LJ Commons Residential Project

Class 32 Categorical Exemption Report

prepared by

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1 Introduction

This report serves as the technical documentation of an environmental analysis performed by Rincon Consultants, Inc. for the LJ Commons Residential Project, which would be located on Barnell Avenue (Assessor's Parcel Number 767-12-012) in Morgan Hill, California. The intent of the analysis is to document whether the project is eligible for a Class 32 Categorical Exemption (CE) pursuant to *CEQA Guidelines* Section 15332. The report provides an introduction, project description, and evaluation of the project's consistency with the requirements for a Class 32 exemption. This includes an analysis of the project's potential impacts in the areas of biological resources, traffic, air quality, noise, water quality, and historic resources. The report concludes that the project is eligible for a Class 32 CE.

The *CEQA Guidelines* in Section 15332 states that a CE is allowed when:

a. The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.
b. The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.
c. The project site has no value as habitat for endangered, rare, or threatened species.
d. Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.
e. The site can be adequately served by all required utilities and public services.

Additionally, *CEQA Guidelines* Section 15300.2 outlines exceptions to the applicability of a CE, including cumulative impacts, significant effects due to unusual circumstances, scenic highways, hazardous waste sites, and historical resources. A full listing of these exceptions and an assessment of their applicability to the proposed project is provided in this report.

Rincon Consultants, Inc. evaluated the project's consistency with the above requirements, including its potential impacts in the areas of biological resources, traffic, noise, air quality, and water quality as well as the applicability of the exceptions to use of a Class 32 CE, to confirm the project's eligibility for the Class 32 CE.

2 Project Location and Description

2.1 Project Location and Existing Conditions

The project site encompasses one approximately 0.2-acre (9,036 square-foot) parcel (Assessor Parcel Number APN 767-12-012) located on the west side of Barnell Avenue between West Dunne Avenue and Spring Avenue in Morgan Hill. The project site is vacant, previously disturbed, surrounded by urban uses, and is comprised of primarily ruderal vegetation consisting of non-native grasses and non-native forb. The project site is bounded to the east by Barnell Avenue, beyond which is single-family residential development; to the west by Viewcrest Lane, beyond which is residential development; to the north by residential development; and to the south by multi-family residences. The site slopes gently from southwest to northeast, with a steeper slope (approximately two-foot-high slope at approximately 20 percent) at the southwest end of the site sloping in the same direction. Drainage flows generally towards the east and northeast of the project site.

The site has a City of Morgan Hill 2035 General Plan land use designation of Residential Attached Medium 16-24 dwelling units per acre [du/ac]) (Morgan Hill 2022) and is zoned Residential Attached Low Density (RAL-3,500).

Figure 1 shows the project site in a regional context and Figure 2 shows an aerial view of the project site at a local scale.

