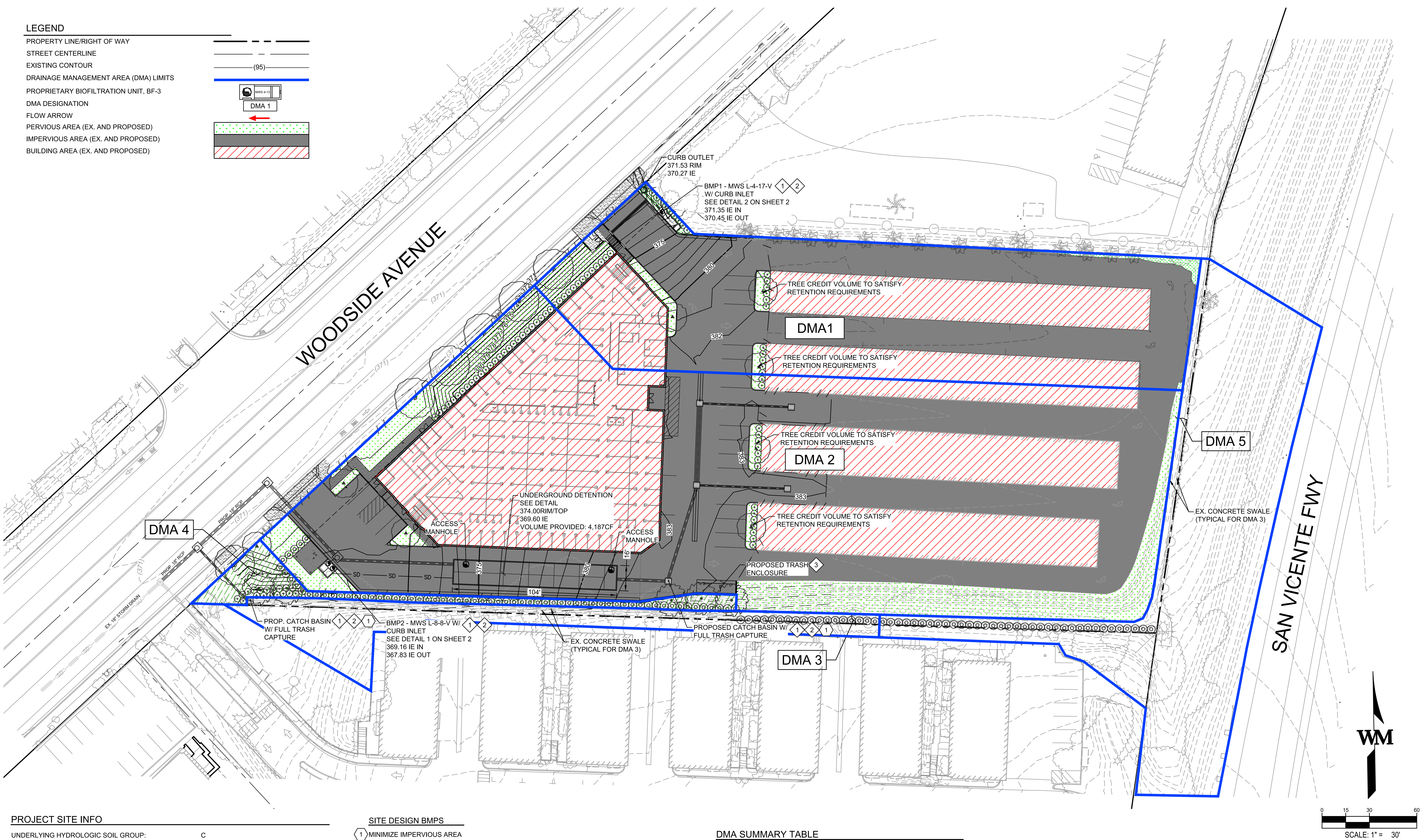
☒ Proposed design features and surface treatments used to minimize imperviousness

☒ Drainage management area (DMA) boundaries, DMA ID numbers, and DMA areas (square footage or acreage), and DMA type (i.e., drains to BMP, self-retaining, or self-mitigating)

☒ Potential pollutant source areas and corresponding required source controls (see Chapter 4, Appendix E.1, and Form I-3B)

☒ Structural BMPs (identify location, type of BMP, and size/detail)

CAUTION: IF THIS SHEET IS NOT 24"x36" IT IS A REDUCED PRINT



PROJECT SITE INFO

UNDERLYING HYDROLOGIC SOIL GROUP:	C
APPROXIMATE DEPTH TO GROUNDWATER:	20 FT±
EXISTING NATURAL HYDROLOGIC FEATURES (WATERCOURSES, SEEPS, SPRINGS, WETLANDS):	NONE
CRITICAL COARSE SEDIMENT YIELD AREAS TO BE PROTECTED:	NONE
TOTAL DISTURBED AREA	56,222 SF
EXISTING IMPERVIOUS AREA:	18,423 SF
EXISTING SEMI-PERVIOUS AREA:	30,720 SF
EXISTING PERVIOUS AREA:	7,079 SF
PROPOSED IMPERVIOUS AREA:	47,878 SF
PROPOSED PERVIOUS AREA:	8,344 SF

PERMANENT STORMWATER BMP NOTES:

PROPRIETARY BMP (BF-3, PROPRIETARY BIOFILTRATION)

POLLUTANT CONTROL ONLY

RESPONSIBLE PARTY:

EXTRA SPACE STORAGE, OWNER OF THE PROPERTY, IS RESPONSIBLE FOR THE MAINTENANCE OF THE MWS UNITS, UNDERGROUND DETENTION SYSTEM, EXISTING CONCRETE SWALES, PROPOSED TREES TO MEET VOLUME RETENTION REQUIREMENTS, AND FULL TRASH CAPTURE DEVICES

SITE DESIGN BMPS

1. MINIMIZE IMPERVIOUS AREA
2. RUNOFF COLLECTION
3. LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES

SOURCE CONTROL BMPS

1. SC-1 PREVENTION OF ILLICIT DISCHARGE INTO THE MS4
2. SC-2 STORM DRAIN STENCILING OR SIGNAGE
3. SC-5 PROTECT TRASH STORAGE AREAS FROM RAINFALL, RUN-ON, RUNOFF AND WIND DISPERSAL

NOTE:

EXISTING STORM DRAIN INLETS COSID 2241 & 2340 ON WOODSIDE AVENUE TO BE EQUIPPED WITH FULL TRASH CAPTURE DEVICE AS PART OF THE PROJECT'S CONDITIONS OF APPROVAL

DMA SUMMARY TABLE

DMA SUMMARY TABLE

DMA ID	SOIL TYPE	AREA (AC)	AREA (SF)	IMPERVIOUS AREA (SF)	PERVIOUS AREA (SF)	IMPERVIOUS %	IMPERVIOUS RUNOFF FACTOR	PERVIOUS RUNOFF FACTOR	C-VALUE	TREATMENT FLOWRATE REQUIRED (CFS)	TREATMENT FLOWRATE PROVIDED (CFS)	TREATMENT VOLUME REQUIRED (FT3)	TREATMENT VOLUME PROVIDED (FT3)	TREATMENT PROVIDED
1	C	0.80	34,906	32,602	2,304	93%	0.90	0.10	0.85	0.204		-	-	BMP1 (PROPRIETARY BMP)
2	C	1.83	79,701	68,795	10,906	86%	0.90	0.10	0.79	-	-	2,447	2,447	BMP2 (PROPRIETARY BMP)
3	C	0.17	7,224	-	-	-	-	-	-	-	-	-	-	EX. RUN ON (BYPASSES TREATMENT
4	C	0.07	3,001	0	3,001	0%	0.90	0.10	0.10	-	-	-	-	SELF MITIGATING AREA
5	C	0.60	26,000	-	-	-	-	-	-	-	-	-	-	EX. RUN ON (BYPASSES TREATMENT

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FOR AND ON BEHALF OF WARE MALCOMB

ATTACHMENT 1a & 1b
DMA EXHIBIT
EXTRA SPACE STORAGE - SANTEE

NO.	DATE	REMARKS

JOB NO.:	
PA / PM:	
DESIGNED:	
DATE:	
PLOT DATE:	09/05/24

SHEET

1

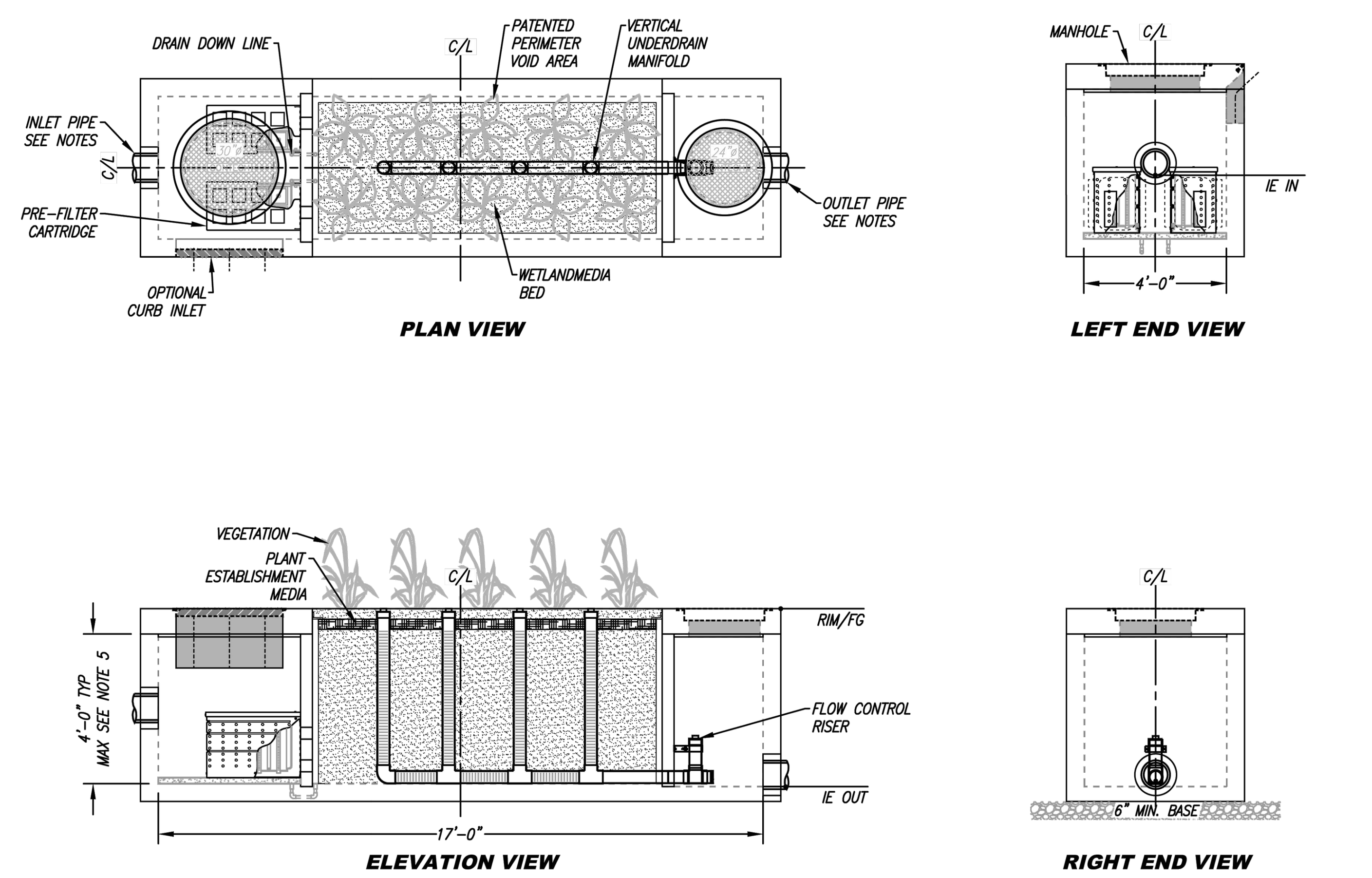
Sheet 1 of 2

NOT FOR CONSTRUCTION

CAUTION: IF THIS SHEET IS NOT 24"x36" IT IS A REDUCED PRINT

SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
TREATMENT FLOW (CFS)			
PRETREATMENT LOADING RATE (GPM/SF)			2.1 GPM/SF
WETLAND MEDIA LOADING RATE (GPM/SF)			1.0
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			(CFS)
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
NOTES:			

* PRELIMINARY ONLY - NOT FOR CONSTRUCTION



INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
3. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
4. CONTRACTOR RESPONSIBLE FOR CONTACTING CONTECH FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.
5. VERTICAL HEIGHT VARIES BASED ON SITE SPECIFIC REQUIREMENTS.

8/14/23SCOTT.SERTICH

MODULAR WETLANDS

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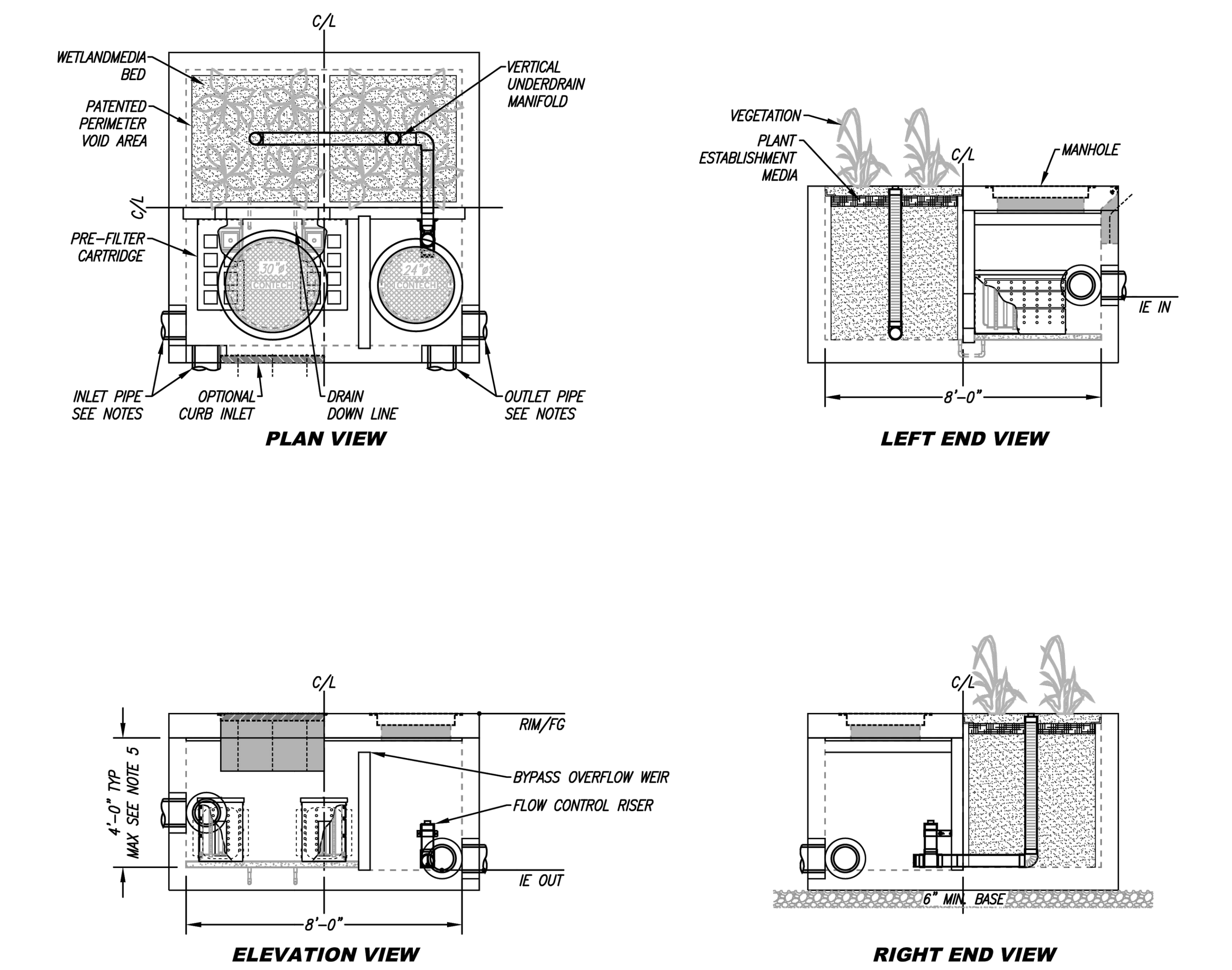
MWS-L-4-17-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

BMP1 - CONTECH MODULAR WETLAND SYSTEM (PVT.)

NOT TO SCALE

SITE SPECIFIC DATA			
PROJECT NUMBER	SDG23-4007		
PROJECT NAME	Extra Space Storage		
PROJECT LOCATION	Santee, CA		
STRUCTURE ID	BMP2		
TREATMENT REQUIRED			
TREATMENT FLOW (CFS)			0.220
PRETREATMENT LOADING RATE (GPM/SF)			3.0 GPM/SF
WETLAND MEDIA LOADING RATE (GPM/SF)			1.0
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			____ (CFS)
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
NOTES:			

* PRELIMINARY ONLY - NOT FOR CONSTRUCTION



INSTALLATION NOTES

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4. CONTRACTOR RESPONSIBLE FOR CONTACTING CONTECH FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.
5. VERTICAL HEIGHT VARIES BASED ON SITE SPECIFIC REQUIREMENTS.

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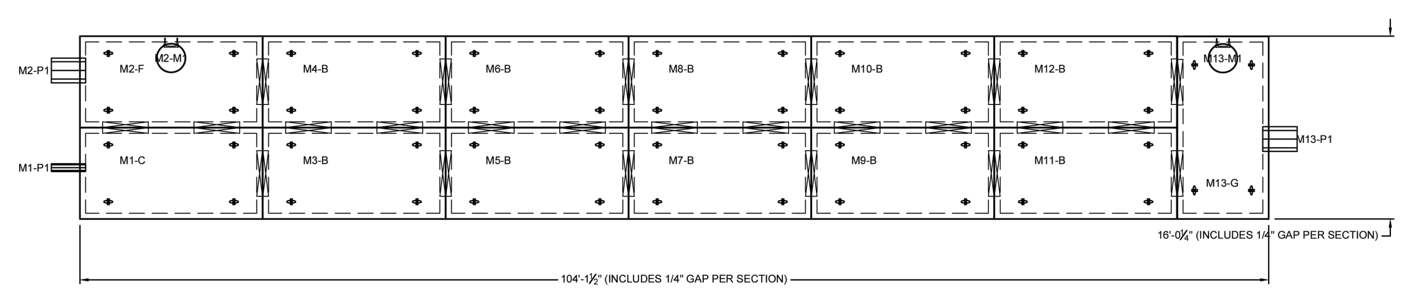
MWS-L-8-8-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

BMP2 - CONTECH MODULAR WETLAND SYSTEM (PVT.)

NOT TO SCALE



PLAN VIEW
SCALE: 3/32" = 1'-0"

MODULE NOTES		
TYPE	QUANTITY	HEIGHT
B	10	3.00'
C	1	3.00'
F	1	3.00'
G	1	3.00'
TOTAL	13	
VOLUME	4,187	CUBIC FEET

PIPE SCHEDULE		
PIPE	SIZE	INVERT
M1-P1	6" HDPE	369.60'
M13-P1	18" HDPE	371.10'
M2-P1	18" HDPE	371.10'

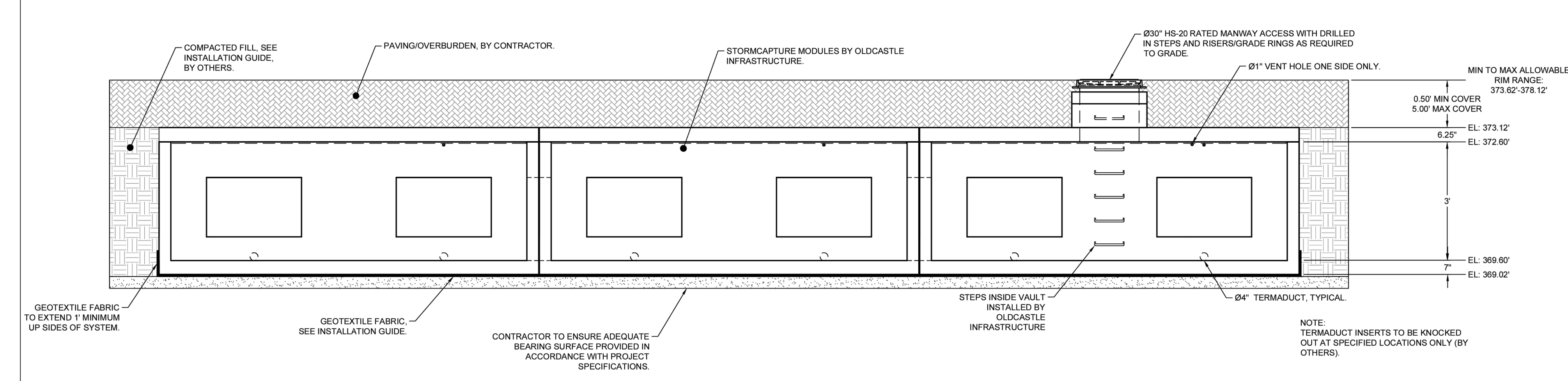
MANHOLE SCHEDULE		
MANHOLE	TYPE	RIM
M13-M1	30" DIA. F&C Steps	374.00'
M2-M1	30" DIA. F&C Steps	374.00'

DESIGN NOTES

1. LIVE LOADING CRITERIA:
   - A. AASHTO HS-20-44 DESIGN TRUCK (WITH IMPACT AT 0.50FT MINIMUM COVER)
   - B. LATERAL LIVE LOAD SURCHARGE: 80 PSF (TO 8.00FT DEPTH)
   - C. NO LATERAL SURCHARGE(S) FROM ANY ADJACENT BUILDINGS, WALLS, FOUNDATIONS, OR ANY ADDITIONAL SITE ELEMENTS.
2. SOIL LOADING CRITERIA:
   - A. SOIL COVER DEPTH: 0.50FT (MIN.) - 5.00FT (MAX.)
   - B. SOIL UNIT WEIGHT: 120 PCF
   - C. ASSUMED WATER TABLE ELEVATION: BELOW BOTTOM OF PRECAST
   - D. REQUIRED ALLOWABLE BEARING PRESSURE: 2,500 PSF
   - E. EQUIVALENT LATERAL FLUID PRESSURE, ACTIVE: 45 PCF (DRAINED)
   - F. EQUIVALENT LATERAL FLUID PRESSURE, AT-REST: 60 PCF (DRAINED)
   - G. EQUIVALENT LATERAL FLUID PRESSURE, PASSIVE: 150 PCF (DRAINED)
   - H. ASSUMED COEFFICIENT OF FRICTION: 0.40
   - I. SEISMIC LATERAL EARTH PRESSURES: NOT APPLICABLE
3. STORMCAPTURE MODULE TYPE: DETENTION (SOILTIGHT).
4. CONCRETE (NORMALWEIGHT):
   - A. MIN. 28-DAY COMPRESSIVE STRENGTH: 6,000 PSI
   - B. CEMENT: ASTM C150
5. STEEL REINFORCEMENT: ASTM A615 / A706 (GRADE 60), ASTM A1064 (GRADE 80)
6. REFERENCE STANDARDS: ASTM C913 & C890, ACI 318-14

REVIEWING NOTES

1. THIS SYSTEM HAS BEEN DESIGNED PER THE DESIGN PARAMETERS SPECIFIED IN THE DESIGN NOTES. REVIEWING ENGINEER SHALL VERIFY THAT THESE PARAMETERS MEET OR EXCEED PROJECT SPECIFIC REQUIREMENTS. IF SITE CONDITIONS DIFFER FROM NOTED DESIGN PARAMETERS, REVIEWING ENGINEER SHALL NOTIFY OLDCASTLE FOR POTENTIAL REDESIGN AND/OR PRICING ADJUSTMENTS.
2. REVIEWING ENGINEER SHALL VERIFY ALL PIPE PENETRATION LOCATIONS, SIZES, AND INVERTS.
3. REVIEWING ENGINEER SHALL VERIFY ALL MANWAY ACCESS LOCATIONS AND RIM ELEVATIONS.
4. THIS SYSTEM IS DESIGNED FOR A GROUNDWATER TABLE ELEVATION PER DESIGN NOTE 2C, SHEET 1. REVIEWING ENGINEER SHALL VERIFY THAT THE DESIGN GROUNDWATER ELEVATION MEETS OR EXCEEDS SITE CONDITION REQUIREMENTS. NOTIFY OLDCASTLE IF SITE CONDITIONS VARY FROM WHAT HAS BEEN SPECIFIED FOR POTENTIAL SYSTEM DESIGN CHANGES AND/OR PRICING ADJUSTMENTS.
5. STORMCAPTURE MODULES ARE NOT WATERTIGHT. IF A WATERTIGHT SOLUTION IS REQUIRED, CONTACT OLDCASTLE FOR RECOMMENDATIONS. THE WATERTIGHT APPLICATION TO BE PROVIDED AND IMPLEMENTED BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE SELECTED WATERTIGHT SOLUTION PERFORMS AS SPECIFIED BY THE MANUFACTURER.
6. DESIGN OF THE STORMCAPTURE PRECAST MODULE SYSTEM ASSUMES NO ADJACENT BUILDING(S), WALL(S), OR STRUCTURAL FOUNDATION(S) WITHIN A 1:1 INFLUENCE LINE FROM THE BOTTOM EDGE OF ANY SYSTEM MODULE. ANY SITE ELEMENTS BEYOND THIS ZONE OF INFLUENCE ARE ASSUMED TO HAVE NO IMPACT ON THE SYSTEM AND EXERT ZERO LATERAL SURCHARGE ONTO THE MODULES. THE CONTRACTOR SHALL VERIFY THAT ANY ADJACENT BUILDING(S), WALL(S), OR STRUCTURAL FOUNDATION(S) DO NOT LIE WITHIN THIS INFLUENCE ZONE OR DO NOT SURCHARGE THE PRECAST MODULES.
7. WRITTEN APPROVAL OF SUBMITTAL DRAWINGS ALONG WITH SIGNED PURCHASE ORDER REQUIRED FOR BEGINNING OF PRODUCT FABRICATION. ANY SYSTEM MODIFICATION POST-APPROVAL MAY RESULT IN CHANGE ORDER(S) AND/OR POTENTIAL DELIVERY DELAYS.
8. ALL SAND FILTER MEDIA, DRAIN ROCK AGGREGATE, PIPE, AND FITTINGS PROVIDED BY CONTRACTOR.



TYPICAL ELEVATION
NTS

NOTE:
TERMADUCT INSERTS TO BE KNOCKED OUT AT SPECIFIED LOCATIONS ONLY (BY OTHERS).

REV	DESCRIPTION	DATE
	-	-

Oldcastle Infrastructure™ A CRH COMPANY
Ph: 800.579.8819 | www.oldcastleinfrastructure.com/stormwater

STORMCAPTURE ® DETENTION SYSTEM | SYSTEM ID: 1
CUSTOMER: Ware Malcomb
JOB NAME: Extra Space Storage - Santee - BMP 2 - 100-year storage | JOB NUMBER: -

DATE	SALES	DRAWN	ENGINEER	CHECKED	SALES ORDER
5/22/2024	-	-	-	-	-

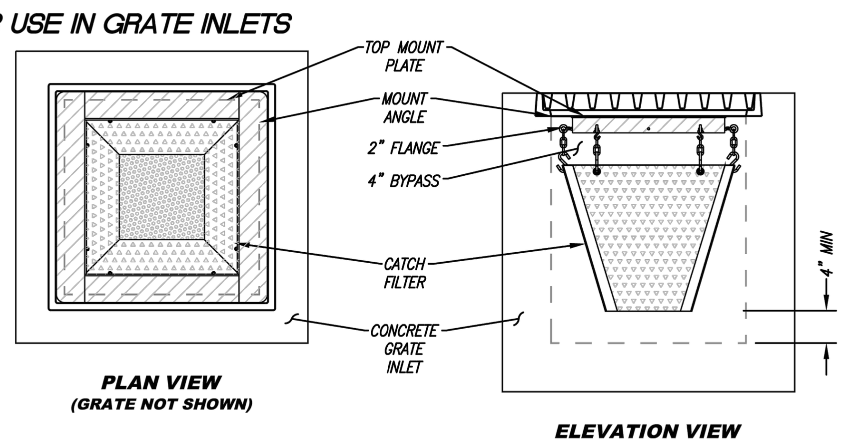
DRAWING NAME: SC1 3-0 | SHEET: 2 OF 3

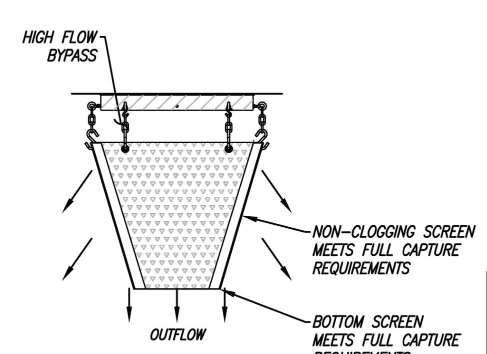
Detention/ Infiltration

UNDERGROUND DETENTION DETAIL - OLDCASTLE STORMCAPTURE (PVT.)