Figure 1 Regional Project Location

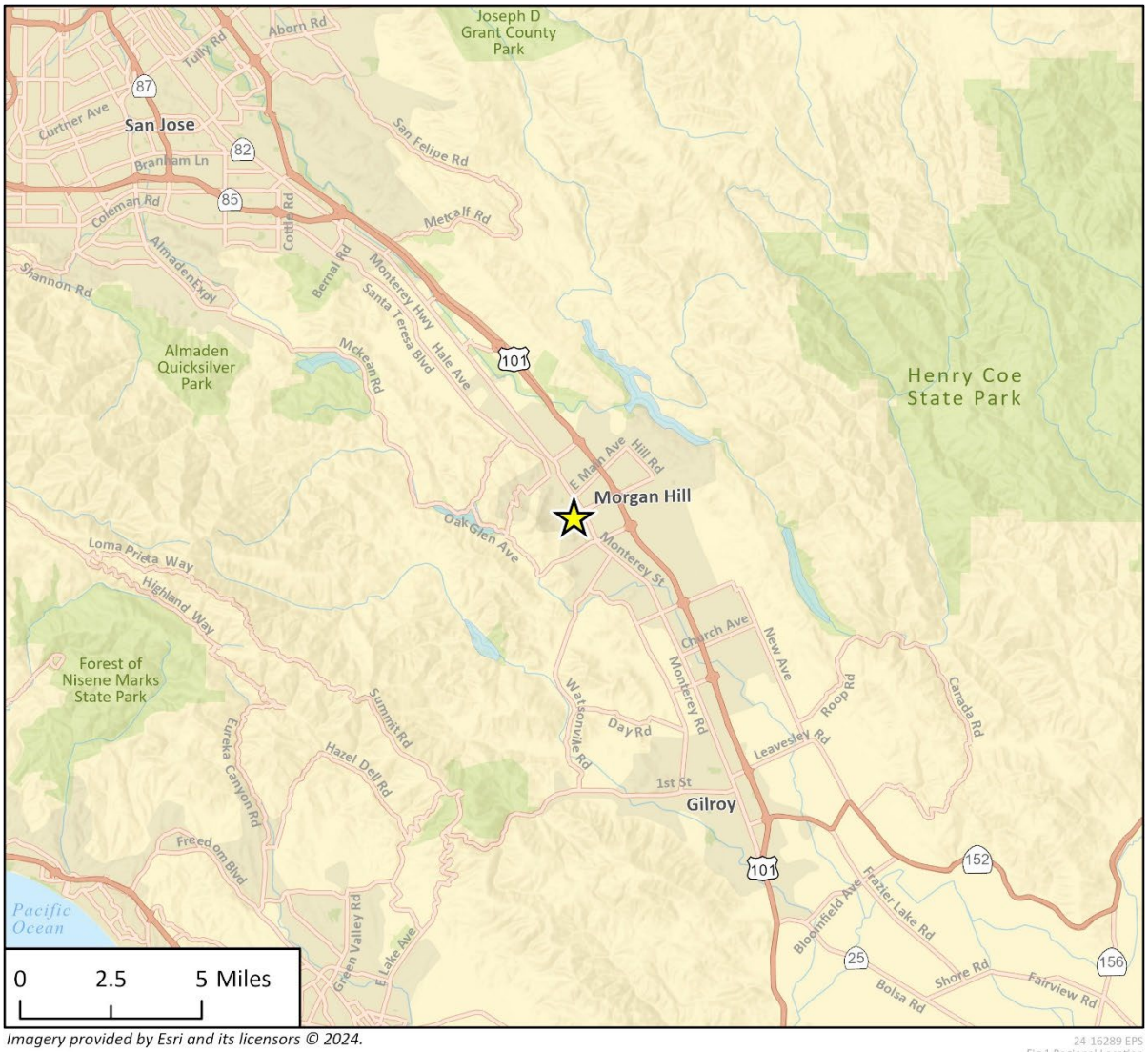


Figure 2 Project Site Location

Imagery provided by Microsoft Bing and its licensors © 2024.

24-16289 EPS
Fig 2 Project Location

2.2 Project Description

The project would involve the construction of three buildings which would accommodate a four-unit multiplex and two accessory dwelling units (ADUs) above a detached parking garage with five enclosed one-car garage parking spaces.

- Building A would be two stories and include a 1,238 square-foot standalone unit with three bedrooms and 2.5 bathrooms.
- Building B would include three two-story, 867 square-foot units which would each have two bedrooms and 1.5 bathrooms.
- Building C would include five one-car garage parking spaces on the first floor, with two ADUs located on the second floor. Each ADU would have two bedrooms.

The project would also replace the existing sidewalk along Barnell Avenue and would include a newly constructed driveway, landscaping, pedestrian walkways, and a common area with shared amenities. The project is proposed using state density bonus provisions and includes a request for waivers for front porch, balcony and parking requirements.

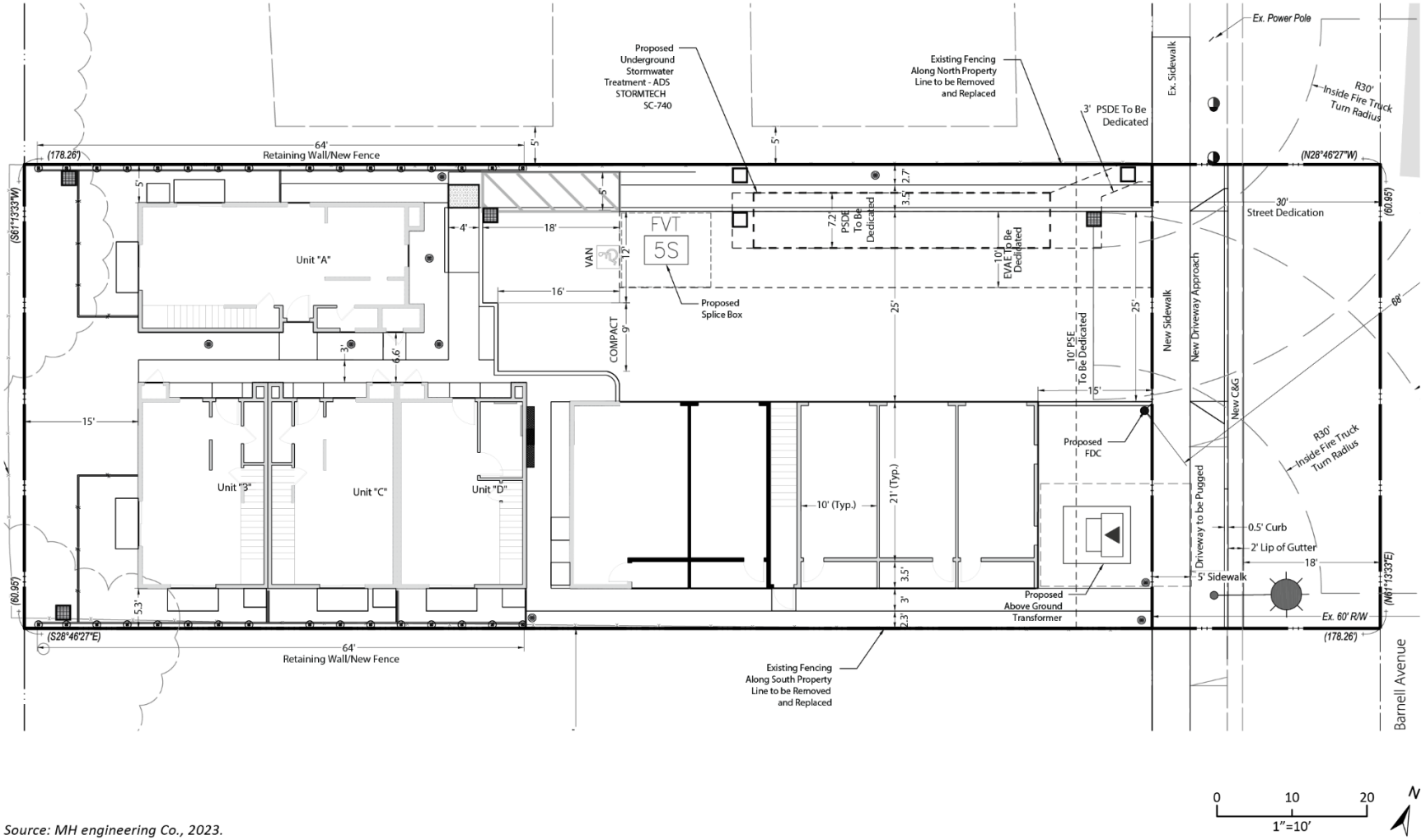
Table 1 shows the characteristics of the proposed project and Figure 3 shows the proposed site plan for the project.

Table 1 Project Characteristics

Characteristic	Project Details
Assessor's Parcel Number	767-12-012
Lot Size	9,036 SF
Lot Coverage	36%
Height	Maximum: 27 feet and 8 inches
Residential Units	4 multi-family units and two accessory dwelling units
Unit A	1,238 SF
Unit B	867 SF
Unit C	867 SF
Unit D	867 SF
ADU #1	747 SF
ADU #2	704 SF
Vehicle Parking	7 spaces (a 5-car garage including one ADA parking space, one additional exterior standalone ADA parking space, and one additional exterior standalone charging station)

SF = square feet

Figure 3 Proposed Site Plan



Source: MH engineering Co., 2023.

Site Access, Parking, and Circulation

Vehicular and emergency vehicle access to the site would be via a newly-constructed asphalt driveway from Barnell Avenue. Pedestrian access and circulation would be via a newly replaced sidewalk and new concrete paver walkways between the units and parking garage. Parking would be provided via five garage parking spaces with electric vehicle (EV) charging, one free-standing electric vehicle charging space, and one free-standing ADA parking space for a total of seven parking spaces.