NOT TO SCALE

BIO CLEAN FULL CAPTURE FILTER
FOR USE IN GRATE INLETS





FLOW DIAGRAM

MODEL #	TREATMENT FLOW RATE (CFS)	BYPASS FLOW (CFS)	SOLIDS STORAGE CAPACITY (CF)
BIO-GRATE-FULL 12-12-12	1.04	1.24	0.15
BIO-GRATE-FULL 18-18-12	1.78	2.79	0.33
BIO-GRATE-FULL 24-24-12	2.70	4.96	0.59
BIO-GRATE-FULL 24-40-12	3.70	6.35	0.88
BIO-GRATE-FULL 24-24-24	7.31	4.96	1.22
BIO-GRATE-FULL 24-40-24	9.53	6.35	1.82
BIO-GRATE-FULL 36-36-24	11.93	7.74	2.73

INSTALLATION NOTES:

1. ALL HARDWARE, FLANGE, FRAME, SCREENS SHALL BE STAINLESS STEEL.
2. OPTIONAL HYDROCARBON BOOM SHALL BE 2" DIAMETER.
3. SEE PERFORMANCE REPORTS IN MANUFACTURES SPECIFICATIONS.
4. OTHER STANDARD AND CUSTOM MODEL SIZES AVAILABLE – CONTACT BIO CLEAN FOR MORE INFORMATION.
5. BASED ON 37% OPEN AREA.
6. CONSIDERS A SAFETY FACTOR OF 2.0.
7. CONSIDERS A LOCAL DEPRESSION PONDING DEPTH OF 6 INCHES.
8. STORAGE CAPACITY BASED ON THE BASKET HALF FULL.
9. CONCRETE STRUCTURES SOLD SEPARATELY.

NOT TO SCALE

9/23/22GSCHIPPER

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com

GRATE INLET FILTER
FULL CAPTURE
STANDARD DETAIL

DETAIL - CATCH BASIN FULL TRASH CAPTURE INSERT

NOT TO SCALE

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suite 120
san diego, ca 92121
p 858.638.7277
waremalcomb.com

FOR AND ON BEHALF OF WARE MALCOMB

ATTACHMENT 1a & 1b
DMA EXHIBIT
EXTRA SPACE STORAGE - SANTEE

NO.	DATE	REMARKS

JOB NO.:	
PA / PM:	
DESIGNED:	
DATE:	
PLOT DATE:	09/05/24

SHEET
2
Sheet 2 of 2

NOT FOR CONSTRUCTION

Attachment 1c

Worksheet 0-2. Harvest and Use Feasibility Screening

Harvest and Use Feasibility Screening		Worksheet B.3-1
1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season? ☐ Toilet and urinal flushing ☐ Landscape irrigation ☐ Other:_______________		
2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2. 5 employees x 7 gal/day (per Table B-3.1) = 35 gal/day = 4.68 cf/day x 1.5 days = 7.02 cf		
3. Calculate the DCV using worksheet B-2.1. combined DCV = 3,706		
3a. Is the 36-hour demand greater than or equal to the DCV? Yes / No ⇨ ⇩	3b. Is the 36-hour demand greater than 0.25DCV but less than the full DCV? Yes / No ⇨ ⇩	3c. Is the 36-hour demand less than 0.25DCV? Yes ⇩
Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.	Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.	Harvest and use is considered to be infeasible.

APPENDIX C

STORM WATER MANAGEMENT INVESTIGATION

We understand storm water management devices are being proposed in accordance with the 2016 City of Santee BMP Design Manual. If not properly constructed, there is a potential for distress to improvements and properties located hydrologically down gradient or adjacent to these devices. Factors such as the amount of water to be detained, its residence time, and soil permeability have an important effect on seepage transmission and the potential adverse impacts that may occur if the storm water management features are not properly designed and constructed. We have not performed a hydrogeological study at the site. If infiltration of storm water runoff occurs, downstream properties may be subjected to seeps, springs, slope instability, raised groundwater, movement of foundations and slabs, or other undesirable impacts as a result of water infiltration.

Hydrologic Soil Group

The United States Department of Agriculture (USDA), Natural Resources Conservation Services, possesses general information regarding the existing soil conditions for areas within the United States. The USDA website also provides the Hydrologic Soil Group. Table C-1 presents the descriptions of the hydrologic soil groups.

TABLE C-1
HYDROLOGIC SOIL GROUP DEFINITIONS

Soil Group	Soil Group Definition
A	Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
B	Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.
C	Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.
D	Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Table C-2 presents the information from the USDA website for the property.

TABLE C-2
USDA WEB SOIL SURVEY – HYDROLOGIC SOIL GROUP*

Map Unit Name	Map Unit Symbol	Approximate Percentage of Property	Hydrologic Soil Group	k_{SAT} of Most Limiting Layer (Inches/ Hour)
Ramona Sandy Loam, 2 to 5 Percent Slopes	RaB	100	C	0.20 – 0.57

*The areas of the property that possess fill materials should be considered to possess a Hydrologic Soil Group D.

In Situ Testing

We performed constant-head infiltration tests at the locations shown on the *Geologic Map*, Figure 1. Table C-3 presents the results of the infiltration tests. The field data sheets are attached herein. We applied a feasibility factor of safety of 2.0 to our estimated infiltration rates. Soil infiltration rates from in-situ tests can vary significantly from one location to another due to the heterogeneous characteristics inherent to most soil.

TABLE C-3
INFILTRATION TEST RESULTS

Test No.	Geologic Unit	Test Elevation (feet, MSL)	Field-Saturated Hydraulic Conductivity/Infiltration Rate, k_{sat} (inch/hour)	Worksheet Infiltration Rate[1] (inch/hour)
A-1	Topsoil	375	0.136.	0.068
A-2	Kgr	377	0.039	0.020
Average			0.088	0.044

[1] Using a Factor of Safety of 2.

Infiltration categories include full infiltration, partial infiltration and no infiltration. Table C-4 presents the commonly accepted definitions of the potential infiltration categories based on the infiltration rates.

TABLE C-4
INFILTRATION CATEGORIES

Infiltration Category	Field Infiltration Rate, I (Inches/Hour)	Factored Infiltration Rate[1], I (Inches/Hour)
Full Infiltration	$I > 1.0$	$I > 0.5$
Partial Infiltration	$0.10 < I \leq 1.0$	$0.05 < I \leq 0.5$
No Infiltration (Infeasible)	$I < 0.10$	$I < 0.05$

[1] Using a Factor of Safety of 2.

Based on our observations and test results, the average of the factored infiltration rates at the test locations indicated rates less than 0.05 inches per hour. Therefore, partial and full infiltration on the property is considered infeasible based on the calculated infiltration rates, and the site possesses a “No Infiltration” condition.

GEOTECHNICAL CONSIDERATIONS

Groundwater Elevations

We expect groundwater is approximately 20 feet or greater below existing grade. We do not expect groundwater to be encountered during construction of the proposed development. The SWS indicates that the depth to the groundwater table beneath an infiltration BMP must be greater than 10 feet for infiltration to be allowed. Therefore, infiltration would be feasible when considering the depth to groundwater.

New or Existing Utilities

Utilities are located on and adjacent to the property within the existing parking areas, driveways, and roadways. Therefore, full and partial infiltration within the areas near these utilities should be considered infeasible. Setbacks for infiltration should be incorporated if infiltration were to be considered. The setback for infiltration devices should be a minimum of 10 feet and a 1:1 plane of 1 foot below the closest edge of the deepest adjacent utility.

Existing and Planned Structures

Existing buildings are present adjacent to the site. Water should not be allowed to infiltrate in areas where it could affect the neighboring properties and existing adjacent structures, improvements, and roadway. Mitigation for existing structures consists of not allowing water infiltration within a lateral distance of at least 10 feet from the new or existing foundations and property lines.

Soil or Groundwater Contamination

We are unaware of contaminated soil on the property. Therefore, infiltration associated with this risk is considered feasible. In addition, groundwater mounding would not be a concern due to the lack of a near surface groundwater table.

CONCLUSIONS AND RECOMMENDATIONS

Storm Water Evaluation Narrative

The in-place infiltration test locations were selected in areas likely used for potential infiltration devices. We performed 2 infiltration tests within the underlying topsoil and granitic rock and the results indicate an average rate of 0.044 inches per hour (with an applied factor of safety of 2).

Storm Water Evaluation Conclusion

Based on the results of our infiltration tests (less than 0.05 inches per hour); we opine full and partial infiltration on the property is considered infeasible and the property possesses a “No Infiltration” condition.

Storm Water Management Devices

Liners and subdrains should be incorporated into the design and construction of the planned storm water devices. The liners should be impermeable (e.g. High-density polyethylene, HDPE, with a thickness of about 30 mil or equivalent Polyvinyl Chloride, PVC) to prevent water migration. The subdrains should be perforated within the liner area, installed at the base and above the liner, be at least 3 inches in diameter and consist of Schedule 40 PVC pipe. The subdrains outside of the liner should consist of solid pipe. The penetration of the liners at the subdrains should be properly waterproofed. The subdrains should be connected to a proper outlet. The devices should also be installed in accordance with the manufacturer’s recommendations.

Storm Water Standard Worksheets

The BMP design manual requests the geotechnical engineer complete the Categorization of Infiltration Feasibility Condition (Form I-8) worksheet information to help evaluate the potential for infiltration on the property. Form I-8 presents the completed information for the submittal process and is attached herein.

The regional storm water standards also have a worksheet that helps the project civil engineer estimate the factor of safety based on several factors. Table C-5 describes the suitability assessment input parameters related to the geotechnical engineering aspects for the factor of safety determination.

TABLE C-5
SUITABILITY ASSESSMENT RELATED CONSIDERATIONS FOR INFILTRATION FACILITY SAFETY FACTORS

Consideration	High Concern – 3 Points	Medium Concern – 2 Points	Low Concern – 1 Point
Assessment Methods	Use of soil survey maps or simple texture analysis to estimate short-term infiltration rates. Use of well permeameter or borehole methods without accompanying continuous boring log. Relatively sparse testing with direct infiltration methods	Use of well permeameter or borehole methods with accompanying continuous boring log. Direct measurement of infiltration area with localized infiltration measurement methods (e.g., Infiltrometer). Moderate spatial resolution	Direct measurement with localized (i.e. small-scale) infiltration testing methods at relatively high resolution or use of extensive test pit infiltration measurement methods.
Predominant Soil Texture	Silty and clayey soils with significant fines	Loamy soils	Granular to slightly loamy soils
Site Soil Variability	Highly variable soils indicated from site assessment or unknown variability	Soil boring/test pits indicate moderately homogenous soils	Soil boring/test pits indicate relatively homogenous soils
Depth to Groundwater/ Impervious Layer	<5 feet below facility bottom	5-15 feet below facility bottom	>15 feet below facility bottom

Based on our geotechnical investigation and the previous table, Table C-6 presents the estimated factor values for the evaluation of the factor of safety. This table only presents the suitability assessment safety factor (Part A) of the worksheet. The project civil engineer should evaluate the safety factor for design (Part B) and use the combined safety factor for the design infiltration rate.

TABLE C-6
FACTOR OF SAFETY WORKSHEET DESIGN VALUES – PART A

Suitability Assessment Factor Category	Assigned Weight (w)	Factor Value (v)	Product (p = w x v)
Assessment Methods	0.25	2	0.50
Predominant Soil Texture	0.25	1	0.25
Site Soil Variability	0.25	2	0.50
Depth to Groundwater/ Impervious Layer	0.25	1	0.25
Suitability Assessment Safety Factor, $S_A = \sum p$			1.50

*The project civil engineer should complete Form I-9 using the data on this table. Additional information is required to evaluate the design factor of safety.

Categorization of Infiltration Feasibility Condition			Form I-8
Part 1 - Full Infiltration Feasibility Screening Criteria **Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?**			
Criteria	Screening Question	**Yes**	**No**
1	**Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		X
Provide basis: We performed 2 Aardvark Permeameter tests at the site in areas where storm water devices may be installed. The following presents the results of the field infiltration tests: A-1 at 4.5 feet: 0.136 inches/hour (0.068 inches/hour with FOS=2) A-2 at 4.0 feet: 0.039 inches/hour (0.020 inches/hour with FOS=2) These tests result in an average of 0.088 inches/hour (0.044 inches/hour with an applied factor of safety of 2); less than 0.5 inches per hour.			
2	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	X	
Provide basis: Geologic hazards do not exist at the site that would preclude infiltration.			

Form I-8 Page 2 of 4			
Criteria	Screening Question	**Yes**	**No**
3	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: Groundwater was not encountered during our investigation. We expect groundwater is approximately 20 feet or greater below existing grade. Therefore, risk of groundwater contamination does not exist at the site that would preclude infiltration.			
4	**Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: We do not expect infiltration will cause water balance issues such as seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters.			
Part 1 Result*	If all answers to rows 1 - 4 are "**Yes**" a full infiltration design is potentially feasible. The feasibility screening category is **Full Infiltration** If any answer from row 1-4 is "**No**", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design. Proceed to Part 2		No Full Infiltration

***To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by the City to substantiate findings.**

Form I-8 Page 3 of 4

Part 2 – Partial Infiltration vs. No Infiltration Feasibility Screening Criteria

Would infiltration of water in any appreciable amount be physically feasible without any negative consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
5	**Do soil and geologic conditions allow for infiltration in any appreciable rate or volume?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		X

Provide basis:

We performed 2 Aardvark Permeameter tests at the site in areas where storm water devices may be installed. The following presents the results of the field infiltration tests:

A-1 at 4.5 feet: 0.136 inches/hour (0.068 inches/hour with FOS=2)

A-2 at 4.0 feet: 0.039 inches/hour (0.020 inches/hour with FOS=2)

These tests result in an average of 0.088 inches/hour (0.044 inches/hour with an applied factor of safety of 2); less than 0.05 inches per hour.

Criteria	Screening Question	Yes	No
6	**Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level**? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	X	

Provide basis:

Geologic hazards do not exist at the site that would preclude infiltration.

Form I-8 Page 4 of 4			
Criteria	Screening Question	**Yes**	**No**
7	**Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: Groundwater was not encountered during our investigation. We expect groundwater is approximately 20 feet or greater below existing grade. Therefore, risk of groundwater contamination does not exist at the site that would preclude infiltration.			
8	**Can infiltration be allowed without violating downstream water rights**? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: We have not provided a study regarding water rights. However, these rights are not typical in the San Diego County area.			
Part 2 Result*	If all answers from row 1-4 are yes then partial infiltration design is potentially feasible. The feasibility screening category is **Partial Infiltration.** If any answer from row 5-8 is no, then infiltration of any volume is considered to be **infeasible** within the drainage area. The feasibility screening category is **No Infiltration.**	No Infiltration	

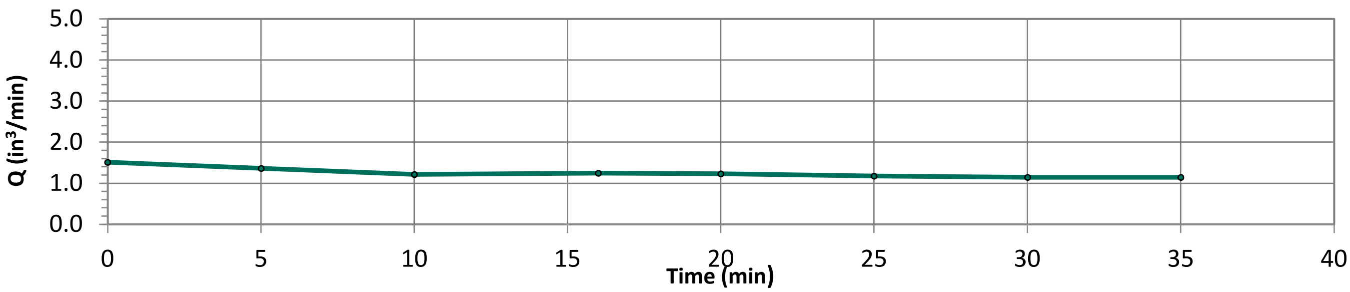
*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by the City to substantiate findings.

TEST NO.: **A-1** GEOLOGIC UNIT: **Qu**

EXCAVATION ELEVATION (MSL, FT): **379**

TEST INFORMATION	
BOREHOLE DIAMETER (IN):	4
BOREHOLE DEPTH (FT):	4.5
TEST/BOTTOM ELEVATION (MSL, FT):	375
MEASURED HEAD HEIGHT (IN):	6.0
CALCULATED HEAD HEIGHT (IN):	6.2
FACTOR OF SAFETY:	2.0

TEST RESULTS	
STEADY FLOW RATE (IN^3/MIN):	**1.146**
FIELD-SATURATED INFILTRATION RATE (IN/HR):	**0.136**
FACTORED INFILTRATION RATE (IN/HR):	**0.068**



TEST DATA

Reading	Time Elapsed (min)	Water Weight Consumed (lbs)	Water Volume Consumed (in^3)	Q (in^3/min)
1	0.00	0.000	0.00	0.00
2	5.00	0.273	7.56	1.512
3	5.00	0.246	6.81	1.362
4	6.00	0.264	7.31	1.218
5	4.00	0.180	4.98	1.246
6	5.00	0.222	6.15	1.230
7	5.00	0.213	5.90	1.180
8	5.00	0.207	5.73	1.146
9	5.00	0.207	5.73	1.146

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GEOTECHNICAL CONSULTANTS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121-2974
PHONE 858 558-6900 - FAX 858 558-6159

AARDVARK PERMEAMETER TEST RESULTS

EXTRA SPACE STORAGE #1984

PROJECT NO.: **G3177-42-01**

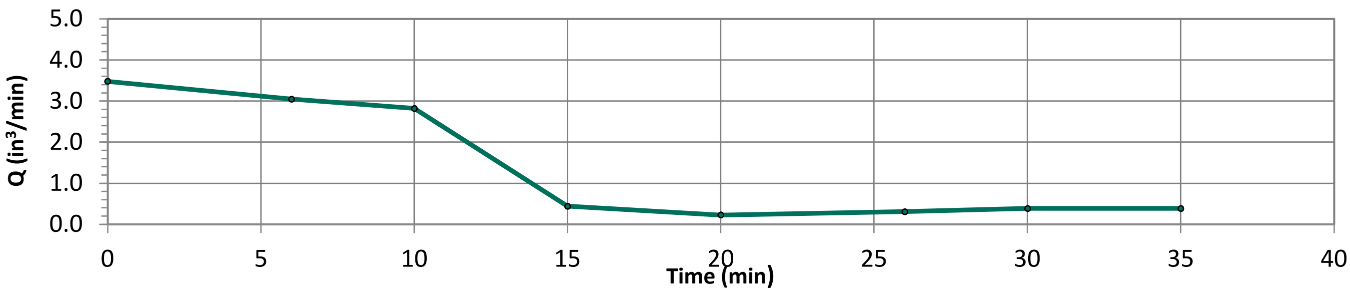
TEST NO.: **A-2**

GEOLOGIC UNIT: **Kgr**

EXCAVATION ELEVATION (MSL, FT): **381**

TEST INFORMATION	
BOREHOLE DIAMETER (IN):	4
BOREHOLE DEPTH (FT):	4.0
TEST/BOTTOM ELEVATION (MSL, FT):	377
MEASURED HEAD HEIGHT (IN):	6.0
CALCULATED HEAD HEIGHT (IN):	6.1
FACTOR OF SAFETY:	2.0

TEST RESULTS	
STEADY FLOW RATE (IN^3/MIN):	**0.329**
FIELD-SATURATED INFILTRATION RATE (IN/HR):	**0.039**
FACTORED INFILTRATION RATE (IN/HR):	**0.020**



TEST DATA

Reading	Time Elapsed (min)	Water Weight Consumed (lbs)	Water Volume Consumed (in^3)	Q (in^3/min)
1	0.00	0.000	0.00	0.00
2	6.00	0.755	20.91	3.485
3	4.00	0.440	12.18	3.046
4	5.00	0.510	14.12	2.825
5	5.00	0.080	2.22	0.443
6	6.00	0.050	1.38	0.231
7	4.00	0.045	1.25	0.312
8	5.00	0.070	1.94	0.388
9	5.00	0.070	1.94	0.388

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AARDVARK PERMEAMETER TEST RESULTS

EXTRA SPACE STORAGE #1984

PROJECT NO.: **G3177-42-01**

Attachment 1e

Automated Worksheet B.1: Calculation of Design Capture Volume (V2.0)

Category	#	Description	i	ii	iii	iv	v	vi	vii	viii	ix	x	Units
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	DMA 1	DMA 2									unitless
	2	85th Percentile 24-hr Storm Depth	0.48	0.48									inches
	3	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	32,602	68,795									sq-ft
	4	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)											sq-ft
	5	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)	2,304	10,906									sq-ft
	6	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)											sq-ft
	7	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)											sq-ft
	8	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)											sq-ft
	9	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)											sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	10	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	Yes	Yes	No	No	No	No	No	No	No	No	yes/no
	11	Impervious Surfaces **Directed to Dispersion Area** per SD-B (Ci=0.90)											sq-ft
	12	Semi-Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.30)											sq-ft
	13	Engineered Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.10)											sq-ft
	14	Natural Type A Soil **Serving as Dispersion Area** per SD-B (Ci=0.10)											sq-ft
	15	Natural Type B Soil **Serving as Dispersion Area** per SD-B (Ci=0.14)											sq-ft
	16	Natural Type C Soil **Serving as Dispersion Area** per SD-B (Ci=0.23)											sq-ft
	17	Natural Type D Soil **Serving as Dispersion Area** per SD-B (Ci=0.30)											sq-ft
	18	Number of Tree Wells Proposed per SD-A	2	2									#
	19	Average Mature Tree Canopy Diameter	10	10									ft
	20	Number of Rain Barrels Proposed per SD-E											#
	21	Average Rain Barrel Size											gal
Initial Runoff Factor Calculation	22	Total Tributary Area	34,906	79,701	0	0	0	0	0	0	0	0	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.85	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	25	Initial Weighted Runoff Factor	0.85	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	26	Initial Design Capture Volume	1,187	2,519	0	0	0	0	0	0	0	0	cubic-feet
Dispersion Area Adjustments	27	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	0	sq-ft
	28	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	0	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.85	0.79	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	unitless
	32	Design Capture Volume After Dispersion Techniques	1,187	2,519	0	0	0	0	0	0	0	0	cubic-feet
Tree & Barrel Adjustments	33	Total Tree Well Volume Reduction	80	80	0	0	0	0	0	0	0	0	cubic-feet
	34	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
Results	35	Final Adjusted Runoff Factor	0.79	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	36	Final Effective Tributary Area	27,576	60,573	0	0	0	0	0	0	0	0	sq-ft
	37	Initial Design Capture Volume Retained by Site Design Elements	80	80	0	0	0	0	0	0	0	0	cubic-feet
	38	Final Design Capture Volume Tributary to BMP	1,107	2,439	0	0	0	0	0	0	0	0	cubic-feet

No Warning Messages

Automated Worksheet B.2: Retention Requirements (V2.0)

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	Units
Basic Analysis	1	Drainage Basin ID or Name	DMA 1	DMA 2	-	-	-	-	-	-	-	-	unitless
	2	85th Percentile Rainfall Depth	0.48	0.48	-	-	-	-	-	-	-	-	inches
	3	Predominant NRCS Soil Type Within BMP Location	C	C									unitless
	4	Is proposed BMP location Restricted or Unrestricted for Infiltration Activities?	Restricted	Restricted									unitless
	5	Nature of Restriction	Contam. Soil	Contam. Soil									unitless
	6	Do Minimum Retention Requirements Apply to this Project?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes/no
	7	Are Habitable Structures Greater than 9 Stories Proposed?	No	No									yes/no
Advanced Analysis	8	Has Geotechnical Engineer Performed an Infiltration Analysis?	No	No									yes/no
	9	Design Infiltration Rate Recommended by Geotechnical Engineer											in/hr
Result	10	Design Infiltration Rate Used To Determine Retention Requirements	0.000	0.000	-	-	-	-	-	-	-	-	in/hr
	11	Percent of Average Annual Runoff that Must be Retained within DMA	4.5%	4.5%	-	-	-	-	-	-	-	-	percentage
	12	Fraction of DCV Requiring Retention	0.02	0.02	-	-	-	-	-	-	-	-	ratio
	13	Required Retention Volume	22	49	-	-	-	-	-	-	-	-	cubic-feet

No Warning Messages

Automated Worksheet B.3: BMP Performance (V2.0)

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	Units
BMP Inputs	1	Drainage Basin ID or Name	DMA 1	DMA 2	-	-	-	-	-	-	-	-	sq-ft
	2	Design Infiltration Rate Recommended	0.000	0.000	-	-	-	-	-	-	-	-	in/hr
	3	Design Capture Volume Tributary to BMP	1,107	2,439	-	-	-	-	-	-	-	-	cubic-feet
	4	Is BMP Vegetated or Unvegetated?	Vegetated	Vegetated									unitless
	5	Is BMP Impermeably Lined or Unlined?	Lined	Lined									unitless
	6	Does BMP Have an Underdrain?	Underdrain	Underdrain									unitless
	7	Does BMP Utilize Standard or Specialized Media?	Standard	Standard									unitless
	8	Provided Surface Area	68	64									sq-ft
	9	Provided Surface Ponding Depth											inches
	10	Provided Soil Media Thickness											inches
	11	Provided Gravel Thickness (Total Thickness)											inches
	12	Underdrain Offset											inches
	13	Diameter of Underdrain or Hydromod Orifice (Select Smallest)											inches
	14	Specialized Soil Media Filtration Rate											in/hr
	15	Specialized Soil Media Pore Space for Retention											unitless
	16	Specialized Soil Media Pore Space for Biofiltration											unitless
	17	Specialized Gravel Media Pore Space											unitless
Retention Calculations	18	Volume Infiltrated Over 6 Hour Storm	0	0	0	0	0	0	0	0	0	0	cubic-feet
	19	Ponding Pore Space Available for Retention	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	unitless
	20	Soil Media Pore Space Available for Retention	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	unitless
	21	Gravel Pore Space Available for Retention (Above Underdrain)	0.00	0.00	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless
	22	Gravel Pore Space Available for Retention (Below Underdrain)	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless
	23	Effective Retention Depth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	inches
	24	Fraction of DCV Retained (Independent of Drawdown Time)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ratio
	25	Calculated Retention Storage Drawdown Time	0	0	0	0	0	0	0	0	0	0	hours
	26	Efficacy of Retention Processes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ratio
	27	Volume Retained by BMP (Considering Drawdown Time)	0	0	0	0	0	0	0	0	0	0	cubic-feet
	28	Design Capture Volume Remaining for Biofiltration	1,107	2,439	0	0	0	0	0	0	0	0	cubic-feet
Biofiltration Calculations	29	Max Hydromod Flow Rate through Underdrain	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	cfs
	30	Max Soil Filtration Rate Allowed by Underdrain Orifice	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	in/hr
	31	Soil Media Filtration Rate per Specifications	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	in/hr
	32	Soil Media Filtration Rate to be used for Sizing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	in/hr
	33	Depth Biofiltered Over 6 Hour Storm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	inches
	34	Ponding Pore Space Available for Biofiltration	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	35	Soil Media Pore Space Available for Biofiltration	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	unitless
	36	Gravel Pore Space Available for Biofiltration (Above Underdrain)	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless
	37	Effective Depth of Biofiltration Storage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	inches
	38	Drawdown Time for Surface Ponding	>120	>120	0	0	0	0	0	0	0	0	hours
	39	Drawdown Time for Effective Biofiltration Depth	#DIV/0!	#DIV/0!	0	0	0	0	0	0	0	0	hours
	40	Total Depth Biofiltered	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	inches
	41	Option 1 - Biofilter 1.50 DCV: Target Volume	1,661	3,659	0	0	0	0	0	0	0	0	cubic-feet
	42	Option 1 - Provided Biofiltration Volume	0	0	0	0	0	0	0	0	0	0	cubic-feet
	43	Option 2 - Store 0.75 DCV: Target Volume	830	1,829	0	0	0	0	0	0	0	0	cubic-feet
	44	Option 2 - Provided Storage Volume	0	0	0	0	0	0	0	0	0	0	cubic-feet
	45	Portion of Biofiltration Performance Standard Satisfied	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ratio
Result	46	Do Site Design Elements and BMPs Satisfy Annual Retention Requirements?	Yes	Yes	-	-	-	-	-	-	-	-	yes/no
	47	Overall Portion of Performance Standard Satisfied (BMP Efficacy Factor)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ratio
	48	**Deficit of Effectively Treated Stormwater**	-1,107	-2,439	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	cubic-feet

Attention!

- BMPs sized at <3% of the effective tributary areas must be accompanied by Reduced Size BMP Maintenance calculations (see last tab)

-Vegetated BMPs with surface ponding drawdown times over 24 hours must be certified by a landscape architect or agronomist. All BMPs must have a surface ponding drawdown time of 96 hours or less

-This BMP does not fully satisfy the performance standards for pollutant control for the drainage area

BMP 1

B.6.3 Sizing Flow-Thru Treatment Control BMPs:

Flow-thru treatment control BMPs shall be sized to filter or treat the maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour, for each hour of every storm event. The required flow-thru treatment rate should be adjusted for the portion of the DCV already retained or biofiltered onsite as described in Worksheet B.6-1. The following hydrologic method shall be used to calculate the flow rate to be filtered or treated:

$$Q = C \times i \times A$$

Where:

Q = Design flow rate in cubic feet per second

C = Runoff factor, area-weighted estimate using Table B.1-1.

i = Rainfall intensity of 0.2 in/hr.

A = Tributary area (acres) which includes the total area draining to the BMP, including any offsite or onsite areas that comingle with project runoff and drain to the BMP. Refer to Section 3.3.3 for additional guidance. Street projects consult Section 1.4.3.

Worksheet 0-1: Flow-Thru Design Flows

Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	1,187	cubic-feet
2	DCV retained	$DCV_{retained}$	0	cubic-feet
3	DCV biofiltered	$DCV_{biofiltered}$	0	cubic-feet
4	DCV requiring flow-thru (Line 1 – Line 2 – 0.67*Line 3)	$DCV_{flow-thru}$	1,187	cubic-feet
5	Adjustment factor (Line 4 / Line 1)*	AF=	1	unitless
6	Design rainfall intensity	i=	0.20	in/hr
7	Area tributary to BMP (s)	A=	0.80	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.85	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.136	cfs

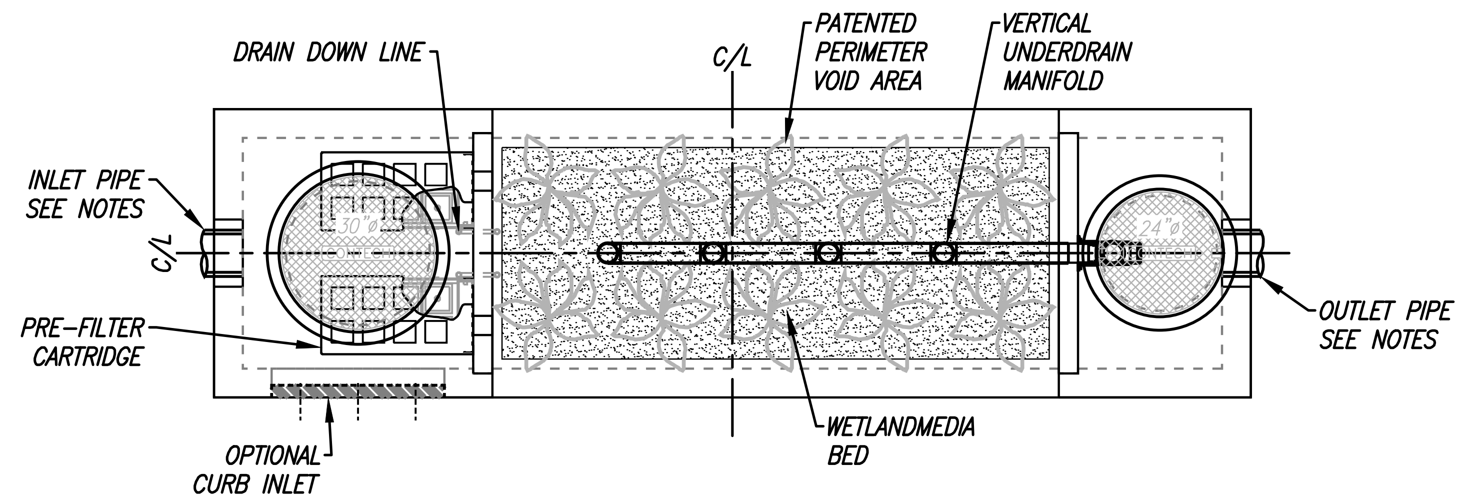
TREATMENT FLOW RATE REQUIRED = DCV x 1.5 = 0.136 x 1.5 = **0.204 cfs**

1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and flow based (e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed either by volume in Line 4 or flow rate in Line 9.
3) Proprietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

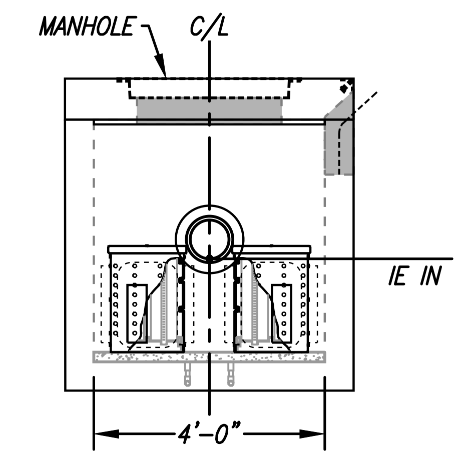
SITE SPECIFIC DATA

PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
TREATMENT FLOW (CFS)			
PRETREATMENT LOADING RATE (GPM/SF)			2.1 GPM/SF
WETLAND MEDIA LOADING RATE (GPM/SF)			1.0
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			_____ (CFS)
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
NOTES:			

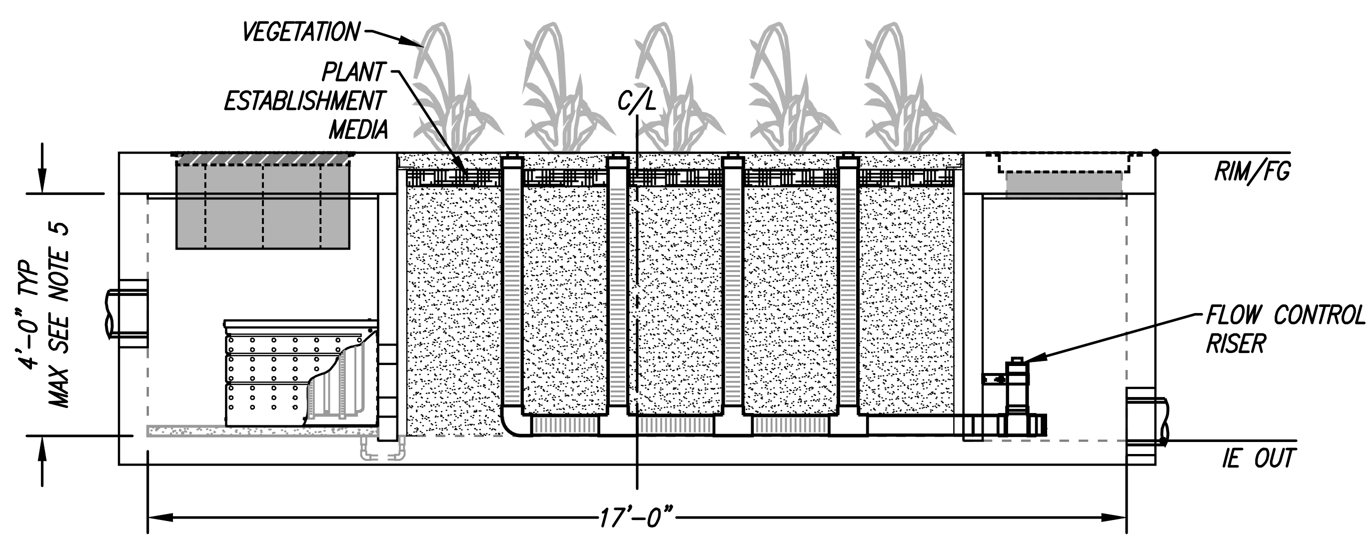
* PRELIMINARY ONLY - NOT FOR CONSTRUCTION



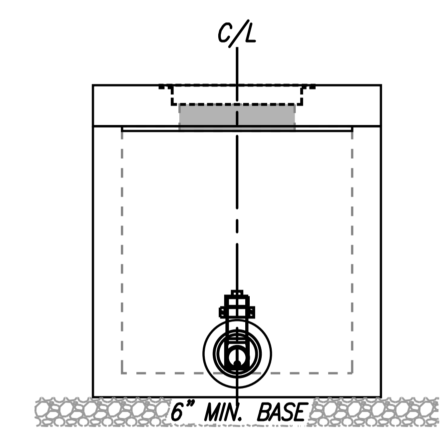
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

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4. CONTRACTOR RESPONSIBLE FOR CONTACTING CONTECH FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.
5. VERTICAL HEIGHT VARIES BASED ON SITE SPECIFIC REQUIREMENTS.

MODULAR WETLANDS
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CONTECH® ENGINEERED SOLUTIONS LLC
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MWS-L-4-17-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

1/12/24TIM.GIRARD

MWS Linear 2.0 HGL Sizing Calculations

WETLANDS

			HGL HEIGHT																													
			SHALLOW MODELS																				STANDARD HEIGHT MODEL	HIGH CAPACITY MODELS								
MWS MODEL SIZE	WETLAND PERMITER LENGTH	LOADING RATE GPM/SF	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.65	3.70	3.75	3.80	3.85	3.90	3.95
MWS-L-4-4	6.70	1.0	0.022	0.023	0.025	0.026	0.028	0.029	0.031	0.032	0.034	0.035	0.037	0.038	0.040	0.042	0.043	0.045	0.046	0.048	0.049	0.051	0.052	0.054	0.055	0.056	0.057	0.058	0.058	0.059	0.060	0.061
MWS-L-3-6	10.06	1.0	0.032	0.035	0.037	0.039	0.042	0.044	0.046	0.048	0.051	0.053	0.055	0.058	0.060	0.062	0.065	0.067	0.069	0.072	0.074	0.076	0.078	0.081	0.083	0.084	0.085	0.087	0.088	0.089	0.090	0.091
MWS-L-4-6	9.30	1.0	0.030	0.032	0.034	0.036	0.038	0.041	0.043	0.045	0.047	0.049	0.051	0.053	0.055	0.058	0.060	0.062	0.064	0.066	0.068	0.070	0.073	0.075	0.077	0.078	0.079	0.080	0.081	0.082	0.083	0.084
MWS-L-4-8	14.80	1.0	0.048	0.051	0.054	0.058	0.061	0.065	0.068	0.071	0.075	0.078	0.082	0.085	0.088	0.092	0.095	0.099	0.102	0.105	0.109	0.112	0.115	0.119	0.122	0.124	0.126	0.127	0.129	0.131	0.132	0.134
MWS-L-4-13	18.40	1.0	0.059	0.063	0.068	0.072	0.076	0.080	0.084	0.089	0.093	0.097	0.101	0.106	0.110	0.114	0.118	0.122	0.127	0.131	0.135	0.139	0.144	0.148	0.152	0.154	0.156	0.158	0.160	0.163	0.165	0.167
MWS-L-4-15	22.40	1.0	0.072	0.077	0.082	0.087	0.093	0.098	0.103	0.108	0.113	0.118	0.123	0.129	0.134	0.139	0.144	0.149	0.154	0.159	0.165	0.170	0.175	0.180	0.185	0.188	0.190	0.193	0.195	0.198	0.200	0.203
MWS-L-4-17	26.40	1.0	0.085	0.091	0.097	0.103	0.109	0.115	0.121	0.127	0.133	0.139	0.145	0.151	0.158	0.164	0.170	0.176	0.182	0.188	0.194	0.200	0.206	0.212	0.218	0.221	0.224	0.227	0.230	0.233	0.236	0.239
MWS-L-4-19	30.40	1.0	0.098	0.105	0.112	0.119	0.126	0.133	0.140	0.147	0.153	0.160	0.167	0.174	0.181	0.188	0.195	0.202	0.209	0.216	0.223	0.230	0.237	0.244	0.251	0.255	0.258	0.262	0.265	0.269	0.272	0.276
MWS-L-4-21	34.40	1.0	0.111	0.118	0.126	0.134	0.142	0.150	0.158	0.166	0.174	0.182	0.189	0.197	0.205	0.213	0.221	0.229	0.237	0.245	0.253	0.261	0.268	0.276	0.284	0.288	0.292	0.296	0.300	0.304	0.308	0.312
MWS-L-6-8	18.80	1.0	0.060	0.065	0.069	0.073	0.078	0.082	0.086	0.091	0.095	0.099	0.104	0.108	0.112	0.116	0.121	0.125	0.129	0.134	0.138	0.142	0.147	0.151	0.155	0.157	0.160	0.162	0.164	0.166	0.168	0.170
MWS-L-8-8	29.60	1.0	0.095	0.102	0.109	0.115	0.122	0.129	0.136	0.143	0.149	0.156	0.163	0.170	0.177	0.183	0.190	0.197	0.204	0.211	0.217	0.224	0.231	0.238	0.245	0.248	0.251	0.255	0.258	0.262	0.265	0.268
MWS-L-8-12	44.40	1.0	0.143	0.153	0.163	0.173	0.183	0.194	0.204	0.214	0.224	0.234	0.245	0.255	0.265	0.275	0.285	0.296	0.306	0.316	0.326	0.336	0.346	0.357	0.367	0.372	0.377	0.382	0.387	0.392	0.397	0.402
MWS-L-8-16	59.20	1.0	0.190	0.204	0.217	0.231	0.245	0.258	0.272	0.285	0.299	0.312	0.326	0.340	0.353	0.367	0.380	0.394	0.408	0.421	0.435	0.448	0.462	0.476	0.489	0.496	0.503	0.509	0.516	0.523	0.530	0.537
MWS-L-8-20	74.00	1.0	0.238	0.255	0.272	0.289	0.306	0.323	0.340	0.357	0.374	0.391	0.408	0.425	0.442	0.459	0.476	0.493	0.509	0.526	0.543	0.560	0.577	0.594	0.611	0.620	0.628	0.637	0.645	0.654	0.662	0.671
MWS-L-10-20 or MWS-L-8-24	88.80	1.0	0.285	0.306	0.326	0.346	0.367	0.387	0.408	0.428	0.448	0.469	0.489	0.509	0.530	0.550	0.571	0.591	0.611	0.632	0.652	0.673	0.693	0.713	0.734	0.744	0.754	0.764	0.774	0.785	0.795	0.805
4'x'4 media cage	14.80	1.0	0.048	0.051	0.054	0.058	0.061	0.065	0.068	0.071	0.075	0.078	0.082	0.085	0.088	0.092	0.095	0.099	0.102	0.105	0.109	0.112	0.115	0.119	0.122	0.124						

BMP 2

B.6.3 Sizing Flow-Thru Treatment Control BMPs:

Flow-thru treatment control BMPs shall be sized to filter or treat the maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour, for each hour of every storm event. The required flow-thru treatment rate should be adjusted for the portion of the DCV already retained or biofiltered onsite as described in Worksheet B.6-1. The following hydrologic method shall be used to calculate the flow rate to be filtered or treated:

$$Q = C \times i \times A$$

Where:

Q = Design flow rate in cubic feet per second

C = Runoff factor, area-weighted estimate using Table B.1-1.

i = Rainfall intensity of 0.2 in/hr.

A = Tributary area (acres) which includes the total area draining to the BMP, including any offsite or onsite areas that comingle with project runoff and drain to the BMP. Refer to Section 3.3.3 for additional guidance. Street projects consult Section 1.4.3.

Worksheet 0-1: Flow-Thru Design Flows

Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	2,519	cubic-feet
2	DCV retained	$DCV_{retained}$	0	cubic-feet
3	DCV biofiltered	$DCV_{biofiltered}$	0	cubic-feet
4	DCV requiring flow-thru (Line 1 – Line 2 – 0.67*Line 3)	$DCV_{flow\text{-}thru}$	2,519	cubic-feet
5	Adjustment factor (Line 4 / Line 1)*	AF=	1	unitless
6	Design rainfall intensity	i=	0.20	in/hr
7	Area tributary to BMP (s)	A=		acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=		unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=		cfs

TREATMENT VOLUME REQUIRED = DCV x 1.5 = 2,519 x 1.5 = 3,779 cf

1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.

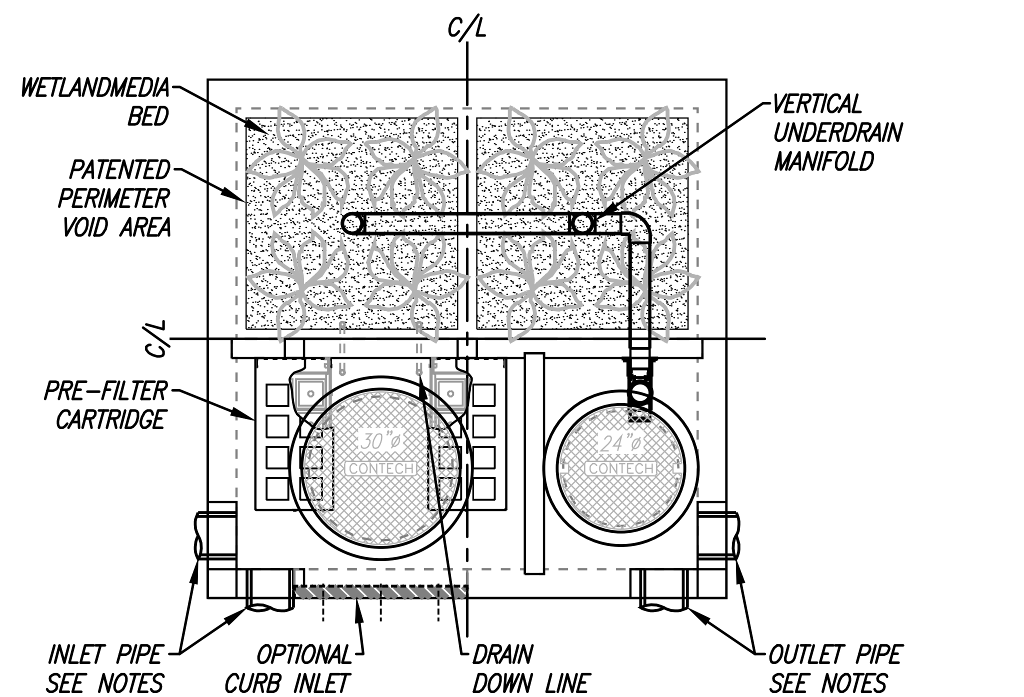
2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and flow based (e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed either by volume in Line 4 or flow rate in Line 9.

3) Proprietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

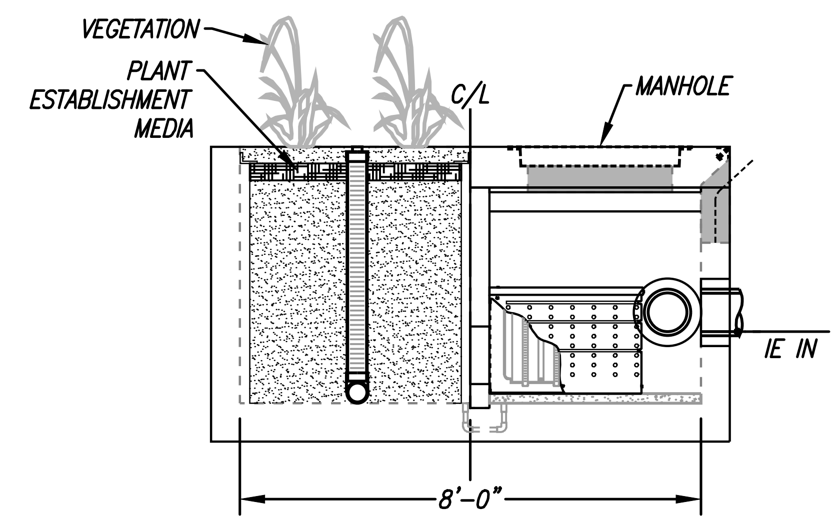
SITE SPECIFIC DATA

PROJECT NUMBER	SDG23-4007		
PROJECT NAME	Extra Space Storage		
PROJECT LOCATION	Santee, CA		
STRUCTURE ID	BMP2		
TREATMENT REQUIRED			
TREATMENT FLOW (CFS)			0.000
PRETREATMENT LOADING RATE (GPM/SF)			3.0 GPM/SF
WETLAND MEDIA LOADING RATE (GPM/SF)			1.0
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			_ _ _ _ _ (CFS)
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
NOTES:			

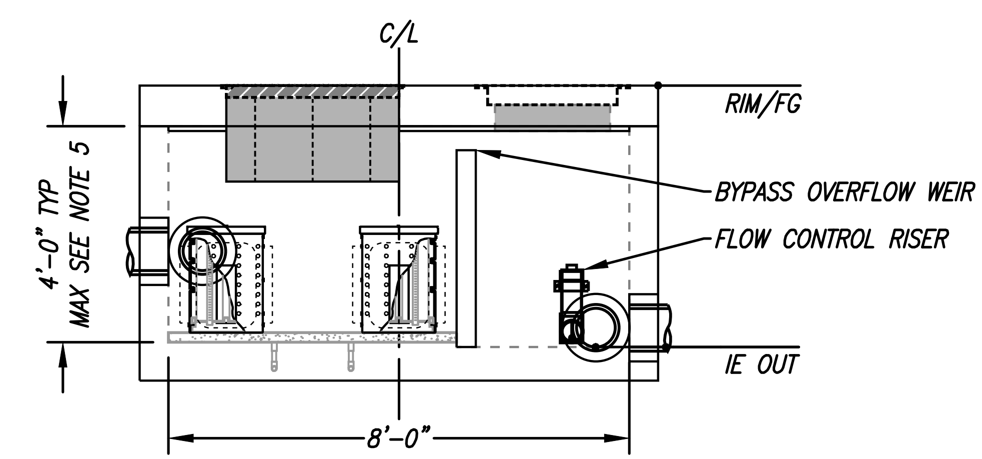
* PRELIMINARY ONLY - NOT FOR CONSTRUCTION



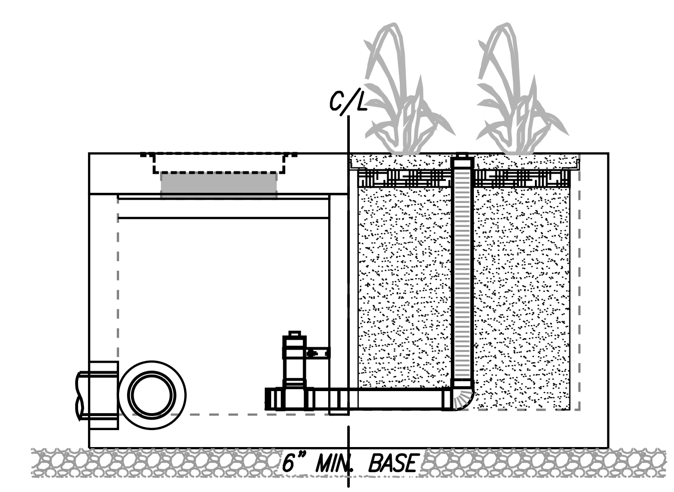
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