Landscaping and Open Space

Landscaping would include five new trees, a variety of shrubs, ground cover, vines, grasses and succulents. One street tree, shrubs, and ground cover would be added adjacent to the project along Barnell Avenue. Grass would be planted on bioswales along the north, west, and south perimeters of the project site. Additional trees would be located in the open space in the western portion of the project site, and one tree would be located on the east side of the parking garage.

Landscaping would also include new six-foot wood fencing, a new asphalt driveway, concrete pads in private yards, concrete pavers between units, and concreate pathways on the south side of the parking garage.

Each unit would include a private yard, with the exception of the two ADUs which would have access to a shared common area with amenities such as a barbecue grill, picnic table, and shade trees.

Utilities and Stormwater Management

The project would connect to existing utility services. The City of Morgan Hill provides water services within the city. Silicon Valley Clean Energy provides electricity services to the city via Pacific Gas and Electric (PG&E) infrastructure. PG&E provides natural gas services to the city. Recology South Valley collects garbage and recycling within Morgan Hill (Morgan Hill 2024).

The project would include an ADS StormTech SC-740 underground retention facility. Water quality treatment would be achieved first through pretreatment by a 12-inch sump inside the inlet leading to underground structure to collect sediment and trash prior entering the retention facility for final infiltration. Overflow would be conveyed via a new 15-inch storm drain which would connect to the existing 24-inch public storm drain south of the project site. This project vicinity drains generally to West Little Llagas Creek, which in turn drains to the Monterey Bay watershed. The Monterey Bay watershed falls under Region 3 Central Coast regional Water Quality Control Board jurisdiction.

Construction

Project construction would occur over approximately 12 months between January 2025 and December 2025. The project would involve site grading and preparation and the construction of the three proposed buildings. The proposed project would require excavation of approximately 346 cubic yards of soil of which 135 cubic yards would be used as fill onsite and 211 cubic yards of soil would be exported offsite. Construction staging would occur onsite and construction worker parking would occur nearby on public streets.

3 Consistency Analysis

3.1 Criterion (a)

The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.

According to the City of Morgan Hill 2035 General Plan, the project site has a land use designation of Residential Attached Medium (RAM) (16-24 du/ac). Pursuant to the General Plan, the RAM designation permits attached homes attached housing types including townhomes, garden apartments, and stacked flats. The proposed density of four multi-family units and two ADUs (which do not count towards the General Plan density since they are accessory) on the approximately 0.2-acre site would be within the General Plan's residential density range of 16 to 24 units per acre. The proposed project would thus be consistent with the allowable uses of and density for the project site.

The project site is zoned Residential Attached Low Density (RAL-3,500). Pursuant to the Morgan Hill Municipal Code (MHMC), the RAL-3,500 zone permits duets and duplexes, multifamily dwellings, and accessory dwelling units. The proposed four multi-family attached units and two ADUs would thus be consistent with the allowable uses of the project site, according to its zoning district. The proposed buildings would be approximately 27 feet and eight inches tall and would therefore not exceed the RAL-3,500 maximum allowed building height of 30 feet. The City's Residential Attached Low Density Development Standards require front setbacks of 20 feet or greater, rear setbacks of 15 feet or greater, interior side setbacks of five feet or greater, and street side setbacks of 15 feet or greater. Pursuant to MHMC Section 18.56.030, the community development director may decrease the required front and rear setback by up to twenty-five percent and the required side setback by up to forty percent with the approval of a minor exception. The proposed project includes front setbacks of 15 feet, interior side setbacks of at least five feet, and rear setbacks of at least 15 feet. Therefore, with approval of a minor exception for front setbacks pursuant to MHMC Section 18.56.030, the project would be consistent with the City's setback requirements.

3.2 Criterion (b)

The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.

The project site is located on a 0.2-acre parcel within the limits of the city of Morgan Hill. It is substantially surrounded by urban uses, including to the west by a vegetated parking area, beyond which is residential development; to the east by Barnell Avenue, beyond which is residential development; to the south by multi-family residences; and to the north by multi-family residences. While a small strip of undeveloped vegetated land exists directly west of the project site, more than 75 percent of the project site is surrounded by qualified urban uses.