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8/14/23SCOTT.SERTICH

CONTECH® ENGINEERED SOLUTIONS LLC
www.ContechES.com

MWS-L-8-8-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

Bio Clean
A Forterra Company

MWS Linear 2.0 HGL Volume Sizing Matrix - 48 Hour Draindown

MWS MODEL SIZE	WETLAND PERIMETER LENGTH (FEET)	LOADING RATE		DRAIN DOWN (HOURS)	AVALIABLE TREATMENT HGL HEIGHT (FEET)	SHALLOW MODELS																				STANDARD HEIGHT MODEL	HIGH CAPACITY MODELS								
		INCH/HR	GPM/SF			1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	4.00	4.50	5.00	5.50	6.00	6.50	7.00
MWS-L-4-4	6.70	26	0.26	48	CF	939	1006	1073	1140	1207	1274	1342	1409	1476	1543	1610	1677	1744	1811	1878	1945	2012	2079	2146	2214	**2281**	2348	2415	2683	3018	3354	3689	4025	4360	4695
					DISCHARGE RATE GPM	2.439	2.613	2.787	2.961	3.136	3.310	3.484	3.658	3.832	4.007	4.181	4.355	4.529	4.703	4.878	5.052	5.226	5.400	5.574	5.749	5.923	6.097	6.271	6.968	7.839	8.710	9.581	10.452	11.323	12.194
MWS-L-4-6	9.30	26	0.26	48	CF	1303	1397	1490	1583	1676	1769	1862	1955	2048	2141	2235	2328	2421	2514	2607	2700	2793	2886	2979	3073	**3166**	3259	3352	3724	4190	4655	5121	5586	6052	6517
					DISCHARGE RATE GPM	3.385	3.627	3.869	4.111	4.352	4.594	4.836	5.078	5.320	5.561	5.803	6.045	6.287	6.529	6.770	7.012	7.254	7.496	7.738	7.979	8.221	8.463	8.705	9.672	10.881	12.090	13.299	14.508	15.717	16.926
MWS-L-4-8	14.80	26	0.26	48	CF	2074	2223	2371	2519	2667	2815	2963	3112	3260	3408	3556	3704	3852	4001	4149	4297	4445	4593	4741	4890	**5038**	5186	5334	5927	6668	7408	8149	8890	9631	10372
					DISCHARGE RATE GPM	5.387	5.772	6.157	6.542	6.926	7.311	7.696	8.081	8.466	8.850	9.235	9.620	10.005	10.390	10.774	11.159	11.544	11.929	12.314	12.698	13.083	13.468	13.853	15.392	17.316	19.240	21.164	23.088	25.012	26.936
MWS-L-4-13	18.40	26	0.26	48	CF	2579	2763	2947	3132	3316	3500	3684	3868	4053	4237	4421	4605	4789	4974	5158	5342	5526	5711	5895	6079	**6263**	6447	6632	7368	8289	9211	10132	11053	11974	12895
					DISCHARGE RATE GPM	6.698	7.176	7.654	8.133	8.611	9.090	9.568	10.046	10.525	11.003	11.482	11.960	12.438	12.917	13.395	13.874	14.352	14.830	15.309	15.787	16.266	16.744	17.222	19.136	21.528	23.920	26.312	28.704	31.096	33.488
MWS-L-4-15	22.40	26	0.26	48	CF	3140	3364	3588	3812	4037	4261	4485	4709	4934	5158	5382	5606	5831	6055	6279	6503	6728	6952	7176	7400	**7625**	7849	8073	8970	10092	11213	12334	13455	14577	15698
					DISCHARGE RATE GPM	8.154	8.736	9.318	9.901	10.483	11.066	11.648	12.230	12.813	13.395	13.978	14.560	15.142	15.725	16.307	16.890	17.472	18.054	18.637	19.219	19.802	20.384	20.966	23.296	26.208	29.120	32.032	34.944	37.856	40.768
MWS-L-4-17	26.40	26	0.26	48	CF	3700	3965	4229	4493	4757	5022	5286	5550	5815	6079	6343	6608	6872	7136	7400	7665	7929	8193	8458	8722	**8986**	9251	9515	10572	11894	13215	14537	15858	17180	18501
					DISCHARGE RATE GPM	9.610	10.296	10.982	11.669	12.355	13.042	13.728	14.414	15.101	15.787	16.474	17.160	17.846	18.533	19.219	19.906	20.592	21.278	21.965	22.651	23.338	24.024	24.710	27.456	30.888	34.320	37.752	41.184	44.616	48.048
MWS-L-4-19	30.40	26	0.26	48	CF	4261	4565	4870	5174	5478	5783	6087	6391	6696	7000	7304	7609	7913	8217	8522	8826	9130	9435	9739	10043	**10348**	10652	10957	12174	13696	15217	16739	18261	19783	21304
					DISCHARGE RATE GPM	11.066	11.856	12.646	13.437	14.227	15.018	15.808	16.598	17.389	18.179	18.970	19.760	20.550	21.341	22.131	22.922	23.712	24.502	25.293	26.083	26.874	27.664	28.454	31.616	35.568	39.520	43.472	47.424	51.376	55.328
MWS-L-4-21	34.40	26	0.26	48	CF	4822	5166	5510	5855	6199	6543	6888	7232	7577	7921	8265	8610	8954	9299	9643	9987	10332	10676	11021	11365	**11709**	12054	12398	13776	15498	17220	18942	20664	22386	24108
					DISCHARGE RATE GPM	12.522	13.416	14.310	15.205	16.099	16.994	17.888	18.782	19.677	20.571	21.466	22.360	23.254	24.149	25.043	25.938	26.832	27.726	28.621	29.515	30.410	31.304	32.198	35.776	40.248	44.720	49.192	53.664	58.136	62.608
MWS-L-6-8	18.80	26	0.26	48	CF	2635	2823	3011	3200	3388	3576	3764	3953	4141	4329	4517	4705	4894	5082	5270	5458	5646	5835	6023	6211	**6399**	6588	6776	7529	8470	9411	10352	11293	12234	13175
					DISCHARGE RATE GPM	6.843	7.332	7.821	8.310	8.798	9.287	9.776	10.265	10.754	11.242	11.731	12.220	12.709	13.198	13.686	14.175	14.664	15.153	15.642	16.130	16.619	17.108	17.597	19.552	21.996	24.440	26.884	29.328	31.772	34.216
MWS-L-8-8	29.60	26	0.26	48	CF	4149	4445	4741	5038	5334	5630	5927	6223	6519	6816	7112	7408	7705	8001	8297	8594	8890	9187	9483	9779	**10076**	10372	10668	11854	13335	14817	16299	17780	19262	20744
					DISCHARGE RATE GPM	10.774	11.544	12.314	13.083	13.853	14.622	15.392	16.162	16.931	17.701	18.470	19.240	20.010	20.779	21.549	22.318	23.088	23.858	24.627	25.397	26.166	26.936	27.706	30.784	34.632	38.480	42.328	46.176	50.024	53.872
MWS-L-8-12	44.40	26	0.26	48	CF	6223	6668	7112	7557	8001	8446	8890	9335	9779	10224	10668	11113	11557	12002	12446	12891	13335	13780	14224	14669	**15113**	15558	16002	17780	20003	22225	24448	26671	28893	31116
					DISCHARGE RATE GPM	16.162	17.316	18.470	19.625	20.779	21.934	23.088	24.242	25.397	26.551	27.706	28.860	30.014	31.169	32.323	33.478	34.632	35.786	36.941	38.095	39.250	40.404	41.558	46.176	51.948	57.720	63.492	69.264	75.036	80.808
MWS-L-8-16	59.20	26	0.26	48	CF	8297	8890	9483	10076	10668	11261	11854	12446	13039	13632	14224	14817	15410	16002	16595	17188	17780	18373	18966	19558	**20151**	20744	21336	23707	26671	29634	32597	35561	38524	41487
					DISCHARGE RATE GPM	21.549	23.088	24.627	26.166	27.706	29.245	30.784	32.323	33.862	35.402	36.941	38.480	40.019	41.558	43.098	44.637	46.176	47.715	49.254	50.794	52.333	53.872	55.411	61.568	69.264	76.960	84.656	92.352	100.048	107.744
MWS-L-8-20	74.00	26	0.26	48	CF	10372	11113	11854	12594	13335	14076	14817	15558	16299	17039	17780	18521	19262	20003	20744	21485	22225	22966	23707	24448	**25189**	25930	26671	29634	33338	37042	40747	44451	48155	51859
					DISCHARGE RATE GPM	26.936	28.860	30.784	32.708	34.632	36.556	38.480	40.404	42.328	44.252	46.176	48.100	50.024	51.948	53.872	55.796	57.720	59.644	61.568	63.492	65.416	67.340	69.264	76.960	86.580	96.200	105.820	115.440	125.060	134.680
MWS-L-8-24	88.80	26	0.26	48	CF	12446	13335	14224	15113	16002	16891	17780	18669	19558	20447	21336	22225	23114	24003	24892	25782	26671	27560	28449	29338	**30227**	31116	32005	35561	40006	44451	48896	53341	57786	62231
					DISCHARGE RATE GPM	32.323	34.632	36.941	39.250	41.558	43.867	46.176	48.485	50.794	53.102	55.411	57.720	60.029	62.338	64.646	66.955	69.264	71.573	73.882	76.190	78.499	80.808	83.117	92.352	103.896	115.440	126.984	138.528	150.072	161.616

ATTACHMENT 2
BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

This is the cover sheet for Attachment 2.

☒ Mark this box if this attachment is empty because the project is exempt from PDP hydromodification management requirements.

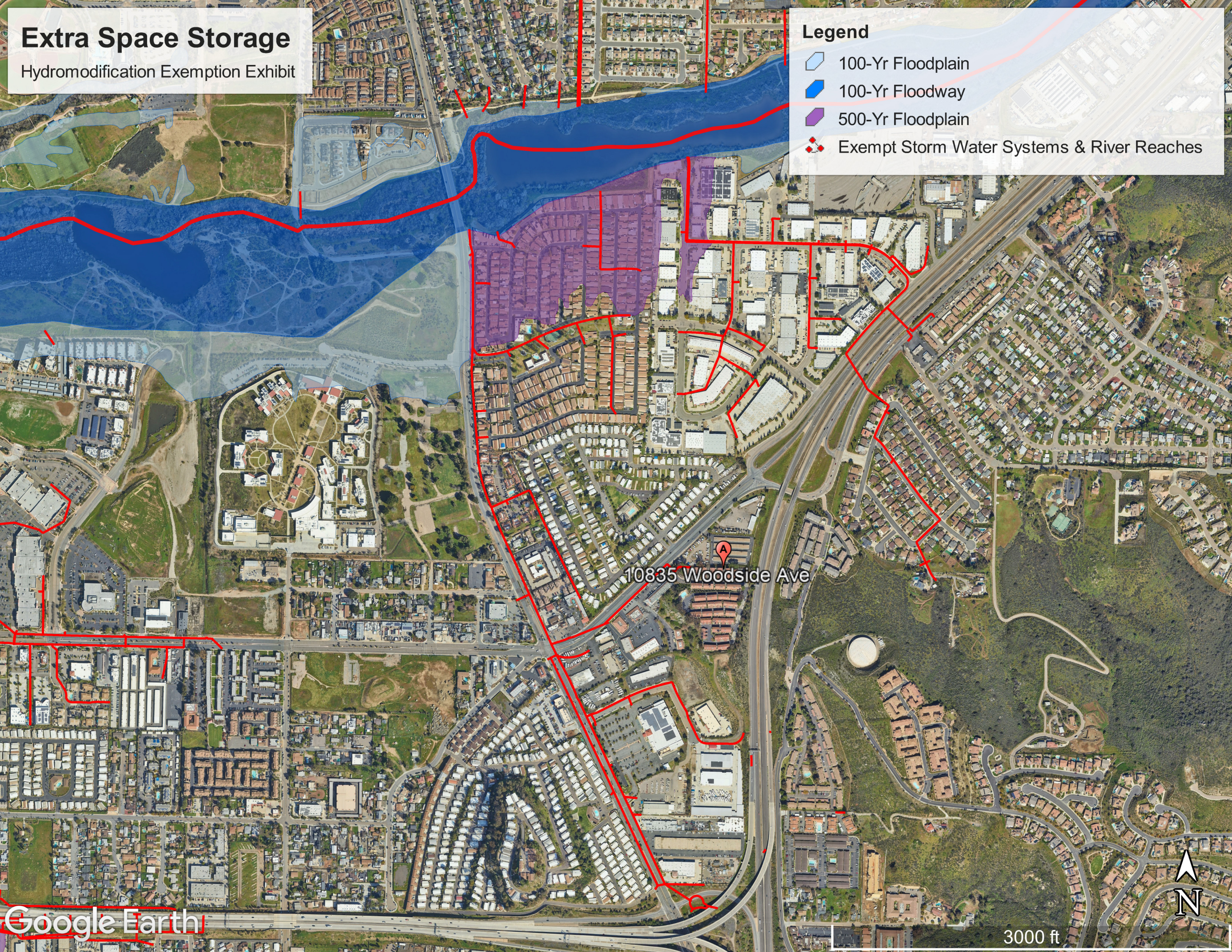
Indicate which Items are Included behind this cover sheet:

Attachment Sequence	**Contents**	**Checklist**
Attachment 2a	Hydromodification Management Exhibit (Required)	☐ Included See Hydromodification Management Exhibit Checklist on the back of this Attachment cover sheet.
Attachment 2b	Management of Critical Coarse Sediment Yield Areas (WMAA Exhibit is required, additional analyses are optional) See Section 6.2 of the BMP Design Manual.	Exhibit showing project drainage boundaries marked on WMAA Critical Coarse Sediment Yield Area Map (Required) Optional analyses for Critical Coarse Sediment Yield Area Determination ☐ 6.2.1 Verification of Geomorphic Landscape Units Onsite ☐ 6.2.2 Downstream Systems Sensitivity to Coarse Sediment ☐ 6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite
Attachment 2c	Geomorphic Assessment of Receiving Channels (Optional) See Section 6.3.4 of the BMP Design Manual.	Not performed ☐ Included ☐ Submitted as separate stand-alone document
Attachment 2d	Flow Control Facility Design, including Structural BMP Drawdown Calculations and Overflow Design Summary (Required) See Chapter 6 and Appendix G of the BMP Design Manual	☐ Included ☐ Submitted as separate stand-alone document
Attachment 2e	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	☐ Included ☐ Not required because BMPs will drain in less than 96 hours

Use this checklist to ensure the required information has been included on the Hydromodification Management Exhibit:

The Hydromodification Management Exhibit must identify:

- ☐ Underlying hydrologic soil group
- ☐ Approximate depth to groundwater
- ☐ Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- ☐ Critical coarse sediment yield areas to be protected
- ☐ Existing topography
- ☐ Existing and proposed site drainage network and connections to drainage offsite
- ☐ Proposed grading
- ☐ Proposed impervious features
- ☐ Proposed design features and surface treatments used to minimize imperviousness
- ☐ Point(s) of Compliance (POC) for Hydromodification Management
- ☐ Existing and proposed drainage boundary and drainage area to each POC (when necessary, create separate exhibits for pre-development and post-project conditions)
- ☐ Structural BMPs for hydromodification management (identify location, type of BMP, and size/detail)


Extra Space Storage
Hydromodification Exemption Exhibit
Legend
100-Yr Floodplain
100-Yr Floodway
500-Yr Floodplain
Exempt Storm Water Systems & River Reaches
10835 Woodside Ave
A
Google Earth
3000 ft
N

ATTACHMENT 3
Structural BMP Maintenance Information

This is the cover sheet for Attachment 3.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	**Contents**	**Checklist**
Attachment 3a	Structural BMP Maintenance Thresholds and Actions (Required)	X Included See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet.
Attachment 3b	Draft Maintenance Agreement (when applicable)	X Included ☐ Not Applicable

Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Information Attachment:

☒ **Preliminary Design / Planning / CEQA level submittal:**

Attachment 3a must identify:

☒ Typical maintenance indicators and actions for proposed structural BMP(s) based on Section 7.7 of the BMP Design Manual

Attachment 3b is not required for preliminary design / planning / CEQA level submittal.

☐ **Final Design level submittal:**

Attachment 3a must identify:

- ☐ Specific maintenance indicators and actions for proposed structural BMP(s). This shall be based on Section 7.7 of the BMP Design Manual and enhanced to reflect actual proposed components of the structural BMP(s)
- ☐ How to access the structural BMP(s) to inspect and perform maintenance
- ☐ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- ☐ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- ☐ Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- ☐ Recommended equipment to perform maintenance
- ☐ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

Attachment 3b: For private entity operation and maintenance, Attachment 3b shall include a draft maintenance agreement in the local jurisdiction's standard format (PDP applicant to contact the [City Engineer] to obtain the current maintenance agreement forms).

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Modular Wetlands® Linear Operatons & Maintenance Manual

MODULAR
WETLANDS®

MODULAR WETLANDS LINEAR
OPERATION & MAINTENANCE MANUAL

TABLE OF CONTENTS

OVERVIEW

This operation and maintenance (O&M) manual is for the Modular Wetlands Linear Biofilter (MWL). Please read the instructions and equipment lists closely prior to starting. It is important to follow all necessary safety procedures associated with state and local regulations. Please contact Contech for more information on pre-authorized third-party service providers who can provide inspection and maintenance services in your area. For a list of service providers in your area, please visit www.conteches.com/maintenance.

WARNING

Confined space entry may be required. Contractor to obtain all equipment and training to meet applicable local and OSHA regulations regarding confined space entry. It is the Contractor's or entry personnel's responsibility to always proceed safely.

SAFETY NOTICE & PERSONAL SAFETY EQUIPMENT

Job site safety is a topic and a practice addressed comprehensively by others. The inclusions here are merely reminders to whole areas of Safety Practice that are the responsibility of the Owner(s), Manager(s), and Service Provider(s). OSHA and Canadian OSH, Federal, State/Provincial, and Local Jurisdiction Safety Standards apply on any given site or project. The knowledge and applicability of those responsibilities is the Service Provider's responsibility and outside the scope of Contech Engineered Solutions.

Safety Boots

Gloves

Hard Hat

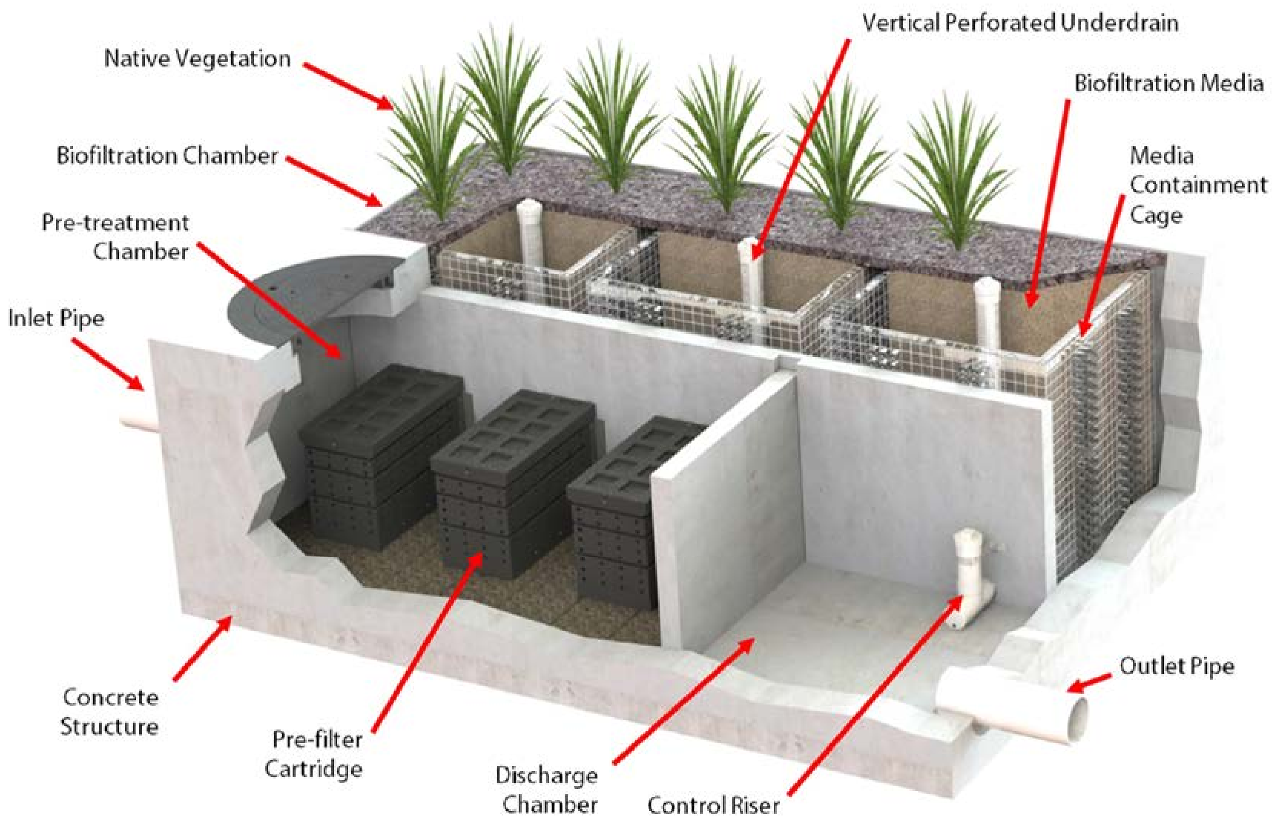
Eye Protection

Maintenance and Protection
of Traffic Plan

MODULAR WETLANDS LINEAR COMPONENTS LIST

The MWL system comes in multiple sizes and configurations, including side by side or end to end layouts, both as open planters or underground systems. See shop drawings (plans) for project specific details.

The standard MWL system is comprised of the following components:



INSPECTION SUMMARY & EQUIPMENT LIST

Stormwater regulations require BMPs be inspected and maintained to ensure they are operating as designed to allow for effective pollutant removal and provide protection to receiving water bodies. It is recommended that inspections be performed multiple times during the first year to assess the site-specific loading conditions. The first year of inspections can be used to set inspection and maintenance intervals for subsequent years to ensure appropriate maintenance is provided.

- Inspect pre-treatment, biofiltration, and discharge chambers an average of once every six to twelve months. Varies based on site specific and local conditions.
- Average inspection time is approximately 15 minutes. Always ensure appropriate safety protocol and procedures are followed.

The following is a list of equipment required to allow for simple and effective inspection of the MWL:

Modular Wetlands Linear Inspection Form

Flashlight

Tape Measure

Access Cover Hook

Ratchet
& 7/16" Socket
(if required for older pre-filter cartridges that have two bolts holding the lids on)

INSPECTION & MAINTENANCE NOTES

1. Following maintenance and/or inspection, it is recommended that the maintenance operator prepare a maintenance/inspection record. The record should include any maintenance activities performed, amount and description of debris collected, and condition of the system and its various filter mechanisms.
2. The owner should keep maintenance/inspection record(s) for a minimum of five years from the date of maintenance. These records should be made available to the governing municipality for inspection upon request at any time.
3. Transport all debris, trash, organics, and sediments to approved facility for disposal in accordance with local and state requirements.
4. Entry into chambers may require confined space training based on state and local regulations.
5. No fertilizer shall be used in the biofiltration chamber.
6. Irrigation should be provided as recommended by manufacturer and/or landscape architect. Amount of irrigation required is dependent on plant species. Some plants may not require irrigation after initial establishment.

INSPECTION PROCESS

1. Prepare the inspection form by writing in the necessary information including project name, location, date & time, unit number and other information (see inspection form).
2. Observe the inside of the system through the access covers. If minimal light is available and vision into the unit is impaired, utilize a flashlight to see inside the system and all chambers.
3. Look for any out of the ordinary obstructions in the inflow pipe, pre-treatment chamber, biofiltration chamber, discharge chamber or outflow pipe. Write down any observations on the inspection form.
4. Through observation and/or digital photographs, estimate the amount of trash, debris accumulated in the pre-treatment chamber. Utilizing a tape measure or measuring stick, estimate the amount of sediment in this chamber. Record this depth on the inspection form.
5. Through visual observation, inspect the condition of the pre-filter cartridges. Look for excessive build-up of sediment on the cartridges, any build-up on the tops of the cartridges, or clogging of the holes. Record this information on the inspection form. The pre-filter cartridges can be further inspected by removing the cartridge tops and assessing the color of the BioMediaGREEN filter cubes (requires entry into pre-treatment chamber - see notes previous notes regarding confined space entry). Record the color of the material. New material is a light green color. As the media becomes clogged, it will turn darker in color, eventually becoming dark brown or black. The closer to black the media is the higher percentage that the media is exhausted and in need of replacement.

6. The biofiltration chamber is generally maintenance-free due to the system's advanced pre-treatment chamber. For units which have open planters with vegetation, it is recommended that the vegetation be inspected. Look for any plants that are dead or showing signs of disease or other negative stressors. Record the general health of the plants on the inspection form and indicate through visual observation or digital photographs if trimming of the vegetation is required.

7. The discharge chamber houses the control riser (if applicable), drain down filter (only in California - older models), and is connected to the outflow pipe. It is important to check to ensure the orifice is in proper operating condition and free of any obstructions. It is also important to assess the condition of the drain down filter media which utilizes a block form of the BioMediaGREEN. Assess in the same manner as the cubes in the pre-filter cartridge as mentioned above.

8. Finalize the inspection report for analysis by the maintenance manager to determine if maintenance is required.

MAINTENANCE INDICATORS

Based upon the observations made during inspection, maintenance of the system may be required based on the following indicators:

- Missing or damaged internal components or cartridges.
- Obstructions in the system or its inlet and/or outlet pipes.
- Excessive accumulation of floatables in the pre-treatment chamber in which the length and width of the chamber is fully impacted more than 18".
- Excessive accumulation of sediment in the pre-treatment chamber of more than 6" in depth.
- Excessive accumulation of sediment on the BioMediaGREEN media housed within the pretreatment cartridges. When media is more than 85% clogged, replacement is required. The darker the BioMediaGREEN, the more clogged it is and in need of replacement.
- Excessive accumulation of sediment on the BioMediaGREEN media housed within the drain down filter (California only - older models).
- Overgrown vegetation.

MAINTENANCE SUMMARY & EQUIPMENT LIST

The time has come to maintain your MWL. All necessary pre-maintenance steps must be carried out before maintenance occurs. Once traffic control has been set up per local and state regulations and access covers have been safely opened, the maintenance process can begin. It should be noted that some maintenance activities require confined space entry. All confined space requirements must be strictly followed before entry into the system. In addition, the following is recommended:

- Prepare the maintenance form by writing in the necessary information including project name, location, date & time, unit number and other info (see maintenance form).
- Set up all appropriate safety and maintenance equipment.
- Ensure traffic control is set up and properly positioned.
- Prepared pre-checks (OSHA, safety, confined space entry) are performed.
    - A gas meter should be used to detect the presence of any hazardous gases prior to entering the system. If hazardous gases are present, do not enter the vault. Following appropriate confined space procedures, take steps such as utilizing a venting system to address the hazard. Once it is determined to be safe, enter the system utilizing appropriate entry equipment such as a ladder and tripod with harness.

The following is a list of equipment required for maintenance of the MWL:

Modular Wetlands Linear Maintenance Form

Flashlight

Access Cover Hook

Ratchet
& 7/16" Socket
(if required for older pre-filter cartridges that have two bolts holding the lids on)

Vacuum Assisted Truck with Pressure Washer

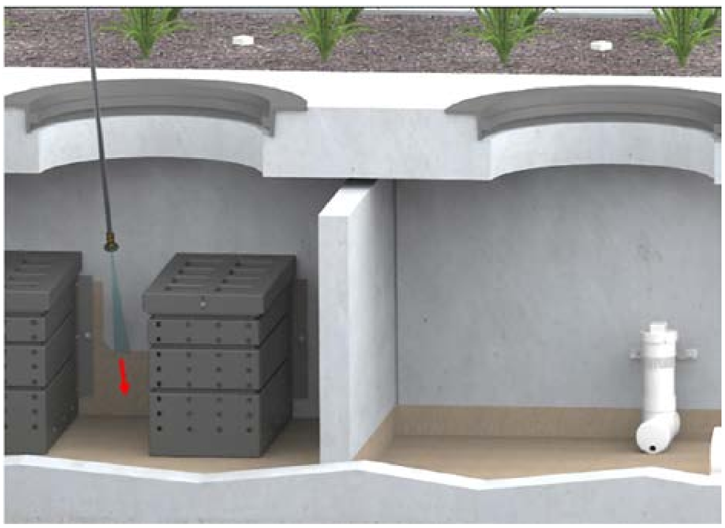
Replacement BioMediaGREEN (If Required)

(order BioMediaGREEN from Contech's Maintenance Team members at https://www.conteches.com/maintenance)

MAINTENANCE INSTRUCTIONS

1. ACCESS COVER REMOVAL

Upon determining that the vault is safe for entry, remove all access cover(s) and position the vacuum truck accordingly.



2. PRESSURE WASH SYSTEM CHAMBERS

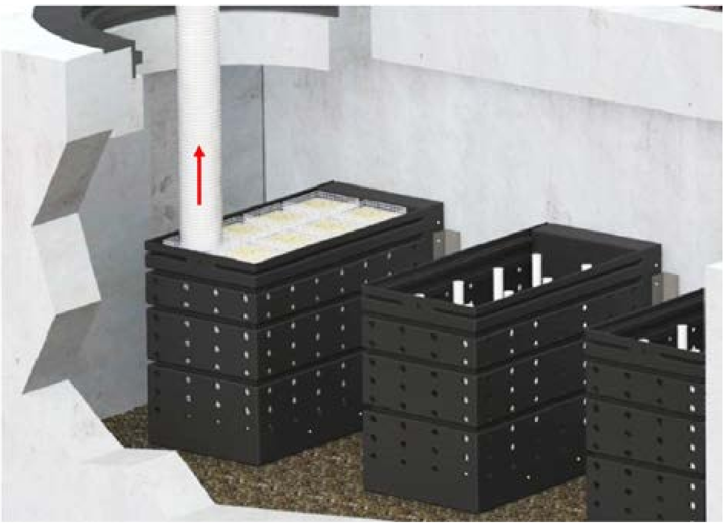
With the pressure washer, spray down pollutants accumulated on the walls and floors of the pre-treatment and discharge chambers. Then wash any accumulated sediment from the pre-filter cartridge(s).

3. VACUUM SYSTEM CHAMBERS

Vacuum out pre-treatment and discharge chambers and remove all accumulated pollutants including trash, debris, and sediments. Be sure to vacuum the pre-treatment floor until the pervious pavers are visible and clean. (**MWL systems outside of California may or may not have pervious pavers on the floor in the pre-treatment chamber)** If pre-filter cartridges require media replacement, proceed to **Step 4.** If not, replace the access cover(s) and proceed to **Step 7**.