3.3 Criterion (c)

The project site has no value as habitat for endangered, rare, or threatened species.

Listed species are defined as species categorized as endangered, rare, or threatened (or as candidates for such designations) under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA). A project site has no value as habitat for listed species if the site lacks suitable habitat and/or appropriate habitat and micro-habitat constituents for listed species, or if suitable habitat within the project site is outside of the listed species known range.

To identify listed species with potential to occur within the project site, a variety of technical information was reviewed, including queries of the USFWS Critical Habitat Portal (USFWS 2023b), USFWS National Wetland Inventory and (USFWS 2024c).

The approximately 0.2-acre project site is vacant, surrounded by urban uses, and is comprised of primarily ruderal vegetation consisting of non-native grasses and non-native forb. The site is not located in a Critical Habitat identified by the USFWS (USFWS 2024b). No suitable habitats or natural vegetation communities are present on the project site that would support the majority of listed species evaluated during the background review.

While Crotch's bumblebee, a candidate species for listing under the CESA, has one known population occurrences approximately 2.7 miles from the project site (CDFW 2024a), there is low potential for this species to occur. Potential habitat on the project site is of low quality due to the size of undeveloped area, dominating ruderals, and isolation from more extensive natural areas by urban development. Due to the small size of available habitat on the site and limited floral resources, this species is not expected to occur on the project site.

Due to the developed and disturbed nature of the project site, tall fencing surrounding the property, small size of the project site, human activity at the site, and absence of native natural vegetation communities, the project site is not expected to support listed species. Thus, the project site has no value as habitat for endangered, rare, or threatened species.

3.4 Criterion (d)

Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

The following discussion provides an analysis of the project's potential effects with respect to traffic, noise, air quality, and water quality.

A. Traffic

Trip Generation

Rincon prepared a desktop analysis for proposed project to estimate trip generation. Project operational vehicle trip generation rates were based on estimates from Trip Generation Manual, 11th Edition (Institute of Transportation Engineers [ITE] 2021), which are based on a compilation of empirical trip generation surveys at locations throughout the country to forecast the number of trips that would be generated by the project. The average weekday trip rate for "Multifamily Housing (Low-rise)" (Land Use 220) was applied to the proposed project. This land use describes the proposed multi-family residences. As shown in Table 2, the project is expected to generate a gross

total of 41 daily trips, including 3 morning (AM) weekday peak hour trips and 4 afternoon (PM) weekday peak hour trips.

Table 2 Trip Generation

Land Use	Units	Daily Trip Rate Per Unit	AM Trip Rate Per Unit	PM Trip Rate Per Unit	Daily Trips	AM Peak Hour Trips	PM Peak Hour Trips
Single-Family Attached Housing	6	6.74	0.47	0.57	41	3	4

Source: Institute of Transportation Engineers [ITE], Trip Generation, 11th Edition, 2021

Vehicle Miles Traveled

Pursuant to Senate Bill 743, transportation and traffic impacts should be measured using vehicle miles travelled (VMT) instead of the previously used Level of Service (LOS) (California Office of Planning and Research [OPR] 2013). Reducing VMT is an effective climate strategy and is intended to decrease greenhouse gas emissions associated with the transportation sector while increasing benefits to human health.

The City of Morgan Hill has not yet adopted VMT screening thresholds; therefore, OPR screening thresholds are used to determine if a project may be assumed to result in a less-than significant transportation impact. Under OPR's VMT Screening Criteria, a residential project is presumed to result in less than significant VMT impacts if it generates fewer than 110 average daily trips (OPR 2018). The proposed project would generate approximately 41 daily trips and would therefore have a less than significant VMT impact.

Site Access

Vehicular and emergency vehicle access to the site would be via a newly-constructed driveway entrance on Barnell Ave. Pedestrian access and circulation would be via sidewalks and new walkways between the residential units and parking garage. The project would include a bicycle rack and five one-car garages would be available for bicycle storage. Newly-constructed driveways and street modifications would be required to conform to applicable City street design standards, which are developed in coordination with the Fire Marshall pursuant to Morgan Hill Code of Ordinances Chapter 17.34. Obstructions to visibility would be prohibited pursuant to Morgan Hill Code of Ordinances Chapter 10.36. A 30-foot inside fire truck turning radius and 50-foot outside fire truck turning radius are shown on the project plans entering the site from both the north and south from Barnell Ave. This turning radius is consistent with MHMC 14.44.090. Furthermore, new development is subject to development impact mitigation fees described in Chapter 3.56 of the Morgan Hill Code of Ordinances to fund the design, upgrading or improvement of the traffic network. Site access, including emergency access, would be adequate.

Construction Traffic

Construction traffic impacts could be significant if the project would create a prolonged impact due to lane closure; impede emergency vehicle access; create traffic hazards to bicycles and/or pedestrians; or result in similar substantial impediments to circulation or safety. Based on the following assumptions, project construction would not cause significant traffic impacts.

Construction hours would be limited to 7:00 a.m. through 8:00 p.m. Monday through Friday, and 9:00 a.m. through 6:00 p.m. on Saturday pursuant to MHMC Chapter 8.28. Project construction activity specified by the applicant (scheduled for Mondays through Fridays between 7:00 a.m. and 8:00 p.m. and Saturdays between 9:00 a.m. and 6:00 p.m.), would occur within the allowable construction day and time limits defined in the MHMC. Construction of the proposed project would not involve road closures that would impede or delay emergency vehicle access or create significant hazards to bicycles and pedestrians.

Construction vehicles, haul trucks, and construction workers are assumed to travel primarily along West Dunne Avenue with site access provided from Barnell Ave. Construction staging would occur onsite and construction parking would occur on public streets. Impacts would be less than significant. In addition, the project would be subject to the following City of Morgan Hill Condition of Approval:

> *Construction Logistics Plan:*
>
> A construction logistics plan shall be submitted with the off-site improvement plans that address all impacts to the public road right-of-way, including but not limited to: pedestrian control, traffic control, detours, truck routes, material deliveries, contractor's parking, on-site staging and storage areas, concrete pours, work hours, noise control, dust control, and storm water pollution prevention. It shall include an approved Truck Route Map for construction traffic to and from the site.

Finally, it should be noted that construction traffic impacts are temporary by their nature and would have no effect on traffic and circulation beyond the construction period.

Conclusion

Compliance with City requirements such as street design standards would ensure operational impacts related to circulation would be less than significant. Daily trips from the project would be below the VTA significance threshold. The project would be required to develop a Construction Traffic Management Plan for review and approval by the City to ensure there would be no substantial issues regarding site access along Barnell Avenue, and on-site circulation or emergency access. The project plans have been reviewed by the Valley Transportation Agency for compliance with their standards and requirements. Compliance with the City's requirements including construction hour limitations and the City's standard conditions of approval would ensure that impacts related to construction traffic remain less than significant. Furthermore, the proposed project would not have an adverse effect on the existing transit, pedestrian, or bicycle facilities in the area. Therefore, the project would meet the requirements for Traffic under *criterion (d)*.

3.4.1 Noise

Noise Fundamentals

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz and less

sensitive to frequencies around and below 100 Hertz (Kinsler, et. al. 1999). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; dividing the energy in half would result in a 3 dB decrease (Crocker 2007).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not "sound twice as loud" as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud as what is readily perceptible (Crocker 2007).

Sound changes occur in both level and frequency spectrum as it travels from the source to the receptor. The most obvious change is the decrease in level as the distance from the source increases. The manner by which noise reduces with distance depends on factors such as the type of sources (e.g., point or line, the path the sound will travel, site conditions, and obstructions). Noise levels from a point source typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance (e.g., construction, industrial machinery, ventilation units). Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (California Department of Transportation [Caltrans] 2013). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this "shielding" depends on the size of the object and the frequencies of the noise levels.

The impact of noise is not a function of loudness alone. The time of day when noise occurs, and the duration of the noise are also important factors of project noise impact. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed by academics and industry professionals. One of the most frequently used noise metrics is the equivalent noise level (L_{eq}); it considers both duration and sound power level. L_{eq} is defined as the single steady A-weighted level equivalent to the same amount of energy as that contained in the actual fluctuating levels over time. Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is often measured using Day-Night Average Level (L_{dn} or DNL), which is a 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours (Caltrans 2013).