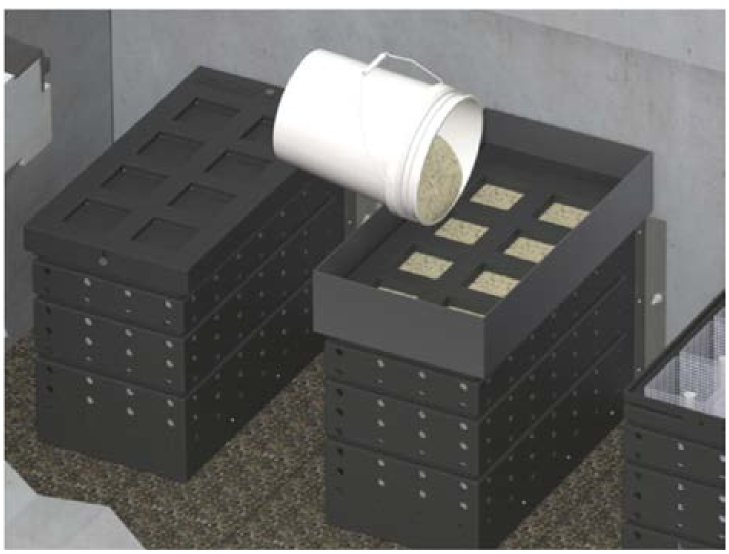
4. PRE-FILTER CARTRIDGE LID REMOVAL

After successfully cleaning out the pre-treatment chamber, enter the chamber and remove the lid(s) from the pre-filter cartridge(s) by removing the two thumb screws. (Older pre-filter cartridges have two bolts holding the lids on that require a 7/16" socket to remove)



5. VACUUM EXISTING PRE-FILTER MEDIA

Utilize the vacuum truck hose or hose extension to remove the filter media from each of the individual media cages. Once filter media has been sucked out, use a pressure washer to spray down the inside of the cartridge and its media cages. Remove cleaned media cages and place to the side. Once removed, the vacuum hose can be inserted into the cartridge to vacuum out any remaining material near the bottom of the cartridge.



6. PRE-FILTER MEDIA REPLACEMENT

Reinstall media cages and fill with new media from the manufacturer or outside supplier. Manufacturer will provide specification of media and sources to purchase. The easiest way to fill the media cages is to utilize a refilling tray that can also be sourced from the manufacturer. Place the refilling tray on top of the cartridge and fill with new bulk media shaking it down into the cages. Using your hands, lightly compact the media into each filter cage. Once the cages are full (each cartridge will hold five heaping 5gal buckets of bulk media), remove the refilling tray and replace the cartridge top, ensuring fasteners are properly tightened.

7. MAINTAINING VEGETATION

In general, the biofiltration chamber is maintenance-free with the exception of maintaining the vegetation. The MWL utilizes vegetation similar to surrounding landscape areas, therefore, trim vegetation to match surrounding vegetation. If any plants have died, replace them with new ones.

8. INSPECT UNDERDRAIN SYSTEM

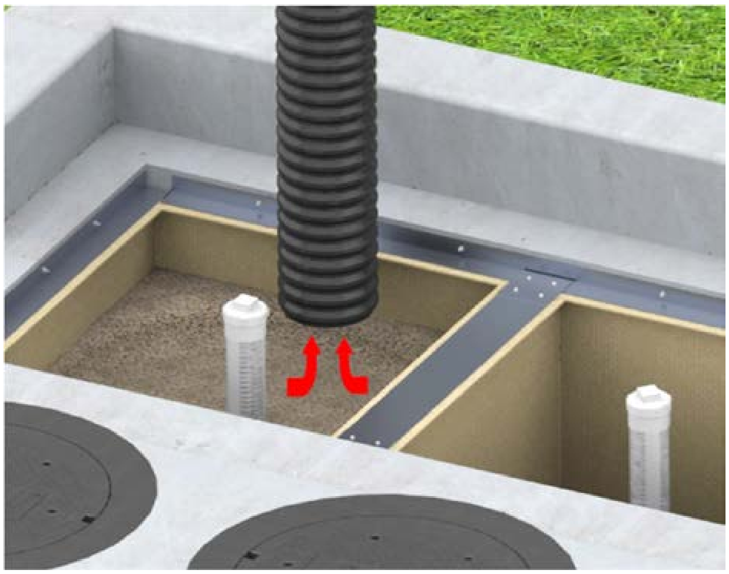
Each vertical under drain on the biofiltration chamber has a removable threaded cap that can be taken off to check for any blockages or root growth. Once removed, a jetting attachment to the pressure washer can be used to clean out the under drain and orifice riser if needed.

9. REPLACE ACCESS COVERS

Once maintenance is complete, replace all access cover(s)

REPLACING BIOFILTRATION MEDIA IF REQUIRED

As with all biofilter systems, at some point the biofiltration media will need to be replaced, either due to physical clogging or sorptive exhaustion (for dissolved pollutants) of the media ion exchange capacity (to remove dissolved metals and phosphorous). The general life of this media is 10 to 20 years based on site specific conditions and pollutant loading, so replacing the biofiltration media should not be a common occurrence. In the event that the biofiltration media requires replacement, contact one of Contech's Maintenance Team members at https://www.conteches.com/maintenance to order new biofiltration media. The quantity of media needed can be determined by providing the model number and unit depth. Media will be provided in super sacks for easy installation. Each sack will weigh between 1,000 and 2,000 lbs. Biofiltration media replacement can be done following the steps below:



1. **VACUUM EXISTING BIOFILTRATION MEDIA**

Remove the mulch and vegetation to access the biofiltration media, and then position the vacuum truck accordingly. Utilize the vacuum truck to vacuum out all the media. Once all media is removed, use the pressure washer to spray down all the netting and underdrain systems on the inside of the media containment cage. Vacuum out any remaining debris after spraying down netting. Inspect the netting for any damage or holes. If the netting is damaged, it can be repaired or replaced with guidance by the manufacturer.

2. **INSTALLING NEW BIOFILTRATION MEDIA**

Ensure that the chamber is fully cleaned prior to installation of new media into the media containment cage(s). Media will be provided in super sacks for easy installation. A lifting apparatus (forklift, backhoe, boom truck, or other) is recommended to position the super sack over the biofiltration chamber. Add media in lifts to ensure that the riser pipes remain vertical. Be sure to only fill the media cage(s) up to the same level as the old media.

3. REPLANT VEGETATION

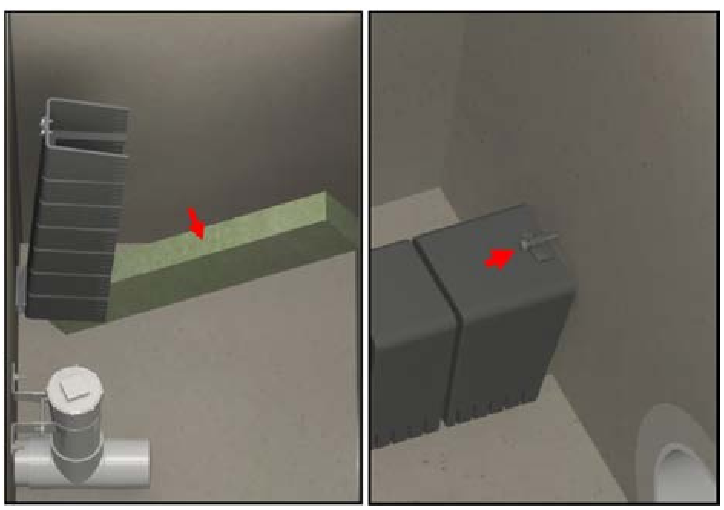
Once the media has been replaced, replant the vegetation and cover biofiltration chamber with approved mulch (if applicable). If the existing vegetation is not being reused, and new vegetation is being planted, you will need to acquire new plant establishment media that will be installed just below the mulch layer at each plant location. (see plan drawings for details). Contact one of Contech's Maintenance Team members at https://www.conteches.com/maintenance to order new plant establishment media.

REPLACING DRAIN DOWN FILTER MEDIA (ONLY ON OLDER CALIFORNIA MODELS)

NOTE: The drain down filter is only found on units installed in California prior to 2023
If during inspection it was determined that the drain down filter media requires replacement, contact one of Contech's Maintenance Team members at https://www.conteches.com/maintenance to order new media.

1. **REMOVE EXISTING DRAIN DOWN MEDIA**

Pull knob back to unlock the locking mechanism and lift the drain down filter housing to remove the used BioMediaGREEN filter block.



2. **INSTALL NEW DRAIN DOWN MEDIA**

Ensure that the chamber and housing are fully cleaned prior to installation of new media, and then insert the new BioMediaGREEN filter block. The media filter block should fit snugly between the chamber walls and be centered under the filter housing. Lower the housing over the filter block and secure the locking mechanism.

NOTES

CONTECH® ENGINEERED SOLUTIONS

Inspection Report
Modular Wetlands Linear

Project Name ______________________________

Project Address ______________________________ (city) (Zip Code)

Owner / Management Company ______________________________

Contact ______________________________ Phone ( ) –

Inspector Name ______________________________ Date ____/____/______ Time ____________ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition ______________________________ Additional Notes ______________________________

For Office Use Only
(Reviewed By)
(Date) Office personnel to complete section to the left.

Inspection Checklist

Modular Wetland System Type (Curb, Grate or UG Vault): ______________ Size (22', 14' or etc.): ______________

Structural Integrity:	Yes	No	Comments	
Damage to pre-treatment access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?				
Damage to discharge chamber access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?				
Does the MWS unit show signs of structural deterioration (cracks in the wall, damage to frame)?				
Is the inlet/outlet pipe or drain down pipe damaged or otherwise not functioning properly?				
Working Condition:				
Is there evidence of illicit discharge or excessive oil, grease, or other automobile fluids entering and clogging the unit?				
Is there standing water in inappropriate areas after a dry period?				
Is the filter insert (if applicable) at capacity and/or is there an accumulation of debris/trash on the shelf system?				
Does the depth of sediment/trash/debris suggest a blockage of the inflow pipe, bypass or cartridge filter? If yes, specify which one in the comments section. Note depth of accumulation in in pre-treatment chamber.				Depth:
Does the cartridge filter media need replacement in pre-treatment chamber and/or discharge chamber?			Chamber:	
Any signs of improper functioning in the discharge chamber? Note issues in comments section.				
Other Inspection Items:				
Is there an accumulation of sediment/trash/debris in the wetland media (if applicable)?				
Is it evident that the plants are alive and healthy (if applicable)? Please note Plant Information below.				
Is there a septic or foul odor coming from inside the system?				

Waste:	Yes	No
Sediment / Silt / Clay		
Trash / Bags / Bottles		
Green Waste / Leaves / Foliage		

Recommended Maintenance	
No Cleaning Needed	
Schedule Maintenance as Planned	
Needs Immediate Maintenance	

Plant Information	
Damage to Plants	
Plant Replacement	
Plant Trimming	

Additional Notes: ______________________________

CONTECH® ENGINEERED SOLUTIONS

Cleaning and Maintenance Report
Modular Wetlands Linear

Project Name ______________________________

Project Address ______________________________ (city) (Zip Code)

Owner / Management Company ______________________________

Contact ______________________ Phone (   )   –

Inspector Name ______________________ Date ____/____/______ Time __________ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm   Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition ______________________ Additional Notes ______________________

For Office Use Only
(Reviewed By)
(Date) Office personnel to complete section to the left.

Site Map #	GPS Coordinates of Insert	Manufacturer / Description / Sizing	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Total Debris Accumulation	Condition of Media 25/50/75/100 (will be changed @ 75%)	Operational Per Manufactures' Specifications (If not, why?)
	Lat: Long:	MWS Catch Basins						
		MWS Sedimentation Basin						
		Media Filter Condition						
		Plant Condition						
		Drain Down Media Condition						
		Discharge Chamber Condition						
		Drain Down Pipe Condition						
		Inlet and Outlet Pipe Condition						

Comments:

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800-338-1122

WWW.CONTECHES.COM

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BioClean® Full Capture Grate Inlet Filter
Maintenance Manual

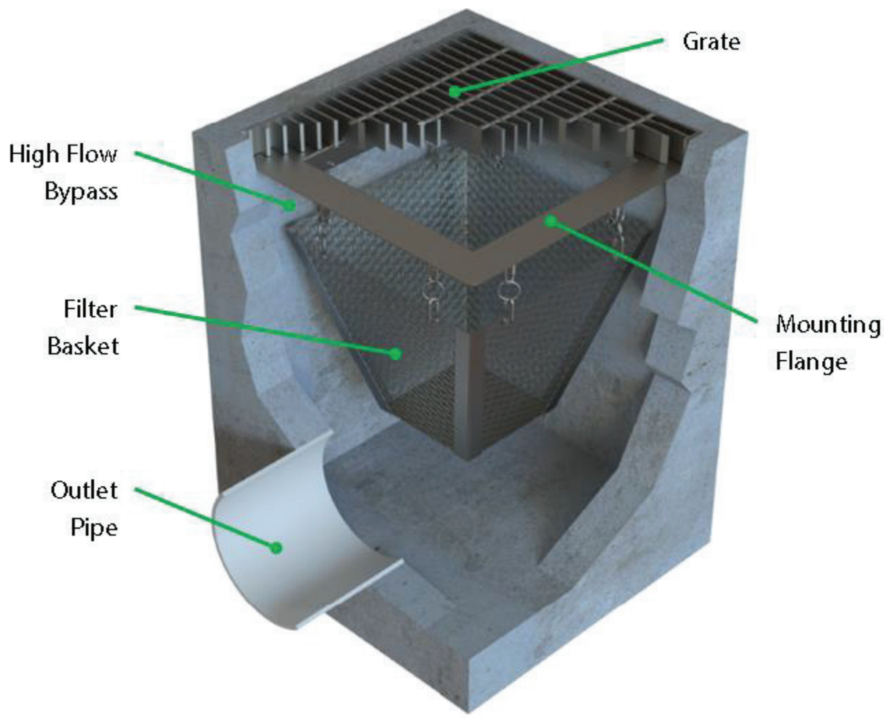
BIO CLEAN® FULL CAPTURE GRATE INLET FILTER
OPERATION & MAINTENANCE MANUAL

TABLE OF CONTENTS

OVERVIEW

Contech's Bio Clean® Full Capture Grate Inlet Filter is a stormwater catch basin filter designed to remove trash, debris, sediments, particulates, and hydrocarbons (with hydrocarbon boom add-on). Constructed of 100% stainless steel, the filters are available at various sizes and depths, allowing them to fit in any grated catch basin inlet. The heavy-duty construction allows for cleaning with any vacuum truck. The filter can also easily be cleaned by hand.

As with all stormwater BMPs, inspection and maintenance on the Grate Inlet Filter is necessary. Stormwater regulations require BMPs be inspected and maintained to ensure they are operating as designed to allow for effective pollutant removal and provide protection to receiving water bodies. It is recommended that inspections be performed multiple times during the first year to assess site-specific loading conditions. This is recommended because pollutant loading can vary greatly from site to site. Variables such as nearby soil erosion or construction sites, winter sanding of roads, amount of daily traffic, and land use can increase pollutant loading on the system. The first year of inspections can be used to set inspection and maintenance intervals for subsequent years. Without appropriate maintenance, a BMP can exceed its storage capacity which can negatively affect its continued performance in removing and retaining captured pollutants.



Filter Diagram

WARNING

Confined space entry may be required. Contractor to obtain all equipment and training to meet applicable local and OSHA regulations regarding confined space entry. It is the Contractor's or entry personnel's responsibility to always proceed safely.

SAFETY NOTICE AND PERSONAL SAFETY EQUIPMENT

Job site safety is a topic and a practice addressed comprehensively by others. The inclusions here are merely reminders to whole areas of Safety Practice that are the responsibility of the Owner(s), Manager(s), and Service Provider(s). OSHA and Canadian OSH, Federal, State/Provincial, and Local Jurisdiction Safety Standards apply on any given site or project. The knowledge and applicability of those responsibilities is the Service Provider's responsibility and outside the scope of Contech Engineered Solutions.

Safety Boots

Gloves

Hard Hat

Eye Protection

Maintenance and Protection
of Traffic Plan

INSPECTION SUMMARY & EQUIPMENT LIST

The core to any successful stormwater BMP maintenance program is routine inspections. The inspection steps required on the Grate Inlet Filter are quick and easy. As mentioned above, the first year should be seen as the maintenance interval establishment phase. During the first year, more frequent inspections should occur in order to gather loading data and maintenance requirements for that specific site. This information can be used to establish a base for long-term inspection and maintenance interval requirements.

The following is a list of equipment required to allow for simple and effective inspection of the Grate Inlet Filter:


CONTECH
Inspection and Maintenance Report
Catch Basin Only

Contech Inspection and Maintenance Report

Flashlight

Access Cover Hook

INSPECTION AND MAINTENANCE NOTES

1. Following maintenance and/or inspection, it is recommended that the maintenance operator prepare a maintenance/inspection record. The record should include any maintenance activities performed, amount and description of debris collected, and condition of the system and its various filter mechanisms.
2. The owner should keep maintenance/inspection record(s) for a minimum of five years from the date of maintenance. These records should be made available to the governing municipality for inspection upon request at any time.
3. Transport all debris, trash, organics, and sediments to approved facility for disposal in accordance with local and state requirements.
4. Entry into the catch basin may require confined space training based on state and local regulations. It is generally not required for routine inspections or maintenance of the Grate Inlet Filter.

INSPECTION PROCESS

1. Prepare the inspection form by writing in the necessary information including project name, location, date & time, unit number and other information (see inspection form).
2. Observe the filter with the grate removed.
3. Look for any out of the ordinary obstructions on the grate or in the filter and its bypass. Write down any observations on the inspection form.
4. Through observation and/or digital photographs, estimate the amount of trash, foliage, and sediment accumulated inside the filter basket. Record this information on the inspection form.
5. Through visual observation, inspect the condition of the filter basket. Look for excessive build-up of sediment or any damage to the system. Record this information on the inspection form.
6. Observe the condition and color of the optional hydrocarbon boom (if present). Record this information on the inspection form.
7. Finalize the inspection report for analysis by the maintenance manager to determine if maintenance is required.

MAINTENANCE INDICATORS

Based upon the observations made during inspection, maintenance of the system may be required based on the following indicators:

- Missing or damaged internal components.
- Obstructions in the filter basket and/or its bypass.
- Excessive accumulation of trash, foliage, and sediment in the filter basket. Maintenance is required when the basket is greater than half-full.
- The following chart shows the 50% and 100% storage capacity of each filter size:

Basket Model	Basket Depth (inches)	Top Width (inches)	Top Length (inches)	50% Storage Capacity (CF)	100% Storage Capacity (CF)
BIO -GRATE-FULL-12-12-12	6	10	10	0.15	0.30
BIO -GRATE- FULL -18-18-12	6	15	15	0.33	0.66
BIO -GRATE- FULL -24-24-12	6	20	20	0.59	1.18
BIO -GRATE- FULL -24-40-12	6	20	30	0.88	1.76
BIO -GRATE- FULL -24-24-24	18	20	20	1.22	2.44
BIO -GRATE- FULL -24-40-24	18	20	30	1.82	3.64
BIO -GRATE- FULL -36-36-24	18	30	30	2.73	5.46

MAINTENANCE SUMMARY

It is recommended that maintenance occurs at least two days after the most recent rain event to allow debris and sediments to dry out. Maintaining the system while flows are still entering it will increase the time and complexity required for maintenance.

Cleaning of the Grate Inlet Filter can be performed from the finished surface without entry into catch basin utilizing a vacuum truck. All necessary pre-maintenance steps must be carried out before maintenance occurs. Once traffic control has been set up per local and state regulations and the grate has been safely removed, the maintenance process can begin. It should be noted that some maintenance activities or unique and custom system configurations may require confined space entry. All confined space requirements must be strictly followed before entry into the system. In addition, the following is recommended:

- Prepare the maintenance form by writing in the necessary information including project name, location, date & time, unit number and other info (see maintenance form).
- Set up all appropriate safety and maintenance equipment.
- Ensure traffic control is set up and properly positioned.
- Prepared pre-checks (OSHA, safety, confined space entry) are performed.

MAINTENANCE EQUIPMENT

The following is a list of equipment to allow for simple and effective maintenance of the Grate Inlet Filter. It is recommended that a vacuum truck be utilized to minimize the time required to maintain the Grate Inlet Filter, though it can easily be cleaned by hand.


CONTECH ENGINEERED SOLUTIONS

Inspection and Maintenance Report
Catch Basin Only

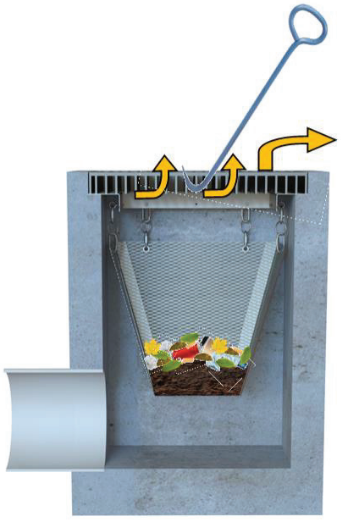
Contech Inspection and Maintenance Report

Flashlight

Access Cover Hook

Vacuum Assisted Truck with Pressure Washer (Recommended)

MAINTENANCE INSTRUCTIONS



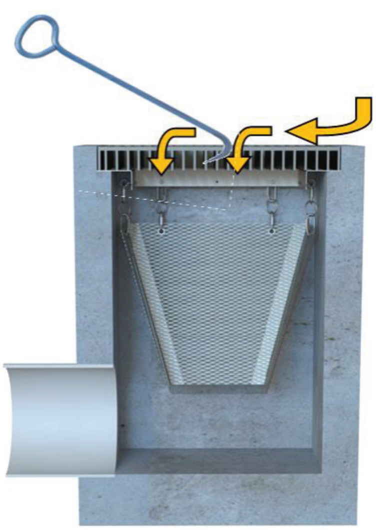
1. INSPECT CATCH BASIN

Inspect the Grate Inlet Filter as detailed under Inspection Process above.

2. VACUUM AND WASH FILTER BASKET

Using an extension on a vacuum truck, position the hose over the opened catch basin. Insert the vacuum hose down into the filter basket and suck out trash, foliage, and sediment. Pressure wash the sides and bottom of the filter basket to remove any stuck debris.

If present, inspect the hydrocarbon boom as detailed on the next page.



3. FINISH MAINTENANCE

When maintenance is complete, replace the grate and remove all traffic control.

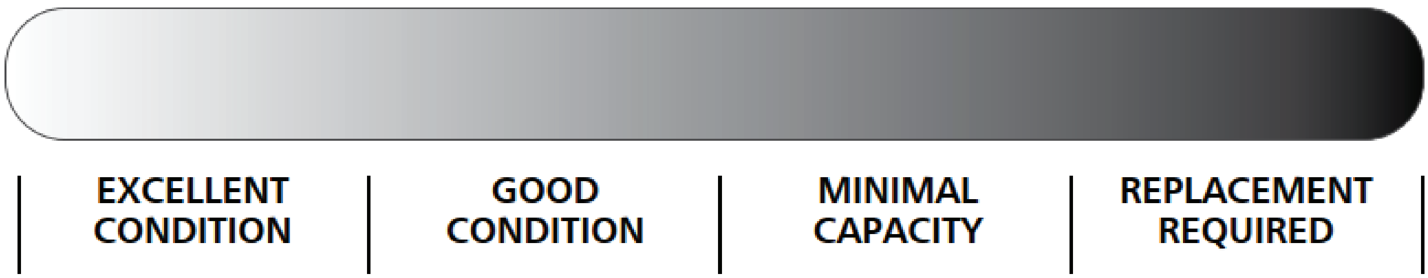
All removed debris and pollutants shall be disposed of following local and state requirements. Disposal requirements for recovered pollutants may vary depending on local guidelines. In most areas the sediment, once dewatered, can be disposed of in a sanitary landfill. It is not anticipated that the sediment would be classified as hazardous waste.

In the case of damaged components, replacement parts can be ordered from the manufacturer.

HYDROCARBON BOOM MAINTENANCE

Remove the optional hydrocarbon boom that is attached to the inside of the filter basket (if present). The hydrocarbon boom is fastened to vertical rails on two opposite sides of the basket. Assess the color and condition of the boom using the diagram below. If replacement is required, install and fasten on a new hydrocarbon boom. Booms can be ordered directly from the manufacturer.

The following is a replacement indication color chart for the hydrocarbon booms:



NOTES

CONTECH
ENGINEERED SOLUTIONS

800-338-1122

WWW.CONTECHES.COM

CONTECH ENGINEERED SOLUTIONS LLC PROVIDES SITE SOLUTIONS FOR THE CIVIL ENGINEERING INDUSTRY. CONTECH'S PORTFOLIO INCLUDES BRIDGES, DRAINAGE, SANITARY SEWER, STORMWATER AND EARTH STABILIZATION PRODUCTS. FOR INFORMATION ON OTHER CONTECH DIVISION OFFERINGS, VISIT CONTECHES.COM OR CALL 800-338-1122.

NOTHING IN THIS CATALOG SHOULD BE CONSTRUED AS A WARRANTY. APPLICATIONS SUGGESTED HEREIN ARE DESCRIBED ONLY TO HELP READERS MAKE THEIR OWN EVALUATIONS AND DECISIONS, AND ARE NEITHER GUARANTEES NOR WARRANTIES OF SUITABILITY FOR ANY APPLICATION. CONTECH MAKES NO WARRANTY WHATSOEVER, EXPRESS OR IMPLIED, RELATED TO THE APPLICATIONS, MATERIALS, COATINGS, OR PRODUCTS DISCUSSED HEREIN. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE ARE DISCLAIMED BY CONTECH. SEE CONTECH'S CONDITIONS OF SALE (AVAILABLE AT WWW.CONTECHES.COM/COS) FOR MORE INFORMATION.

SUPPORT

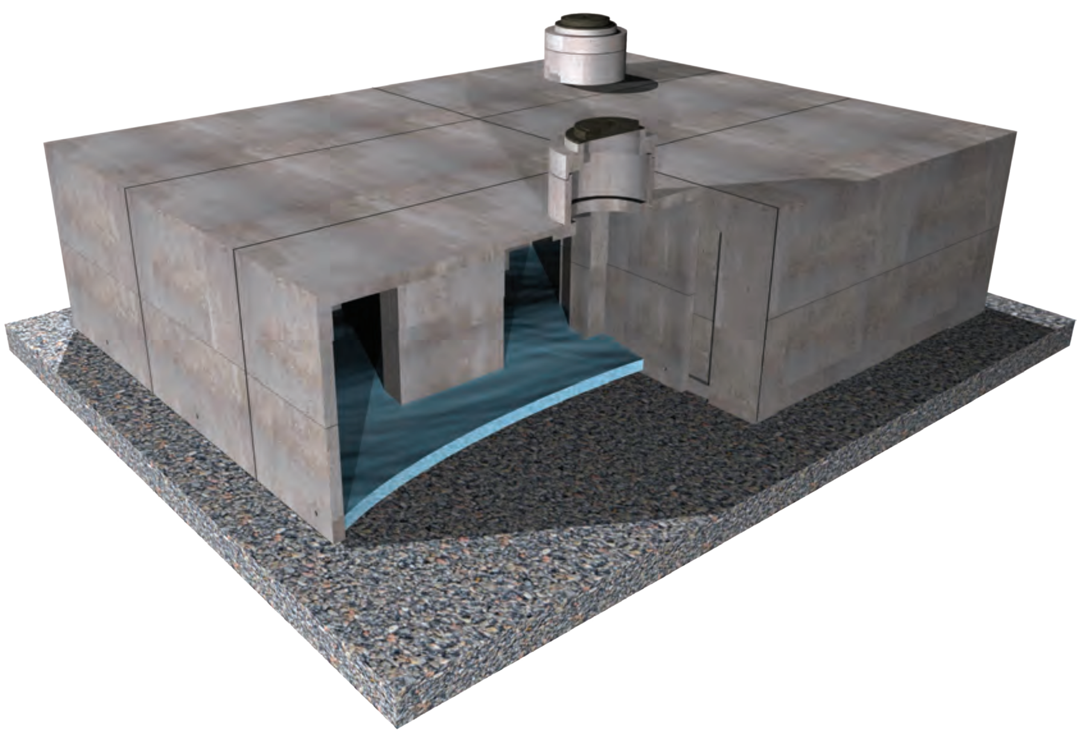
DRAWINGS AND SPECIFICATIONS ARE AVAILABLE AT WWW.CONTECHES.COM

BC-GIF-Full Capture-Maintenance-Manual 11/23

Oldcastle Infrastructure™
A CRH COMPANY

STORMCAPTURE®

Inspection and Maintenance Guide



Water

Description

The StormCapture® system is an underground, modular, structural precast concrete storage system for stormwater detention, retention, infiltration, harvesting and reuse, and water quality volume storage. The system's modular design utilizes multiple standard precast concrete units with inside dimensions of 7 feet by 15 feet (outside dimensions of 8 feet by 16 feet) to form an underground storage system. The inside height of the StormCapture system can range from 2 feet to 14 feet. This modular design provides limitless configuration options for site-specific layouts.

StormCapture components can be provided as either open-bottom modules to promote infiltration or closed-bottom modules for detention. In some cases, StormCapture modules can be placed in a checkerboard configuration for an even more efficient design. A Link Slab, with a footprint of 9 feet by 17 feet, is then used to bridge each space without a module.

The standard StormCapture design incorporates lateral and longitudinal passageways between modules to accommodate internal stormwater conveyance throughout the system. These passageways may be classified as either a "window configuration" with standard 12-inch tall sediment baffles extending up from the floor of the module to the bottom of the window, or a "doorway configuration" without the sediment baffles. The function and drainage rate of a StormCapture system depends on site-specific conditions and requirements.

Stormwater typically enters the StormCapture system through an inlet pipe. Grated inlets can also be used for direct discharge into the system. The StormCapture system is rated for H-20 traffic loading with limited cover. Higher load requirements can also be accommodated. In addition, StormCapture systems are typically equipped with a limited number of maintenance modules that provide access to the system for ongoing inspection and maintenance.

Function

The StormCapture system is primarily used to manage water quantity by temporarily storing stormwater runoff from impervious surfaces to prevent flooding, slow down the rate at which stormwater leaves the site, and reduce receiving stream erosion. In addition, the StormCapture system can be used to capture stormwater runoff for water quality treatment. Regardless of how the StormCapture system is used, some sedimentation may occur in the modules during the time water is stored.

Configurations

The configuration of the StormCapture systems may vary, depending on the water quality and/or quantity requirements of the site. StormCapture configurations for detention, retention/infiltration, and retention/harvesting are described below.

Detention

StormCapture Detention systems are designed with a closed bottom to detain stormwater runoff for controlled discharge from the site. This design may incorporate a dead storage sump and a permanent pool of water if the outlet pipe is higher than the floor elevation. Discharge from the system is typically controlled by an outlet orifice and/or outlet weir to regulate the rate of stormwater leaving the system. StormCapture Detention systems are typically designed with silt-tight joints, however when conditions exist that require a StormCapture system to be watertight, the system may be wrapped in a continuous, impermeable geomembrane liner. If the StormCapture Detention system includes Link Slabs, a liner must be used to detain water since the chambers under each Link Slab have no floor slab. In this case, care must be taken by maintenance personnel not to damage the exposed liner beneath each Link Slab.

Retention/Infiltration

StormCapture Retention/Infiltration systems are designed with an open bottom to allow for the retention of stormwater onsite through infiltration into the base rock and surrounding soils. For infiltration systems, the configuration of the base of the StormCapture system may vary, depending on the needs of the site and the height of the system. Some systems may use modules that have fully open bottoms with no concrete floor, while other systems may use modules that incorporate floor openings in the base of each module. These are typically 24-inch by 24-inch openings. For open-bottom systems, concrete splash pads may be installed below inlet grate openings and pipe inlets to prevent erosion of base rock. A StormCapture Infiltration system may have an elevated discharge pipe for peak overflow.

Retention/Harvesting

StormCapture Retention/Harvesting systems are similar to detention systems using closed-bottom modules, but stormwater is typically retained onsite for an extended period of time and later reused for non-potable applications or irrigation. For rainwater harvesting systems, an impermeable geomembrane liner is typically installed around the modules to provide a water-tight system.

Inspection and Maintenance Overview

State and local regulations typically require all stormwater management systems to be inspected on a regular basis and maintained as necessary to ensure performance and protect downstream receiving waters. Inspections should be used to evaluate the conditions of the system. Based on these inspections, maintenance needs can be determined. Maintenance needs vary by site and system. Using this Inspection & Maintenance Guide, qualified maintenance personnel should be able to provide a recommendation for maintenance needs. Requirements may range from minor activities such as removing trash, debris or pipe blockages to more substantial activities such as vacuuming and removal of sediment and/or non-draining water. Long-term maintenance is important to the operation of the system since it prevents excessive pollutant buildup that may limit system performance by reducing the operating capacity and increasing the potential for scouring of pollutants during periods of high flow.

Only authorized personnel shall inspect and/or enter a StormCapture system. Personnel must be properly trained and equipped before entering any underground or confined space structure. Training includes familiarity with and adherence to any and all local, state and federal regulations governing confined space access and the operation, inspection, and maintenance of underground structures.

Inspection and Maintenance Frequency

The StormCapture system should be inspected on a regular basis, typically twice per year, and maintained as required. The maintenance frequency will be driven by the amount of runoff and pollutant loading encountered by a given system. Local jurisdictions may also dictate inspection and maintenance frequencies.

Inspection Equipment

The following equipment is helpful when conducting StormCapture inspections:

- Recording device (pen and paper form, voice recorder, iPad, etc.)
- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Confined space entry equipment, if needed
- Flashlight
- Tape measure
- Measuring stick or sludge sampler
- Long-handled net (optional)

Inspection Procedures

A typical StormCapture system provides strategically placed access points that may be used for inspection. StormCapture inspections are usually conducted visually from the ground surface, without entering the unit. This typically limits inspection to the assessment of sediment depth, water drain down, and general condition of the modules and components, but a more detailed assessment of structural condition may be conducted during a maintenance event.

To complete an inspection, safety measures including traffic control should be deployed before the access covers are removed. Once the covers have been removed, the following items should be inspected and recorded (see form provided at the end of this document) to determine whether maintenance is required:

- Observe inlet and outlet pipe penetrations for blockage or obstruction.
- If possible, observe internal components like baffles, flow control weirs or orifices, and steps or ladders to determine whether they are broken, missing, or possibly obstructed.
- Observe, quantify, and record the sediment depths within the modules.
- Retrieve as much floating trash as possible with a long-handled net. If a significant amount of trash remains, make a note in the Inspection & Maintenance Log.
- For infiltration systems, local regulations may require monitoring of the system to ensure drain down is occurring within the required permit time period (typically 24 to 72 hours). If this is the case, refer to local regulations for proper inspection procedure.

Maintenance Indicators

Maintenance should be scheduled if any of the following conditions are identified during the inspection:

- Inlet or outlet piping is blocked or obstructed.
- Internal components are broken, missing, or obstructed.
- Accumulation of more than six inches of sediment on the system floor or in the sump, if applicable.
- Significant accumulation of floating trash and debris that cannot be retrieved with a net.
- The system has not drained completely after it hasn't rained for one to three days, or the drain down does not meet permit requirements.
- Any hazardous material is observed or reported.

Maintenance Equipment

The following equipment is helpful when conducting StormCapture maintenance:

- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Confined space entry equipment, if needed
- Flashlight
- Tape measure
- Vacuum truck

Maintenance Procedures

Maintenance should be conducted during dry weather when no flow is entering the system. Confined space entry is usually required to maintain the StormCapture. Only personnel that are OSHA Confined Space Entry trained and certified may enter underground structures. Once safety measures such as traffic control have been deployed, the access covers may be removed and the following activities may be conducted to complete maintenance:

- Remove trash and debris using an extension on the end of the boom hose of the vacuum truck. Continue using the vacuum truck to completely remove accumulated sediment. Some jetting may be necessary to fully evacuate sediment from the system floor or sump. Jetting is acceptable in systems with solid concrete floors or base slabs (referred to as closed-bottom systems). However, jetting is not recommended for open-bottom systems with a gravel foundation since it may cause bedding displacement, undermining of the foundation, or internal disturbance.
- All material removed from the system during maintenance must be disposed of in accordance with local regulations. In most cases, the material may be handled in the same manner as disposal of material removed from sumped catch basins or manholes.
- Inspect inlet and outlet pipe penetrations for cracking and other signs of movement that may cause leakage.
- Inspect the concrete splash pads (applicable for open-bottom systems only) for proper function and placement.
- Inspect the system for movement of modules. There should be less than 3/4-inch spacing between modules.
- Inspect the general interior condition of modules for concrete cracking or deterioration. If the system consists of horizontal joints as part of the modules, inspect those joints for leakage, displacement or deterioration.

Be sure to securely replace all access covers, as appropriate, following inspection and/or maintenance. If the StormCapture modules or any of the system components show significant signs of cracking, spalling, or deterioration or if there is evidence of excessive differential settlement between modules, contact Oldcastle Infrastructure at **800-579-8819.**

StormCapture
Inspection & Maintenance Log

Refer to as-built records for details about system size and location onsite

Location ______________________________

System Configuration: Inspection Date ______________

☐ Detention ☐ Infiltration ☐ Retention/Harvesting

Inlet or Outlet Blockage or Obstruction **Notes:**

☐ Yes ☐ No

Condition of Internal Components **Notes:**

☐ Good ☐ Damaged ☐ Missing

Sediment Depth Observed **Notes:**

☐ Inches of Sediment: ________

Trash and Debris Accumulation **Notes:**

☐ Significant ☐ Not Significant

Drain Down Observations **Notes:**

☐ Appropriate Time Frame ☐ Inappropriate Time Frame

Maintenance Requirements

☐ **Yes - Schedule Maintenance** ☐ **No - Inspect Again in ______ Months**

Summary of Standard Inspection and Maintenance

The property owner is responsible to ensure inspection, operation and maintenance of permanent BMPs on their property unless responsibility has been formally transferred to an agency, community facilities district, homeowners association, property owners association, or other special district.

Maintenance frequencies listed in this table are average/typical frequencies. Actual maintenance needs are site-specific, and maintenance may be required more frequently. Maintenance must be performed whenever needed, based on maintenance indicators presented in this table. The BMP owner is responsible for conducting regular inspections to see when maintenance is needed based on the maintenance indicators. During the first year of operation of a structural BMP, inspection is recommended at least once prior to August 31 and then monthly from September through May. Inspection during a storm event is also recommended. After the initial period of frequent inspections, the minimum inspection and maintenance frequency can be determined based on the results of the first year inspections.

Threshold/Indicator	Maintenance Action	Inspection and Maintenance Frequency
Tree health	Routine actions as necessary to maintain tree health.	• Inspect monthly. • Maintain when needed.
Dead or diseased tree	Remove dead or diseased tree. Replace per original plans.	• Inspect monthly. • Maintain when needed.
Standing water in tree well for longer than 24 hours following a storm event Surface ponding longer than approximately 24 hours following a storm event may be detrimental to tree health	Loosen or replace soils surrounding the tree to restore drainage.	• Inspect monthly and after every 0.5-inch or larger storm event. If standing water is observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed.
Presence of mosquitos/larvae For images of egg rafts, larva, pupa, and adult mosquitos, see http://www.mosquito.org/biology	Disperse any standing water from the tree well to nearby landscaping. Loosen or replace soils surrounding the tree to restore drainage (and prevent standing water).	• Inspect monthly and after every 0.5-inch or larger storm event. If mosquitos are observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintain when needed

Threshold/Indicator	Maintenance Action	Inspection and Maintenance Frequency
Entrance / opening to the tree well is blocked such that storm water will not drain into the tree well (e.g., a curb inlet opening is blocked by debris or a grate is clogged causing runoff to flow around instead of into the tree well; or a surface depression is filled such that runoff drains away from the tree well)	Make repairs as appropriate to restore drainage into the tree well.	• Inspect monthly. • Maintain when needed.

ATTACHMENT 4
Copy of Plan Sheets Showing Permanent Storm Water BMPs

This is the cover sheet for Attachment 4.

Use this checklist to ensure the required information has been included on the plans:

The plans must identify:

☒ Structural BMP(s) with ID numbers matching Form I-6 Summary of PDP Structural BMPs

☒ The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit

☒ Details and specifications for construction of structural BMP(s)

☒ Signage indicating the location and boundary of structural BMP(s) as required by the [City Engineer]

☒ How to access the structural BMP(s) to inspect and perform maintenance

☒ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)

☒ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable

☒ Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)

☒ Recommended equipment to perform maintenance

☒ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

☒ Include landscaping plan sheets showing vegetation requirements for vegetated structural BMP(s)

☒ All BMPs must be fully dimensioned on the plans

☒ When proprietary BMPs are used, site-specific cross section with outflow, inflow, and model number shall be provided. Photocopies of general brochures are not acceptable.

CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT

TOPOGRAPHIC SOURCE

PARADIGM GEOSPATIAL INC.
16772 W. BERNARDO DR.
SAN DIEGO, CA 92127

TOPOGRAPHIC SOURCE WAS PREPARED THROUGH FIELD SURVEY DATED 9/21/2023

TOPOGRAPHY WAS GATHERED BY AERIAL PHOTOGRAPHY METHODS BY AEROTECH MAPPING INC. ON 9/6/2023

BASIS OF BEARINGS

BEARINGS ARE REFERENCED TO GRID NORTH AS DEFINED BY THE CALIFORNIA SYSTEM 1983, ZONE 6 AND ARE BASED ON THE CALCULATED LINE FROM POINT "2115" TO POINT "2163" OF SAN DIEGO COUNTY RECORD OF SURVEY 11252. SAID BEARING IS N32°00'56"E

BENCHMARK

ELEVATIONS SHOWN HEREON ARE EXPRESSED IN US SURVEY FEET AND BASED ON THE RECORD OF SURVEY NOTED ABOVE WITH VALUES BEING EXPRESSED IN THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 1929) AND DERIVED FROM GPS OBSERVATIONS CONSTRAINED TO CONTROL POINT "2163", HAVING A PUBLISHED ELEVATION OF: 360.18'.

DEMOLITION LEGEND

DESCRIPTION	
PROPERTY LINE	—— – – ——
RIGHT OF WAY	————
LIMIT OF DEMOLITION	—— / / ——
FOUND SURVEY MONUMENT	●
EX. WATER	— WM — WM —
EX. STORM DRAIN	— SD — SD —
EX. SANITARY	— SS — SS —

NOTES

1) ALL EXISTING UTILITIES, SURFACE IMPROVEMENTS, FOOTINGS AND RETAINING WALLS WITHIN PROPERTY LINE SHALL BE DEMOLISHED AND REMOVED UNLESS OTHERWISE NOTED.
2) ALL EXISTING STREET SIGNS AND LIGHTS LOCATED IN THE PUBLIC RIGHT OF WAY SHALL BE PROTECTED IN PLACE DURING CONSTRUCTION OR REPLACED TO THE SATISFACTION OF THE DEVELOPMENT SERVICE DEPARTMENT.
3) CONTRACTOR TO PROPERLY DEMO/DISCONNECT ALL UTILITIES FROM THE BUILDING.
4) DRY UTILITIES SHOWN FOR REFERENCE ONLY, REFER TO DRY UTILITY PLAN.

EXISTING LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF SANTEE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1 OF PARCEL MAP NO. 3197, IN THE CITY OF SANTEE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, FILED IN THE OFFICE OF COUNTY RECORDER OF SAN DIEGO COUNTY, NOVEMBER 7, 1974, AS FILE NO. 74-295673 OF OFFICIAL RECORDS.

FOR CONVEYANCING PURPOSES ONLY: APN 384-120-46-00

DEMOLITION NOTES

- A EXISTING TO BE REMOVED
- B EXISTING SEWER LATERAL TO BE ABANDONED AT PL
- C DRY UTILITY DEMOLITION PER DRY UTILITY PLAN (SHOWN FOR REFERENCE ONLY)
- D EXISTING TO REMAIN
- E EXISTING TO BE REMOVED AND RELOCATED

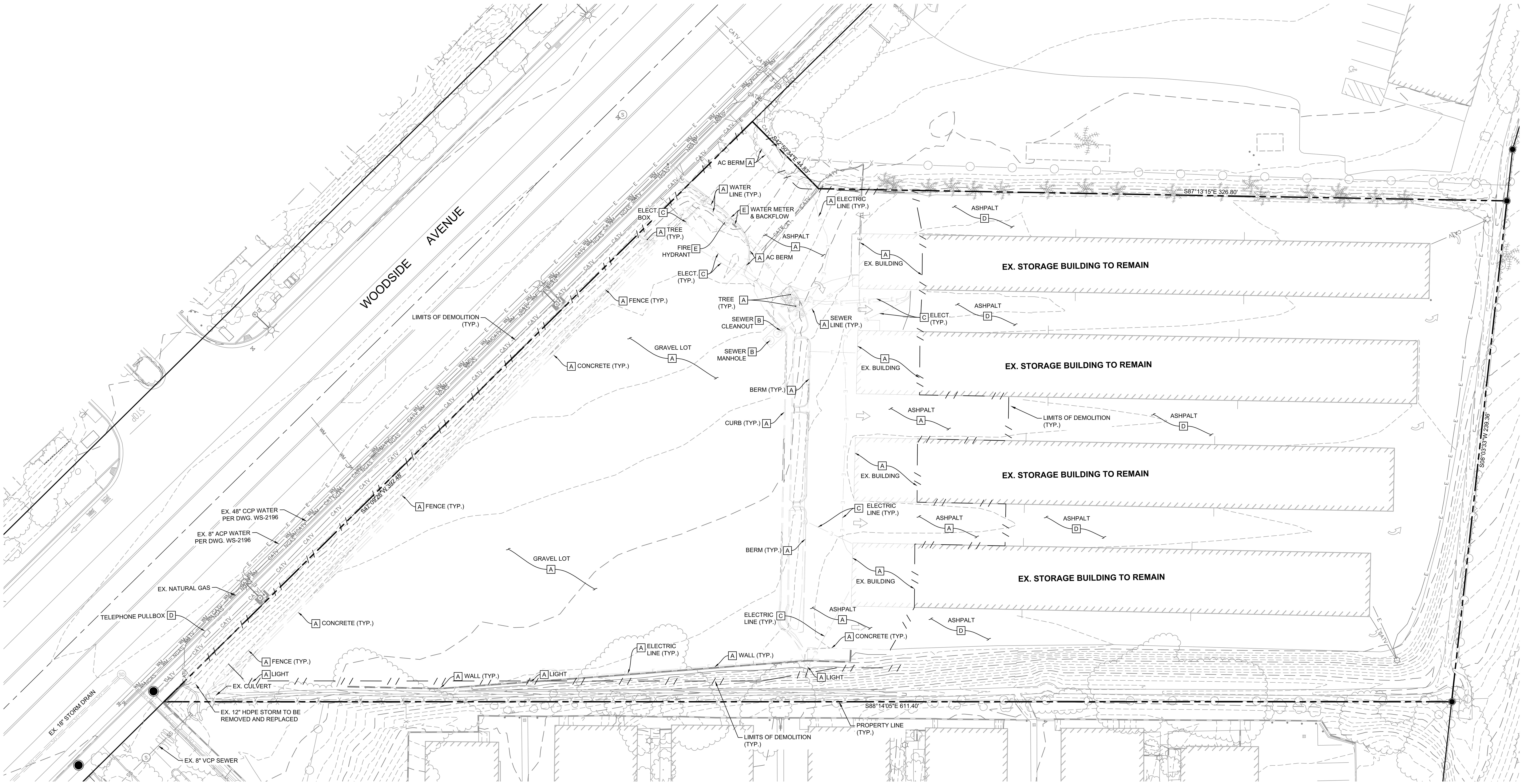
CONSTRUCTION STORM WATER PROTECTION NOTES

1. TOTAL SITE DISTURBANCE AREA (ACRES) 1.283 ACRES
   WATERSHED: LOWER SAN DIEGO RIVER
   HYDRAULIC SUB AREA NAME AND NUMBER:
   LOWER SAN DIEGO RIVER, 907.12
2. THE PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF THE
   WPCP
   THE PROJECT IS SUBJECT TO MUNICIPAL STORM WATER PERMIT NUMBER R9-2013-0001 AND SUBSEQUENT AMENDMENTS..

   X SWPPP
   THE PROJECT IS SUBJECT TO MUNICIPAL STORM WATER PERMIT NUMBER R9-2013-0001 AND CONSTRUCTION GENERAL PERMIT ORDER NUMBER 2009-009-DWQ AS AMENDED BY ORDER 2010-0014 AND 2012-0006-DWQ

   TRADITIONAL: RISK LEVEL X1 ☐2 ☐3
   LUP RISK LEVEL ☐1 ☐2 ☐3

   WDID NO:____________________
3. CONSTRUCTION SITE PRIORITY
   ☐ ASBS ☐ HIGH ☐ MEDIUM X LOW



WM

SCALE: 1" = 20'

WARE MALCOMB
CIVIL ENGINEERING

3911 sorrento valley blvd.
suite 120
san diego, ca 92121
p 858.638.7277
waremalcomb.com

REGISTERED PROFESSIONAL ENGINEER
SAMUEL MICHAEL BELLOMO
No. 90818
CIVIL
STATE OF CALIFORNIA

FOR AND ON BEHALF OF WARE MALCOMB

EXTRA SPACE STORAGE - SANTEE

10835 WOODSIDE AVENUE
SANTEE, CALIFORNIA 92071

DEMOLITION PLAN

NO.	DATE	REMARKS
	2024-03-01	1ST CUP SUBMITTAL
	2024-05-23	2ND CUP SUBMITTAL
	2024-09-11	3RD CUP SUBMITTAL

JOB NO.:	SDG23-4007
PA / PM:	
DESIGNED:	
DATE:	
PLOT DATE:	09/05/24

SHEET
C1.0
Sheet 1 of 6

NOT FOR CONSTRUCTION

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LEGEND

PROPERTY LINE	
RIGHT OF WAY	
PROPOSED EASEMENT	
CENTERLINE	

PROPOSED IMPROVEMENTS

ITEM	STANDARD DWGS.	SYMBOL
SPOT ELEVATION		370.00 FS
CONTOUR LINE		370
6" TYPE 'G' CURB & GUTTER	SDRSD G-02	
GRADE BREAK		GB
LIMITS OF GRADING		
RETAINING WALL	SDRSD C-11A	
STORM DRAIN		SD
CATCH BASIN (SIZE PER PLAN)	SDRSD D-08	
STORM DRAIN CLEANOUT	SDRSD D-09	
MODULAR WETLAND SYSTEM (MWS)		
UNDERGROUND DETENTION		
SEWER LATERAL W/CLEANOUT		SS
6" PVC FIRE SERVICE		FW
WATER SERVICE		DW
TREES		

EXISTING IMPROVEMENTS

ITEM	SYMBOL
CONTOUR LINE	(370)
STORM DRAIN	SD
WATER LINE	WM
SEWER LINE	SS
ELECTRICAL LINE	E
CATV	CATV
GAS MAIN	NGAS
SEWER MANHOLE	S
FIRE HYDRANT	
ELECTRICAL VAULT	E
LIGHT POLE	
EXISTING SURVEY MONUMENT	

PAVING LEGEND

PAVEMENT TYPE	USE	TRAFFIC INDEX	PAVEMENT THICKNESS	BASE MATERIAL	SYMBOL
AC LIGHT DUTY	PARKING STALLS	5.0	3.0 IN.	5.5 IN. CLASS 2 BASE	
AC HEAVY DUTY	DRIVE AISLE	7.0	4.0 IN.	9.5 IN. CLASS 2 BASE	
HEAVY DUTY PCC	TRASH ENCLOSURE	-	6.5 IN.	-	

NOTE: CONTRACTOR TO REFER TO THE GEOTECHNICAL REPORT FOR PAVEMENT DESIGN AND SUBGRADE REQUIREMENTS.

BASIS OF COORDINATES

COORDINATES ARE REFERENCED TO THE CALIFORNIA COORDINATE SYSTEM, ZONE 6, NORTH AMERICAN DATUM 1983 PROJECTED TO GROUND COORDINATES, CONSTRAINED TO "RECORD OF SURVEY 11252" AS RECORDED WITH THE COUNTY OF SAN DIEGO. REFERENCE STATION(S). THE PUBLISHED COORDINATE VALUES FOR THOSE STATIONS ARE BELOW:

"2115" - NORTHING: 1885034.355
EASTING: 6341615.789

"2163" - NORTHING: 1887622.938
EASTING: 6343234.293

BASIS OF BEARINGS

BEARINGS ARE REFERENCED TO GRID NORTH AS DEFINED BY THE CALIFORNIA COORDINATE SYSTEM 1983, ZONE 6 AND ARE BASED ON THE CALCULATED LINE FROM POINT “2115” TO POINT “2163” OF SAN DIEGO COUNTY RECORD OF SURVEY 11252. SAID BEARING IS N32°00'56”E.

BENCHMARK

ELEVATIONS SHOWN HEREON ARE EXPRESSED IN US SURVEY FEET AND BASED ON THE RECORD OF SURVEY NOTED ABOVE. WITH VALES BEING EXPRESSED IN THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29) AND DERIVED FROM GPS OBSERVATIONS CONSTRAINED TO CONTROL POINT "2163", HAVING A PUBLISHED ELEVATION OF: 360.18'.

EARTHWORK QUANTITIES

TOTAL SITE AREA:	2.81 [ACRES]
GRADED AREA:	1.28 [ACRES]
CUT QUANTITIES:	8,100 [CYDS]
FILL QUANTITIES	200 [CYD]
IMPORT/EXPORT	7,900 [CYD (CUT)]

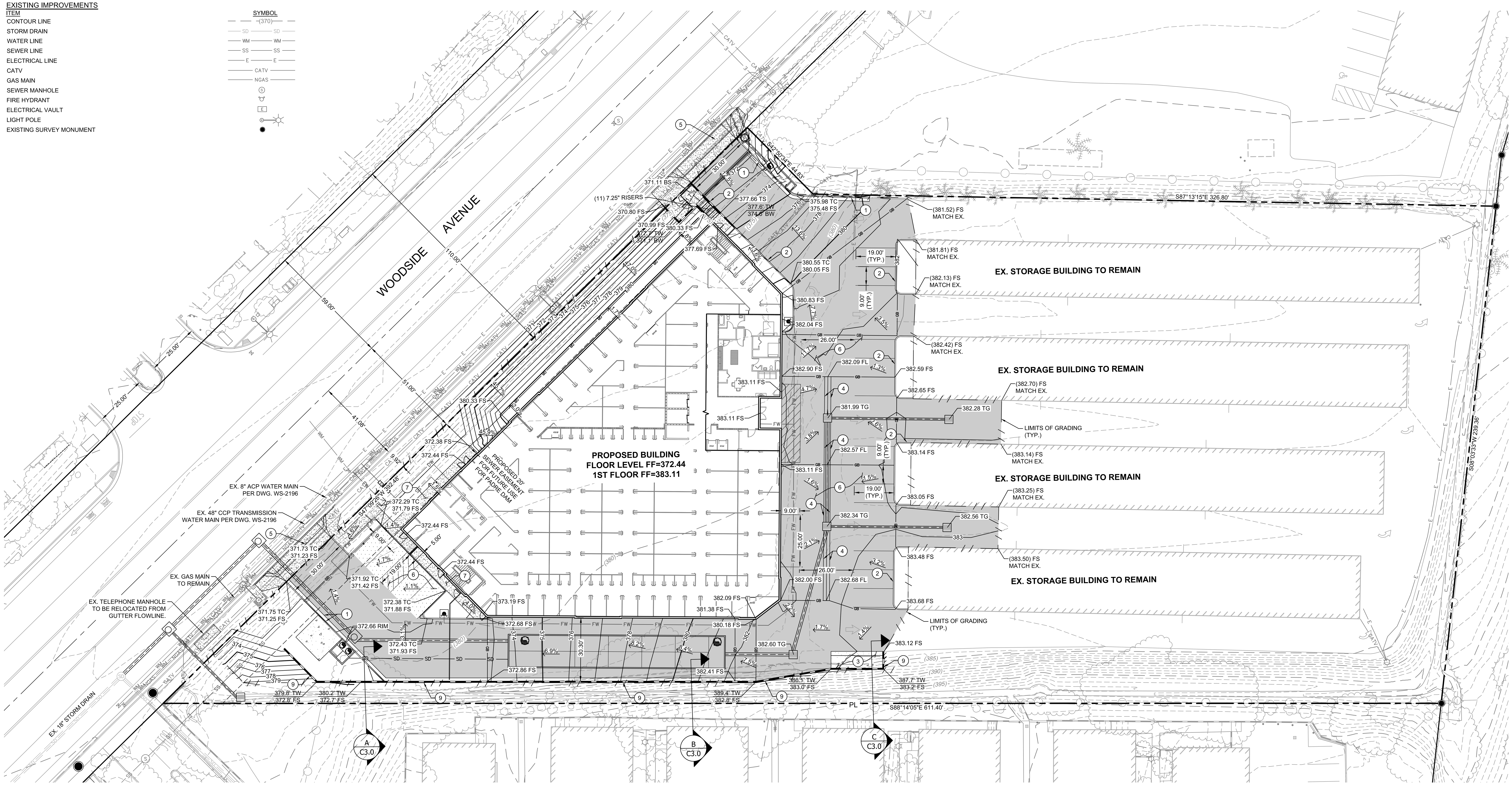
MAX. CUT DEPTH ______ [FT]
MAX CUT SLOPE RATIO (2:1 MAX) _____
MAX. FILL DEPTH ______ [FT]
MAX FILL SLOPE RATIO (2:1MAX) _____

CONSTRUCTION NOTES

1. 6" CURB AND GUTTER PER SDRSD G-02
2. 6" CURB PER SDRSD G-01
3. TRASH ENCLOSURE (6'X24.67') SEE PAVEMENT LEGEND FOR PAVEMENT RECOMMENDATIONS
4. 3' WIDE VALLEY GUTTER PER DETAIL "D" ON SHEET C3.0
5. COMMERCIAL CONCRETE DRIVEWAY PER CITY OF SANTEE DWG. NO. PW-38
6. SEE PAVEMENT LEGEND ON THIS SHEET FOR PAVEMENT RECOMMENDATIONS
7. PEDESTRIAN CONCRETE HARDSCAPE
8. STAIRS WITH HANDRAILS PER LANDSCAPE ARCHITECT
9. RETAINING WALL TYPE "1" PER SDRSD C-01

NOTE:

REFER TO SHEET 4 FOR UTILITY INFORMATION



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REGISTERED PROFESSIONAL ENGINEER
SAMUEL MICHAEL BELLOMO
No. 90818
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STATE OF CALIFORNIA
FOR AND ON BEHALF OF WARE MALCOMB

EXTRA SPACE STORAGE - SANTEE

10835 WOODSIDE AVENUE
SANTEE, CALIFORNIA 92071

CONCEPTUAL GRADING PLAN

NO.	DATE	REMARKS
	2024-03-01	1ST CUP SUBMITTAL
	2024-05-23	2ND CUP SUBMITTAL
	2024-09-11	3RD CUP SUBMITTAL

JOB NO.:	SDG23-4007
PA / PM:	
DESIGNED:	
DATE:	
PLOT DATE:	09/05/24

SHEET
C2.0
Sheet 2 of 6

NOT FOR CONSTRUCTION

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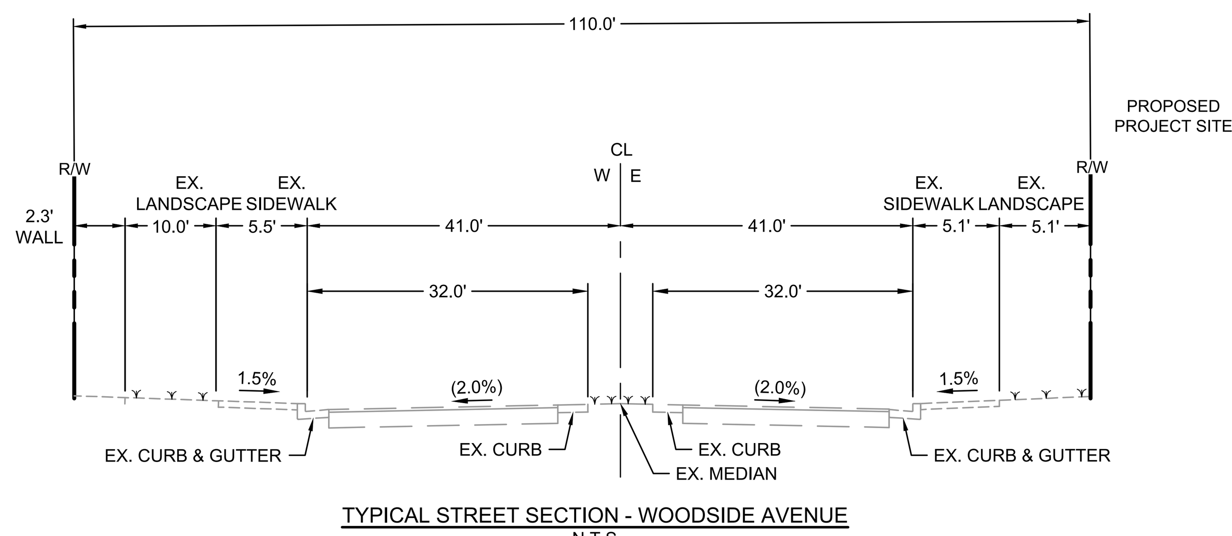
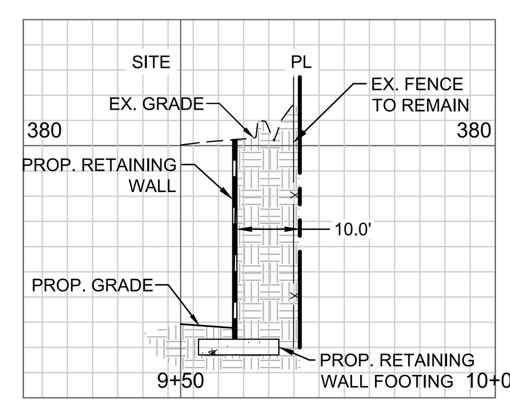
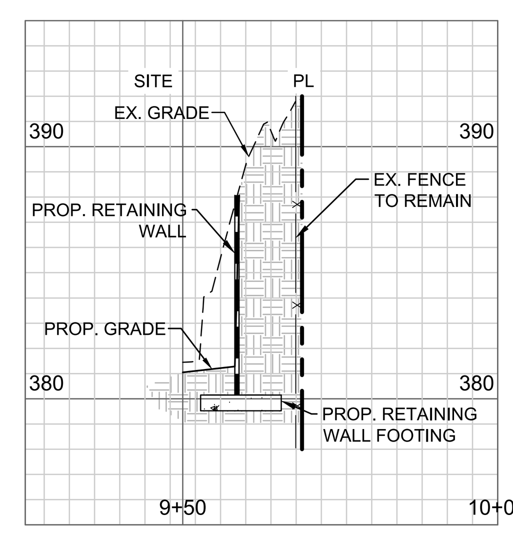


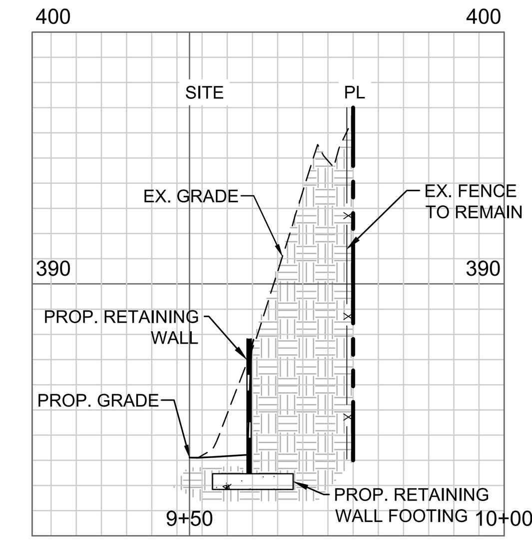
TYPICAL STREET SECTION - WOODSIDE AVENUE
N.T.S



SECTION A
SCALE: Hor: 1" = 20'
SCALE: Vert: 1" = 5'

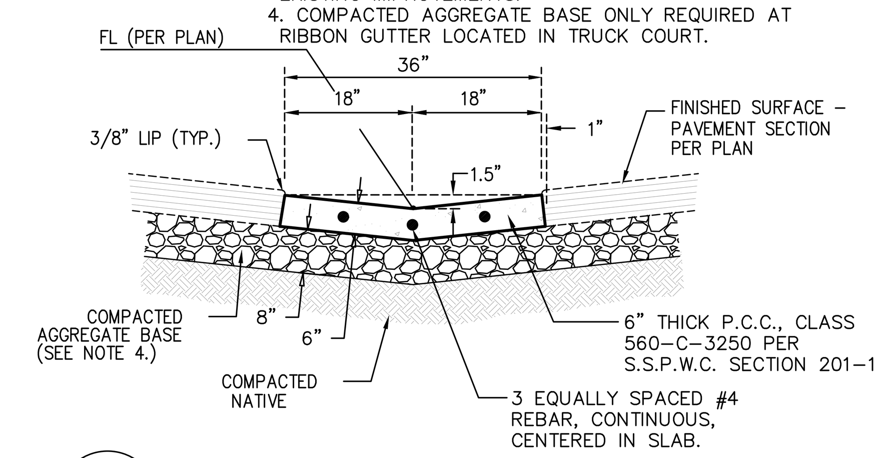


SECTION B
SCALE: Hor: 1" = 20'
SCALE: Vert: 1" = 5'



SECTION C
SCALE: Hor: 1" = 20'
SCALE: Vert: 1" = 5'

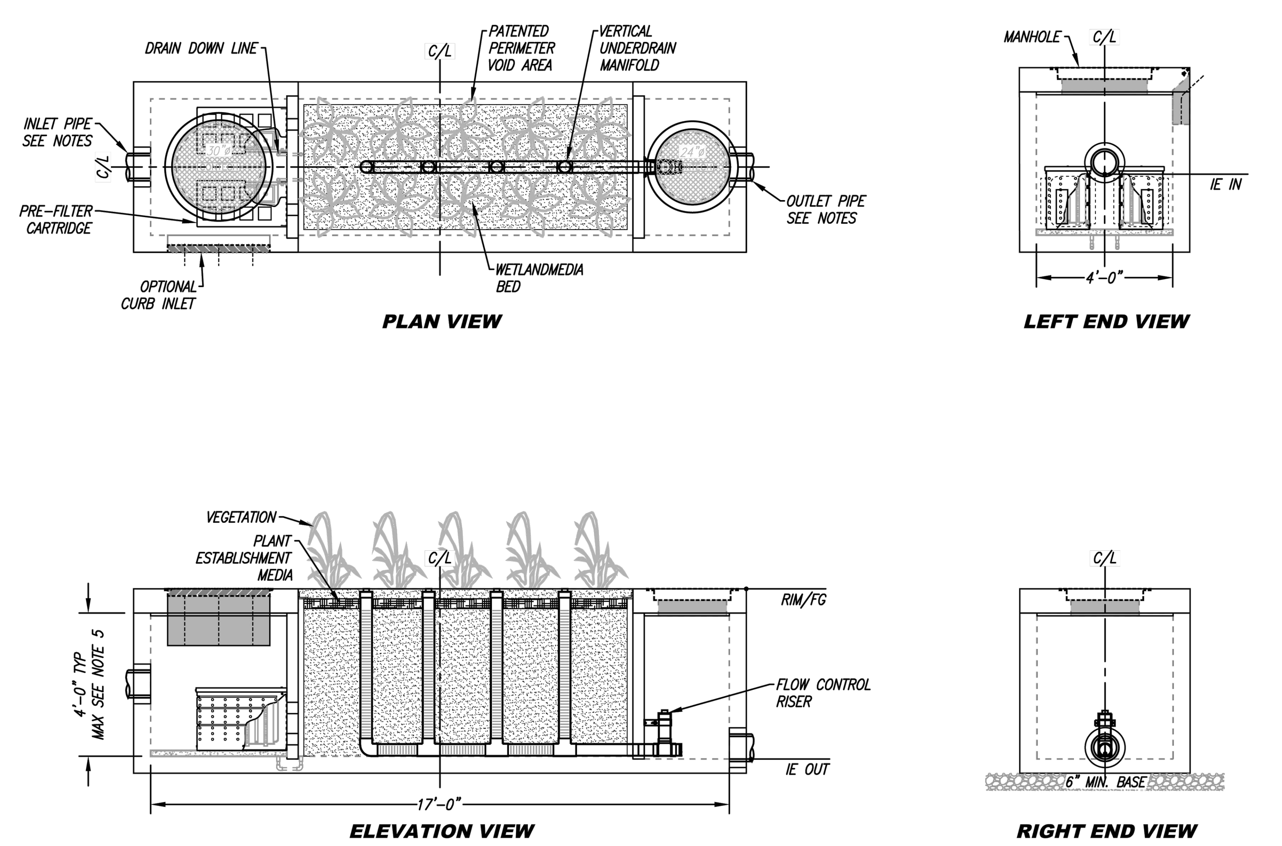
NOTES:
1. CONSTRUCTION SHALL BE PORTLAND CEMENT CONCRETE
2. CONSTRUCTION JOINTS AT 10 FOOT INTERVALS.
3. SEE DETAIL 10A, BELOW FOR CONNECTIONS TO EXISTING IMPROVEMENTS.
4. COMPACTED AGGREGATE BASE ONLY REQUIRED AT RIBBON GUTTER LOCATED IN TRUCK COURT.



1 PVT. 3' WIDE PCC RIBBON GUTTER
NOT TO SCALE

SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
TREATMENT FLOW (CFS)			
PRETREATMENT LOADING RATE (GPM/SF)			2.1 GPM/SF
WETLAND MEDIA LOADING RATE (GPM/SF)			1.0
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			_____ (CFS)
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
NOTES:			

* PRELIMINARY ONLY - NOT FOR CONSTRUCTION



INSTALLATION NOTES
1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
3. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
4. CONTRACTOR RESPONSIBLE FOR CONTACTING CONTECH FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.
5. VERTICAL HEIGHT VARIES BASED ON SITE SPECIFIC REQUIREMENTS.

1/12/24TIM.GIRARD

CONTECH ENGINEERED SOLUTIONS LLC www.ContechES.com

MWS-L-4-17-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

2 BMP1 - CONTECH MODULAR WETLAND SYSTEM (PVT.)
NOT TO SCALE

SITE SPECIFIC DATA			
PROJECT NUMBER	SDG23-4007		
PROJECT NAME	Extra Space Storage		
PROJECT LOCATION	Santee, CA		
STRUCTURE ID	BMP2		
TREATMENT REQUIRED			
TREATMENT FLOW (CFS)			0.220
PRETREATMENT LOADING RATE (GPM/SF)			3.0 GPM/SF
WETLAND MEDIA LOADING RATE (GPM/SF)			1.0
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			_____ (CFS)
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
NOTES:			

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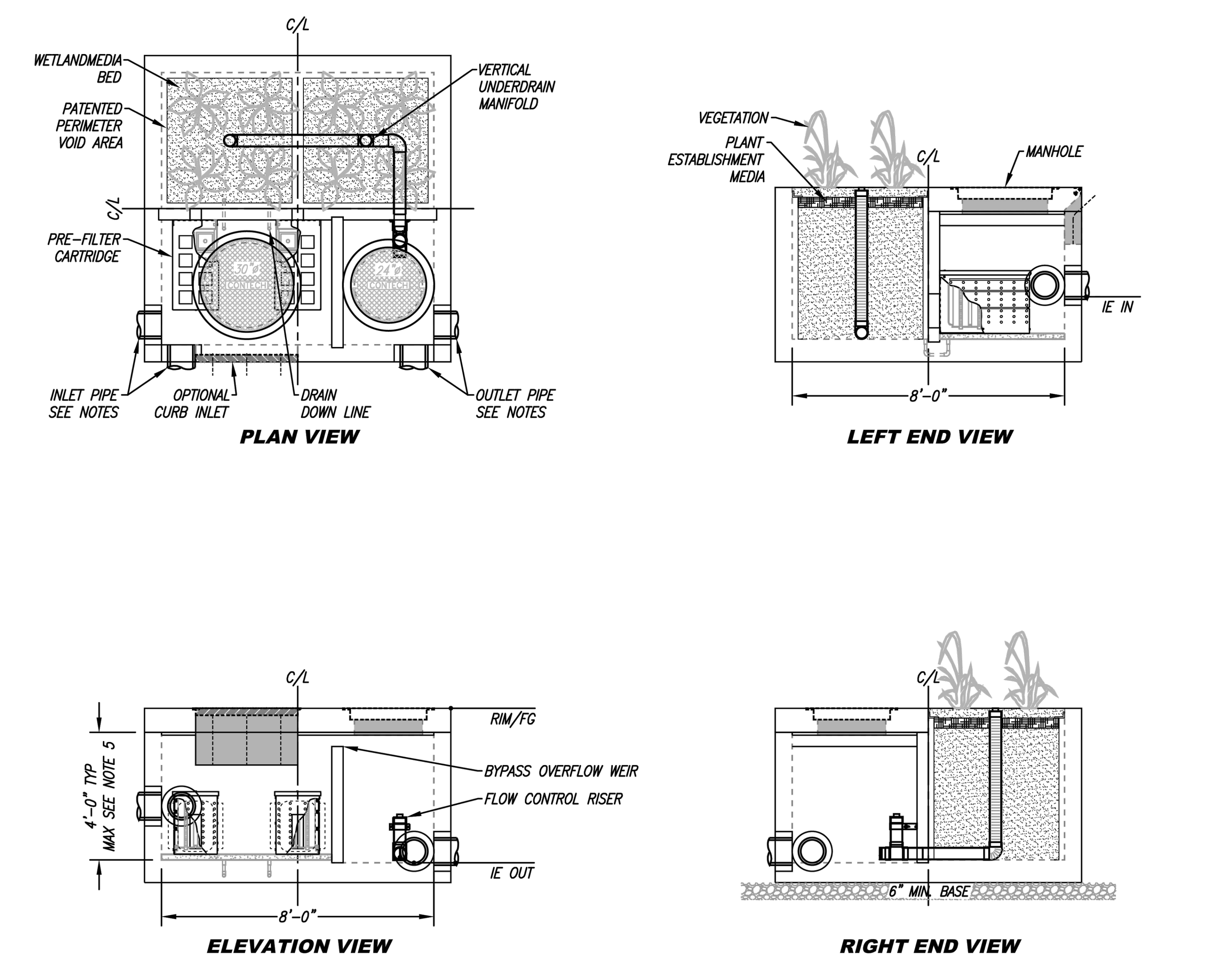

INSTALLATION NOTES
1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
3. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
4. CONTRACTOR RESPONSIBLE FOR CONTACTING CONTECH FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.
5. VERTICAL HEIGHT VARIES BASED ON SITE SPECIFIC REQUIREMENTS.

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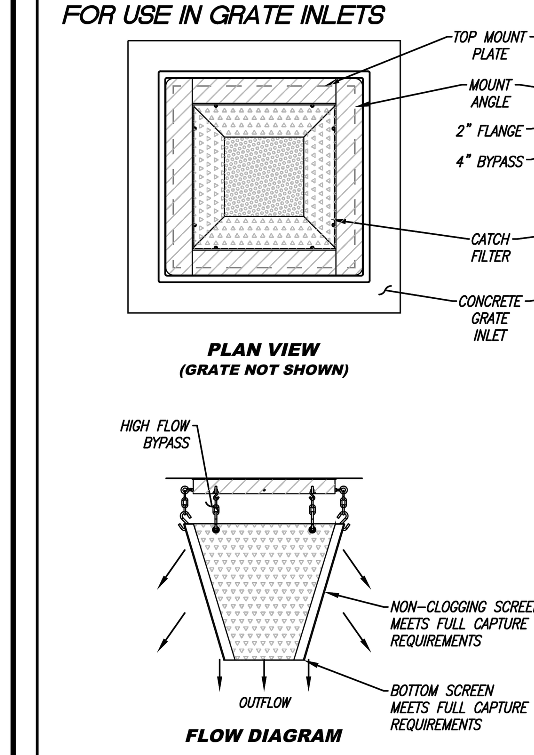
MWS-L-8-8-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

3 BMP2 - CONTECH MODULAR WETLAND SYSTEM (PVT.)
NOT TO SCALE

BIO CLEAN FULL CAPTURE FILTER
FOR USE IN GRATE INLETS



INSTALLATION NOTES:
1. ALL HARDWARE, FLANGE, FRAME, SCREENS SHALL BE STAINLESS STEEL.
2. OPTIONAL HYDROCARBON BOOM SHALL BE 2" DIAMETER.
3. SEE PERFORMANCE REPORTS IN MANUFACTURES SPECIFICATIONS.
4. OTHER STANDARD AND CUSTOM MODEL SIZES AVAILABLE – CONTACT BIO CLEAN FOR MORE INFORMATION.
5. BASED ON 37% OPEN AREA.
6. CONSIDERS A SAFETY FACTOR OF 2.0.
7. CONSIDERS A LOCAL DEPRESSION PONDING DEPTH OF 6 INCHES.
8. STORAGE CAPACITY BASED ON THE BASKET HALF FULL.
9. CONCRETE STRUCTURES SOLD SEPARATELY.

MODEL #	TREATMENT FLOW RATE (CFS)	BYPASS FLOW (CFS)	SOLIDS STORAGE CAPACITY (CF)
BIO-GRATE-FULL 12-12-12	1.04	1.24	0.15
BIO-GRATE-FULL 18-18-12	1.78	2.79	0.33
BIO-GRATE-FULL 24-24-12	2.70	4.96	0.59
BIO-GRATE-FULL 24-40-12	3.70	6.35	0.88
BIO-GRATE-FULL 24-24-24	7.31	4.96	1.22
BIO-GRATE-FULL 24-40-24	9.53	6.35	1.82
BIO-GRATE-FULL 36-36-24	11.93	7.74	2.73

NOT TO SCALE

9/23/22GSCHIPPER

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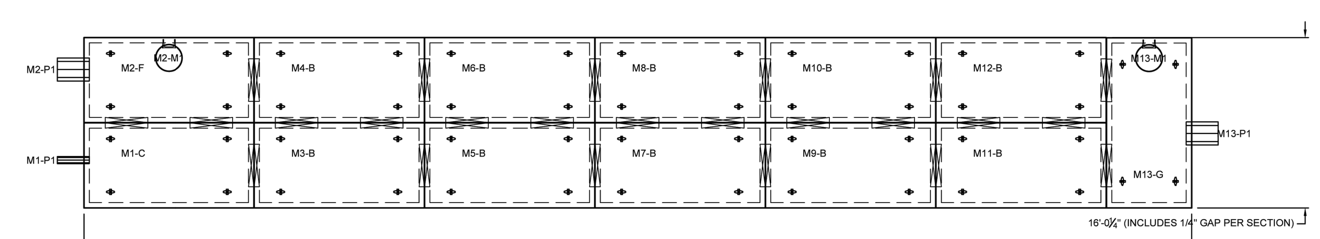
GRATE INLET FILTER
FULL CAPTURE
STANDARD DETAIL

4 FULL TRASH CAPTURE CATCH BASIN INSERT
NOT TO SCALE

MODULE NOTES		
TYPE	QUANTITY	HEIGHT
B	10	3.00'
C	1	3.00'
F	1	3.00'
G	1	3.00'
TOTAL	13	
VOLUME	4,187	CUBIC FEET

PIPE SCHEDULE		
PIPE	SIZE	INVERT
M1-P1	6" HDPE	369.60'
M13-P1	18" HDPE	371.10'
M2-P1	18" HDPE	371.10'

MANHOLE SCHEDULE		
MANHOLE	TYPE	RIM
M13-M1	30" DIA. F&C Steps	374.00'
M2-M1	30" DIA. F&C Steps	374.00'

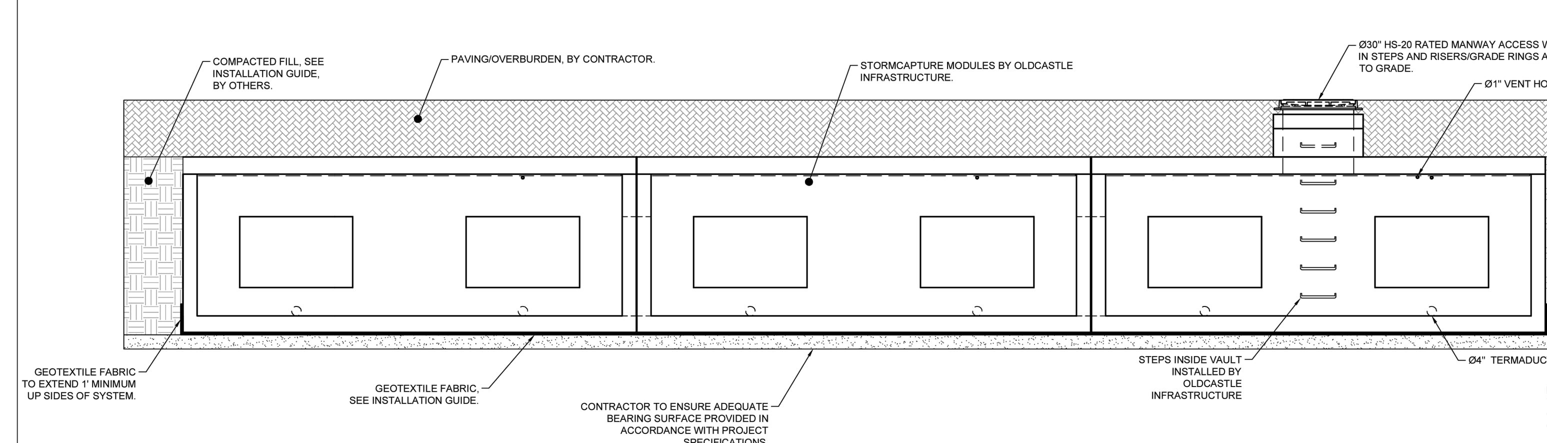


PLAN VIEW
SCALE: 3/32" = 1'-0"

DESIGN NOTES
1. LIVE LOADING CRITERIA:
   A. AASHTO HS-20-44 DESIGN TRUCK (WITH IMPACT AT 0.50FT MINIMUM COVER)
   B. LATERAL LIVE LOAD SURCHARGE: 80 PSF (TO 8.00FT DEPTH)
   C. NO LATERAL SURCHARGE(S) FROM ANY ADJACENT BUILDINGS, WALLS, FOUNDATIONS, OR ANY ADDITIONAL SITE ELEMENTS.
2. SOIL LOADING CRITERIA:
   A. SOIL COVER DEPTH: 0.50FT (MIN.) - 5.00FT (MAX.)
   B. SOIL UNIT WEIGHT: 120 PCF
   C. ASSUMED WATER TABLE ELEVATION: BELOW BOTTOM OF PRECAST
   D. REQUIRED ALLOWABLE BEARING PRESSURE: 2,500 PSF
   E. EQUIVALENT LATERAL FLUID PRESSURE, ACTIVE: 45 PCF (DRAINED)
   F. EQUIVALENT LATERAL FLUID PRESSURE, AT-REST: 60 PCF (DRAINED)
   G. EQUIVALENT LATERAL FLUID PRESSURE, PASSIVE: 150 PCF (DRAINED)
   H. ASSUMED COEFFICIENT OF FRICTION: 0.40
   I. SEISMIC LATERAL EARTH PRESSURES: NOT APPLICABLE
3. STORMCAPTURE MODULE TYPE: DETENTION (SOILTIGHT).
4. CONCRETE (NORMALWEIGHT):
   A. MIN. 28-DAY COMPRESSIVE STRENGTH: 6,000 PSI
   B. CEMENT: ASTM C150
5. STEEL REINFORCEMENT: ASTM A615 / A706 (GRADE 60), ASTM A1064 (GRADE 80)
6. REFERENCE STANDARDS: ASTM C913 & C890, ACI 318-14

Oldcastle Infrastructure
STORMCAPTURE ® DETENTION SYSTEM
Ware Malcomb
Extra Space Storage - Santee - BMP 3
5/22/2024
SC1 3-0
1 OF 3

REVIEWING NOTES
1. THIS SYSTEM HAS BEEN DESIGNED PER THE DESIGN PARAMETERS SPECIFIED IN THE DESIGN NOTES. REVIEWING ENGINEER SHALL VERIFY THAT THESE PARAMETERS MEET OR EXCEED PROJECT SPECIFIC REQUIREMENTS. IF SITE CONDITIONS DIFFER FROM NOTED DESIGN PARAMETERS, REVIEWING ENGINEER SHALL NOTIFY OLDCASTLE FOR POTENTIAL REDESIGN AND/OR PRICING ADJUSTMENTS.
2. REVIEWING ENGINEER SHALL VERIFY ALL PIPE PENETRATION LOCATIONS, SIZES, AND INVERTS.
3. REVIEWING ENGINEER SHALL VERIFY ALL MANWAY ACCESS LOCATIONS AND RIM ELEVATIONS.
4. THIS SYSTEM IS DESIGNED FOR A GROUNDWATER TABLE ELEVATION PER DESIGN NOTE 2C, SHEET 1. REVIEWING ENGINEER SHALL VERIFY THAT THE DESIGN GROUNDWATER ELEVATION MEETS OR EXCEEDS SITE CONDITION REQUIREMENTS. NOTIFY OLDCASTLE IF SITE CONDITIONS VARY FROM WHAT HAS BEEN SPECIFIED FOR POTENTIAL SYSTEM DESIGN CHANGES AND/OR PRICING ADJUSTMENTS.
5. STORMCAPTURE MODULES ARE NOT WATERTIGHT. IF A WATERTIGHT SOLUTION IS REQUIRED, CONTACT OLDCASTLE FOR RECOMMENDATIONS. THE WATERTIGHT APPLICATION TO BE PROVIDED AND IMPLEMENTED BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE SELECTED WATERTIGHT SOLUTION PERFORMS AS SPECIFIED BY THE MANUFACTURER.
6. DESIGN OF THE STORMCAPTURE PRECAST MODULE SYSTEM ASSUMES NO ADJACENT BUILDING(S), WALL(S), OR STRUCTURAL FOUNDATION(S) WITHIN A 1:1 INFLUENCE LINE FROM THE BOTTOM EDGE OF ANY SYSTEM MODULE. ANY SITE ELEMENTS BEYOND THIS ZONE OF INFLUENCE ARE ASSUMED TO HAVE NO IMPACT ON THE SYSTEM AND EXERT ZERO LATERAL SURCHARGE ONTO THE MODULES. THE CONTRACTOR SHALL VERIFY THAT ANY ADJACENT BUILDING(S), WALL(S), OR STRUCTURAL FOUNDATION(S) DO NOT LIE WITHIN THIS INFLUENCE ZONE OR DO NOT SURCHARGE THE PRECAST MODULES.
7. WRITTEN APPROVAL OF SUBMITTAL DRAWINGS ALONG WITH SIGNED PURCHASE ORDER REQUIRED FOR BEGINNING OF PRODUCT FABRICATION. ANY SYSTEM MODIFICATION POST-APPROVAL MAY RESULT IN CHANGE ORDER(S) AND/OR POTENTIAL DELIVERY DELAYS.
8. ALL SAND FILTER MEDIA, DRAIN ROCK AGGREGATE, PIPE, AND FITTINGS PROVIDED BY CONTRACTOR.



TYPICAL ELEVATION
NTS

Oldcastle Infrastructure
STORMCAPTURE ® DETENTION SYSTEM
Ware Malcomb
Extra Space Storage - Santee - BMP 3
5/22/2024
SC1 3-0
2 OF 3

5 OLDCASTLE STORMCAPTURE - UNDERGROUND DETENTION
NOT TO SCALE

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DETAILS

NO.	DATE	REMARKS
	2024-03-01	1ST CUP SUBMITTAL
	2024-05-23	2ND CUP SUBMITTAL
	2024-09-11	3RD CUP SUBMITTAL

JOB NO.:	SDG23-4007
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SHEET
C3.0
Sheet 3 of 6

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PROPOSED IMPROVEMENTS

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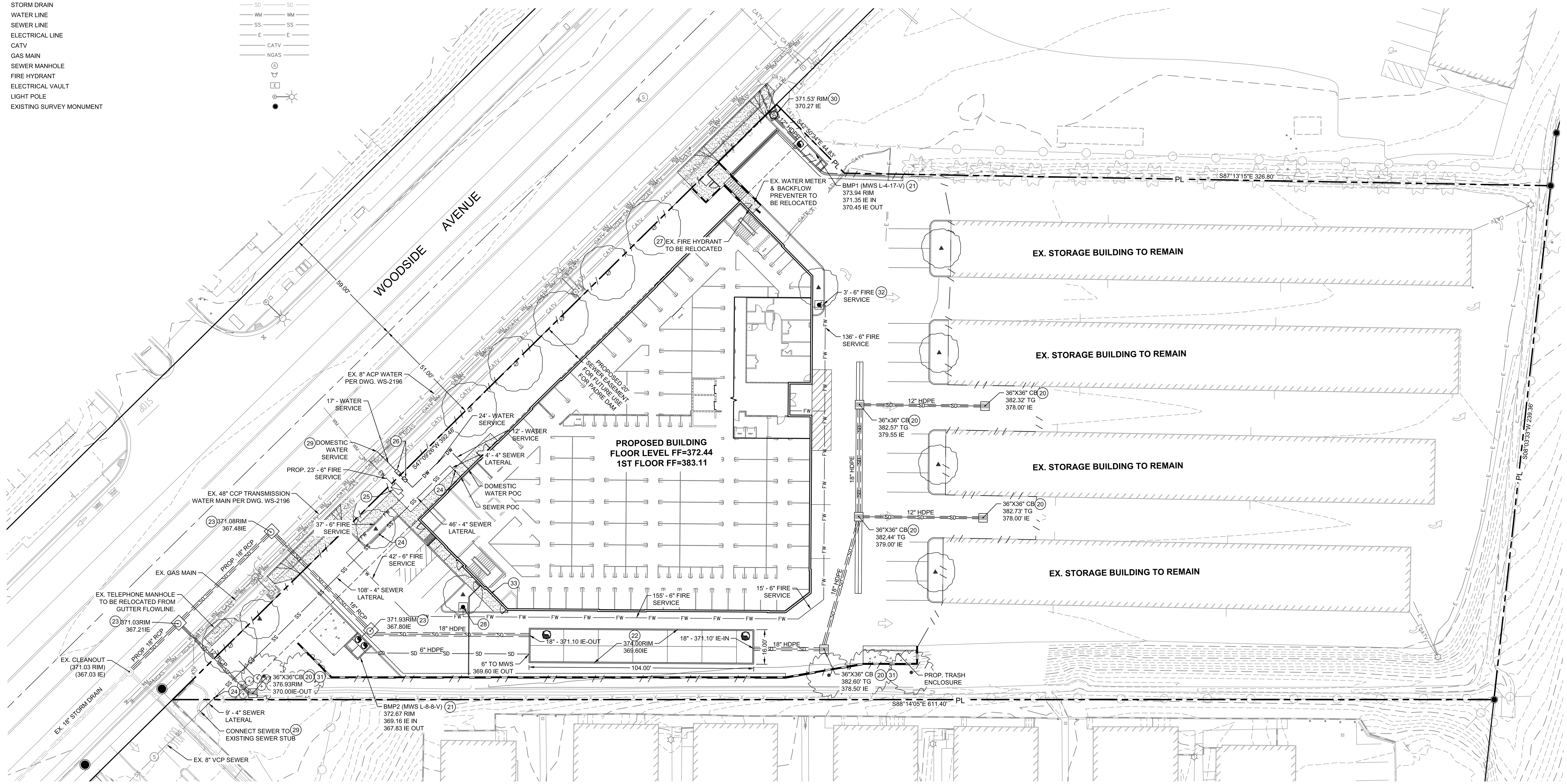
STORM DRAIN		SD
CATCH BASIN (SIZE PER PLAN)	SDRSD D-08	
STORM DRAIN CLEANOUT	SDRSD D-09	
MODULAR WETLAND SYSTEM (MWS)		
UNDERGROUND DETENTION		
SEWER LATERAL W/CLEANOUT		SS
6" PVC FIRE SERVICE		FW
WATER SERVICE		DW
TREES		

EXISTING IMPROVEMENTS

ITEM	SYMBOL
CONTOUR LINE	(370)
STORM DRAIN	SD
WATER LINE	WM
SEWER LINE	SS
ELECTRICAL LINE	E
CATV	CATV
GAS MAIN	NGAS
SEWER MANHOLE	
FIRE HYDRANT	
ELECTRICAL VAULT	
LIGHT POLE	
EXISTING SURVEY MONUMENT	

UTILITY CONSTRUCTION NOTES

20. CATCH BASIN 'TYPE G' PER SDRSD D-08
21. CONTECH MODULAR WETLAND (MWS), SIZE PER PLAN, SEE DETAIL 2 & 3 ON SHEET C3.0 SEE BMP PLAN SHEET C5.0 FOR ADDITIONAL INFORMATION
22. OLDCASTLE STORMCAPTURE, SIZE PER PLAN. SEE DETAIL 5 ON SHEET C3.0
23. STORM DRAIN CLEANOUT 'TYPE A' PER SDRSD D-09
24. SEWER CLEANOUT PER SC-01
25. 6" FIRE BACKFLOW PER SDRSD WF-02. PRIVATE BACKFLOW PREVENTER ZUR/WILKINS MODEL NO. 475 OR APPROVED EQUAL
26. RELOCATED EXISTING DOMESTIC WATER METER AND BACKFLOW
27. REMOVE AND RELOCATE EXISTING FIRE HYDRANT
28. 6" FIRE HYDRANT PER SDRSD WF-01 & WF-04
29. CONNECT TO EXISTING. CONTRACTOR TO POTHOLE AND FIELD VERIFY LOCATION, DEPTH AND SIZE PRIOR TO COMMENCING CONSTRUCTION.
30. CURB OUTLET 'TYPE A' PER SDRSD D-25A
31. CONTECT GRATE INLET FILTER FULL CAPTURE, SEE DETAIL 4 ON SHEET C3.0
32. RELOCATED FIRE HYDRANT
33. PROPOSED FDC LOCATION. REFER TO ARCHITECT PLAN SET



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CONCEPTUAL UTILITY PLAN

NO.	DATE	REMARKS
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	2024-05-23	2ND CUP SUBMITTAL
	2024-09-11	3RD CUP SUBMITTAL

JOB NO.:	SDG23-4007
PA / PM:	
DESIGNED:	
DATE:	
PLOT DATE:	09/05/24

SHEET
C4.0
Sheet 4 of 6

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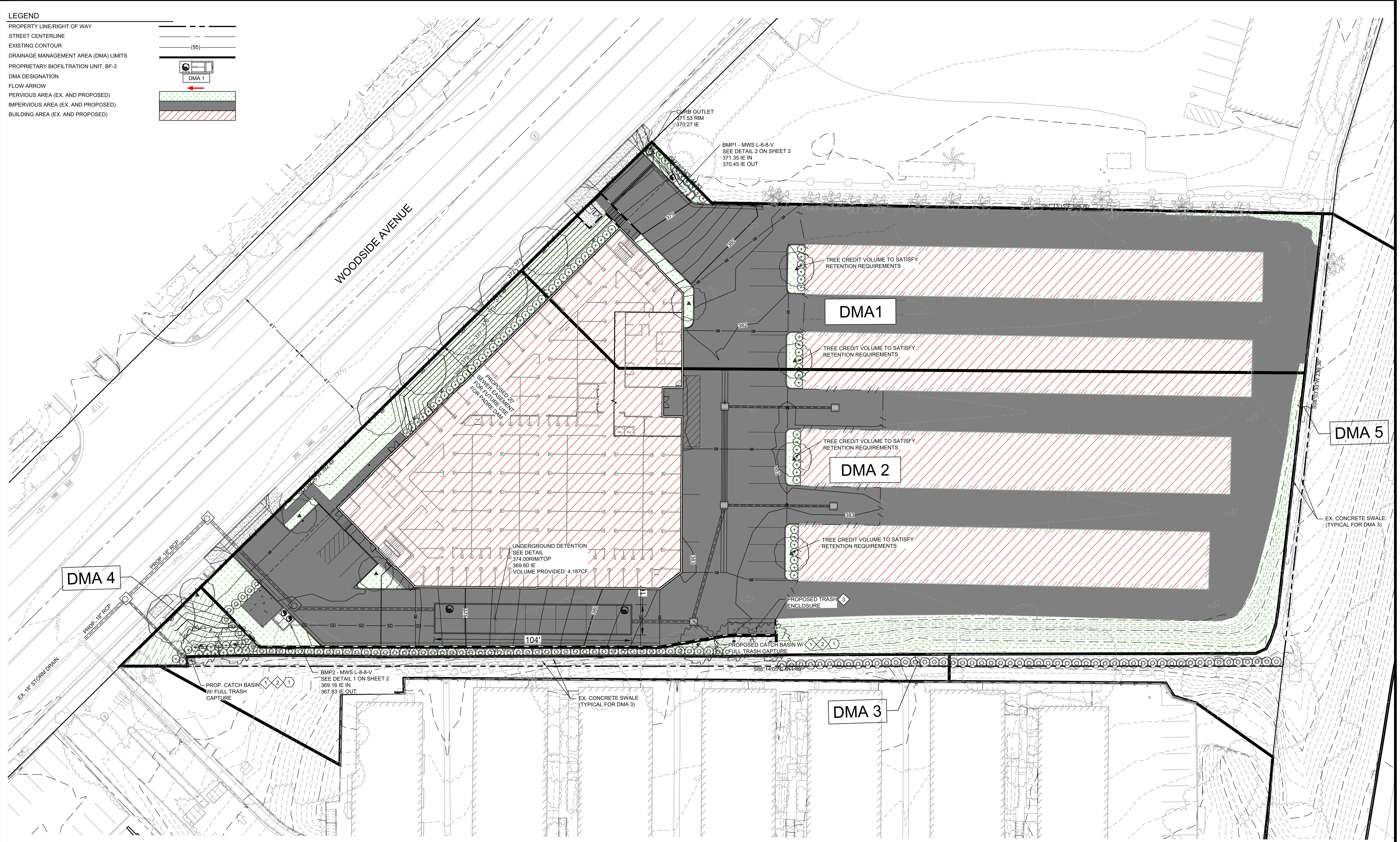

PROJECT SITE INFO

UNDERLYING HYDROLOGIC SOIL GROUP: C
APPROXIMATE DEPTH TO GROUNDWATER: 20 FT±
EXISTING NATURAL HYDROLOGIC FEATURES (WATERCOURSES, SEEPS, SPRINGS, WETLANDS): NONE
CRITICAL COARSE SEDIMENT YIELD AREAS TO BE PROTECTED: NONE

TOTAL DISTURBED AREA 56,222 SF

EXISTING IMPERVIOUS AREA: 18,423 SF
EXISTING SEMI-PERVIOUS AREA: 30,720 SF
EXISTING PERVIOUS AREA: 7,079 SF

PROPOSED IMPERVIOUS AREA: 47,878 SF
PROPOSED PERVIOUS AREA: 8,344 SF

PERMANENT STORMWATER BMP NOTES:

PROPRIETARY BMP (BF-3, PROPRIETARY BIOFILTRATION)

POLLUTANT CONTROL ONLY

RESPONSIBLE PARTY:

EXTRA SPACE STORAGE, OWNER OF THE PROPERTY, IS RESPONSIBLE FOR THE MAINTENANCE OF THE MWS UNITS, UNDERGROUND DETENTION SYSTEM, EXISTING CONCRETE SWALES, PROPOSED TREES TO MEET VOLUME RETENTION REQUIREMENTS, AND FULL TRASH CAPTURE DEVICES

NOTE:

EXISTING STORM DRAIN INLETS COSID 2241 & 2340 ON WOODSIDE AVENUE TO BE EQUIPPED WITH FULL TRASH CAPTURE DEVICE AS PART OF THE PROJECT'S CONDITIONS OF APPROVAL

SITE DESIGN BMPS

1 MINIMIZE IMPERVIOUS AREA
2 RUNOFF COLLECTION
3 LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES

SOURCE CONTROL BMPS

1 SC-1 PREVENTION OF ILLICIT DISCHARGE INTO THE MS4
2 SC-2 STORM DRAIN STENCILING OR SIGNAGE
3 SC-5 PROTECT TRASH STORAGE AREAS FROM RAINFALL, RUN-ON, RUNOFF AND WIND DISPERSAL

DMA SUMMARY TABLE

DMA SUMMARY TABLE

DMA ID	SOIL TYPE	AREA (AC)	AREA (SF)	IMPERVIOUS AREA (SF)	PERVIOUS AREA (SF)	IMPERVIOUS %	IMPERVIOUS RUNOFF FACTOR	PERVIOUS RUNOFF FACTOR	C-VALUE	TREATMENT FLOWRATE REQUIRED (CFS)	TREATMENT FLOWRATE PROVIDED (CFS)	TREATMENT VOLUME REQUIRED (FT3)	TREATMENT VOLUME PROVIDED (FT3)	TREATMENT PROVIDED
1	C	0.80	34,906	32,602	2,304	93%	0.90	0.10	0.85	0.204		-	-	BMP1 (PROPRIETARY BMP)
2	C	1.83	79,701	68,795	10,906	86%	0.90	0.10	0.79	-	-	2,447	2,447	BMP2 (PROPRIETARY BMP)
3	C	0.11	4,636	-	-	-	-	-	-	-	-	-	-	EX. RUN ON (BYPASSES TREATMENT
4	C	0.07	3,001	0	3,001	0%	0.90	0.10	0.10	-	-	-	-	SELF MITIGATING AREA

WM

SCALE: 1" = 20'

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REGISTERED PROFESSIONAL ENGINEER
SAMUEL MICHAEL BELLOMO
No. 90818
CIVIL
STATE OF CALIFORNIA

FOR AND ON BEHALF OF WARE MALCOMB

EXTRA SPACE STORAGE - SANTEE

10835 WOODSIDE AVENUE
SANTEE, CALIFORNIA 92071

BMP PLAN

NO.	DATE	REMARKS
1	2024-03-01	1ST CUP SUBMITTAL
2	2024-05-23	2ND CUP SUBMITTAL
3	2024-09-11	3RD CUP SUBMITTAL

JOB NO.:	SDG23-4007
PA / PM:	
DESIGNED:	
DATE:	
PLOT DATE:	09/05/24

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STORMWATER NOTES

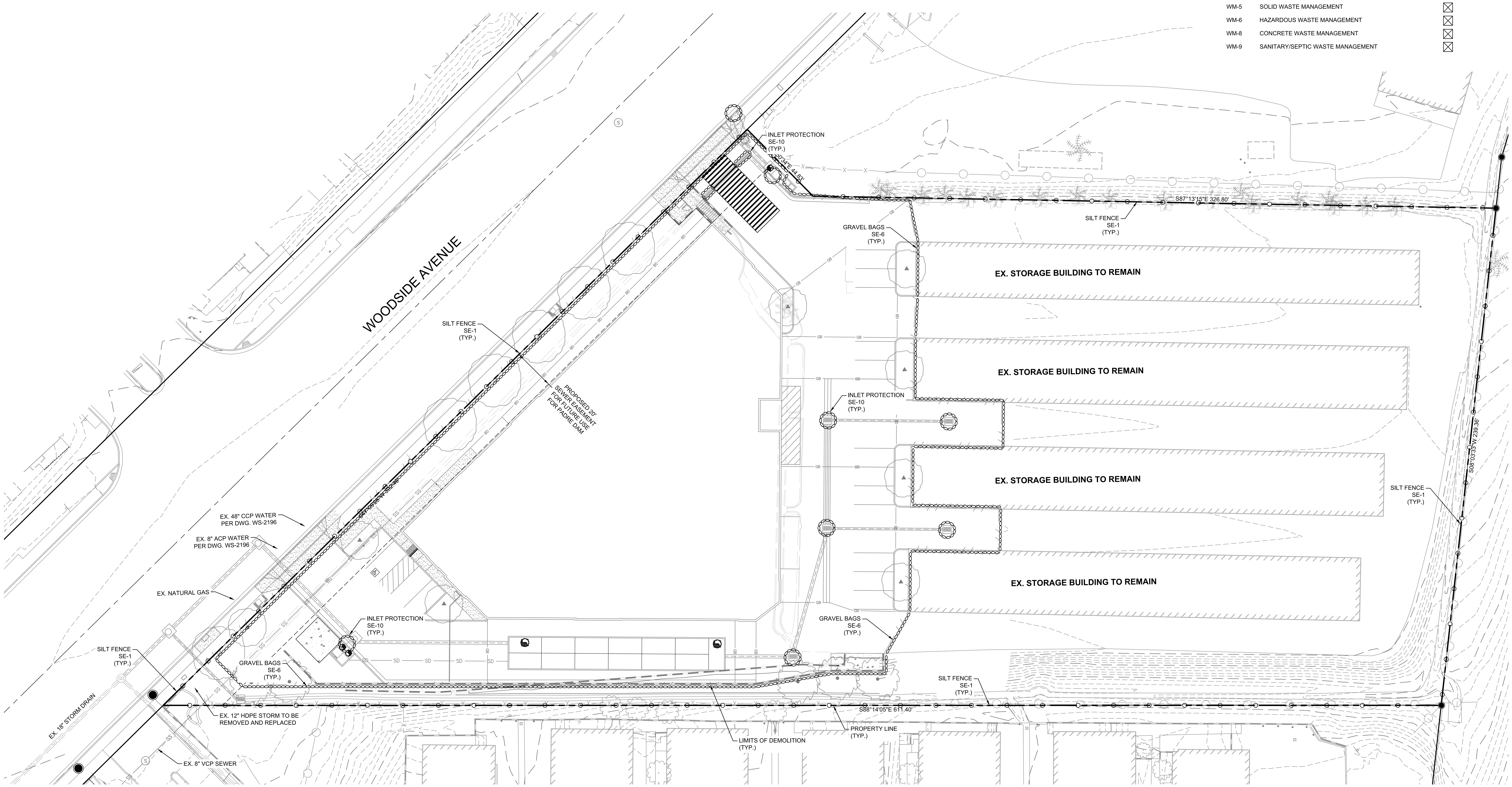
1. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES (BMPS) DURING ALL PHASES OF CONSTRUCTION.
2. SUFFICIENT BMPS MUST BE INSTALLED TO PREVENT SILT, MUD, OR OTHER CONSTRUCTION DEBRIS FROM BEING TRACKED INTO THE ADJACENT STREET(S) OR STORM WATER CONVEYANCE SYSTEMS DUE TO CONSTRUCTION VEHICLES OR ANY OTHER CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING ANY SUCH DEBRIS THAT MAY BE IN THE STREET OR CONVEYANCE SYSTEM AT THE END OF EACH WORK DAY OR AFTER A STORM EVENT THAT CAUSES A BREECH IN THE INSTALLED CONSTRUCTION BMPS.
3. STORM WATER POLLUTION PREVENTION DEVICES AND OR PRACTICES SHALL BE MODIFIED AS NEEDED AS THE PROJECT PROGRESSES TO ENSURE EFFECTIVENESS. IF AT ANY TIME, BMPS ARE FOUND TO BE INTENTIONALLY DISABLED, RUN-OVER, REMOVED, OR OTHERWISE INEFFECTIVE, THEY SHALL BE MODIFIED AND REPLACED IMMEDIATELY.
4. TRASH AND CONSTRUCTION SOLID WASTES SHALL BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND. THE STORAGE OF ALL CONSTRUCTION MATERIALS AND CONSTRUCTION WASTES MUST BE PROTECTED AGAINST THE POTENTIAL RELEASE OF POLLUTANTS INTO THE ENVIRONMENT.
5. A CONCRETE WASHOUT SHALL BE PROVIDED ON ALL PROJECTS WHICH PROPOSE THE CONSTRUCTION OF ANY CONCRETE IMPROVEMENTS THAT ARE TO BE POURED IN PLACE ON THE SITE.
6. ALL BMPS SHALL BE MAINTAINED IN WORKING ORDER AT ALL TIMES. ALL SLOPES THAT ARE CREATED OR DISTURBED BY CONSTRUCTION ACTIVITY MUST BE PROTECTED AGAINST EROSION AND SEDIMENT TRANSPORT AT ALL TIMES.
7. IF TRENCHING/DIGGING ACTIVITIES ARE NOT COMPLETED WITHIN ONE DAY, PROPER BMPS WILL BE IMPLEMENTED.
8. IF DEBRIS OR MATERIALS WILL BE STORED FOR LONGER THAN ONE DAY, PROPER BMPS WILL BE IMPLEMENTED.

EROSION CONTROL NOTES

1. CONTRACTOR TO INSPECT AND MAINTAIN EROSION CONTROL MEASURES THROUGHOUT THE COURSE OF CONSTRUCTION, INCLUDING INSTALLING, REPAIRING, REPLACING, RELOCATING, AND MODIFYING AS NECESSARY FOR CONSTRUCTION AND TO ENSURE THE SITE IS IN COMPLIANCE WITH STATE AND LOCAL REQUIREMENTS.
2. ADDITIONAL EROSION CONTROL MEASURES NOT SHOWN ON THIS PLAN MAY BE NECESSARY TO PREVENT EROSION AND SEDIMENTATION.
3. AREAS THAT ARE TO REMAIN IN A DISTURBED CONDITION FOR AN EXTENDED PERIOD SHALL BE TEMPORARILY SEEDED IN ACCORDANCE WITH STATE AND LOCAL CRITERIA.
4. REFER TO THE APPROVED LANDSCAPE PLAN FOR FINAL STABILIZATION INFORMATION. AREAS NOT STABILIZED BY PAVEMENT, BUILDING FOOTPRINT, PERMANENT LANDSCAPING, OR OTHER PERMANENT STABILIZATION SHALL BE PERMANENTLY SEEDED PER STATE AND LOCAL REQUIREMENTS.

CONSTRUCTION BMP LEGEND

BMP	TITLE	SYMBOL	QUANTITY
EC-1	SCHEDULING		
EC-3	BONDED FIBER MATRIX		
SE-1	SILT FENCE		1,600 LF
SE-5	FIBER ROLLS		
SE-6	GRAVEL BAGS		2,400 EA
SE-7	STREET SWEEPING AND VACUUMING		
SE-10	STORM DRAIN INLET PROTECTION		10 EA
TC-1	STABILIZED CONSTRUCTION ENTRANCE/EXIT		1 EA
WE-1	WIND EROSION CONTROL		
NS-3	PAVING, SEALING, SAWCUTTING & GRINDING OPERATIONS	☒	
NS-(8-10)	EQUIPMENT FUELING, CLEANING AND MAINTENANCE	☒	
WM-1	MATERIAL DELIVERY & STORAGE	☒	
WM-2	MATERIAL USE	☒	
WM-4	SPILL PREVENTION AND CONTROL	☒	
WM-5	SOLID WASTE MANAGEMENT	☒	
WM-6	HAZARDOUS WASTE MANAGEMENT	☒	
WM-8	CONCRETE WASTE MANAGEMENT	☒	
WM-9	SANITARY/SEPTIC WASTE MANAGEMENT	☒	



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SANTEE, CALIFORNIA 92071

EROSION CONTROL PLAN

NO.	DATE	REMARKS
	2024-03-01	1ST CUP SUBMITTAL
	2024-05-23	2ND CUP SUBMITTAL
	2024-09-11	3RD CUP SUBMITTAL

JOB NO.:	SDG23-4007
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Sheet 6 of 6

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ATTACHMENT G

DETERMINATION OF NO HAZARD TO AIR NAVIGATION LETTER

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2023-AWP-19356-OE

Issued Date: 01/17/2024

Clint Kleppe
Extra Space Storage
2795 E Cottonwood Pkwy
#400
Salt Lake City, UT 84121

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building Extra Space Storage - Santee
Location:	Santee, CA
Latitude:	32-50-24.49N NAD 83
Longitude:	116-57-50.01W
Heights:	380 feet site elevation (SE)
	45 feet above ground level (AGL)
	425 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 07/17/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (206) 231-2877, or Nicholas.Sanders@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2023-AWP-19356-OE.

Signature Control No: 604354758-609751561 (DNE)
Nicholas Sanders
Technician

ATTACHMENT H

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REFERENCES

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