Noise Standards

Morgan Hill General Plan

The City of Morgan Hill Safety, Services and Infrastructure Element (SSI) in the Morgan Hill 2035 General Plan (Morgan Hill 2016) contains goals and policies that are designed to include noise control in the planning process in order to maintain compatible land uses with acceptable environmental noise levels. The SSI Element establishes the following goals and policies that would apply to this analysis of the proposed project:

Goal SSI-8: Prevention of noise from interfering with human activities or causing health problems.

Policy SSI-8.5: *Traffic Noise Level Standards*. Consider noise level increases resulting from traffic associated with new projects significant if: a) the noise level increase is 5 dBA L_{dn} or greater, with a future noise level of less than 60 dBA L_{dn}, or b) the noise level increase is 3 dBA L_{dn} or greater, with a future noise level of 60 dBA L_{dn} or greater.

Policy SSI-8.6: *Stationary Noise Level Standards.* Consider noise levels produced by stationary noise sources associated with new projects significant if they substantially exceed existing ambient noise levels.

City of Morgan Hill Municipal Code

To implement the City's noise policies, the City adopted Chapter 8.28 Noise (Noise Ordinance) in the Morgan Hill Municipal Code (MHMC). Section 18.76.090 of the City of Morgan Hill Code of Ordinances states that no noise level may be produced so as to exceed the noise level limits shown in Table 3 below.

Table 3 City of Morgan Hill Code of Ordinances Maximum Noise Levels

Receiving Land Use	Maximum Noise Level at Lot Line of Receiving Use[1]
Industrial and Wholesale	70 dBA
Commercial	65 dBA
Residential or Public/Quasi Public	60 dBA

[1] The planning commission may allow an additional 5 dBA noise level at the lot line if the maximum noise level shown in [Table 3] cannot be achieved with reasonable and feasible mitigation.

Source: City of Morgan Hill 2024.

Section 8.28.040 states unlawful noises applicable to the project, which include:

D. Construction Activities.

1. "Construction activities" are defined as including, but not limited to, excavation, grading, paving, demolition, construction, alteration or repair of any building, site, street or highway, delivery or removal of construction material to a site, or movement of construction materials on a site. Construction activities are prohibited other than between the hours of 7:00 a.m. and 8:00 p.m., Monday through Friday and between the hours of 9:00 a.m. to 6:00 p.m. on Saturday. Construction activities may not occur on Sundays or federal holidays. No third person, including, but not limited to, landowners, construction company owners, contractors, subcontractors, or employers, shall permit or allow any person working on construction activities which are under their ownership, control or direction to violate this provision. Construction activities may occur in the following cases without violation of this provision:

Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Some land uses are considered more sensitive to ambient noise and ground-borne vibration levels than others. For example, residences, schools, and hospitals are generally more sensitive to noise than are people at commercial and industrial establishments (Morgan Hill 2016).

Vibration-sensitive receptors, which are similar to noise-sensitive receptors, include residences, schools, and hospitals. Vibration-sensitive receptors also include buildings where vibrations may interfere with vibration-sensitive equipment that is affected by vibration levels.

The nearest sensitive receptors to the project are the single-family residences that surround the project site. Specifically, single-family residences are adjacent to the north and south of the project site, and single-family residences are located approximately 60 feet to the east of the project site across Barnell Avenue.

Existing Ambient Noise Levels

As shown in Figure SSI-7 of the Morgan Hill 2035 General Plan, the project site is outside any major roadway contours; noise would be typical of a suburban environment. Among area roadways, Barnell Avenue produces noise from vehicles associated with the surrounding neighborhood. Secondary sources of roadway noise include traffic on West Dunne Avenue. While typical activities such as conversations may occur at nearby residences, traffic is the main contributor to existing ambient noise levels.

Construction Noise

Construction of the project would generate temporary noise that would be audible at nearby single-family residences to the east, north and south of the project site. Noise associated with construction is a function of the type of construction equipment, the location and sensitivity of nearby land uses, and the timing and duration of the construction activities. Based on construction details provided by the applicant, it is estimated that the construction period for all phases would be from January 2025 until December 2025.

While all phases of construction would generate noise, the site preparation and grading phases would represent the loudest periods of noise-generating activity. The greatest anticipated sources of construction noise would be generated by small earthmoving equipment such as small bulldozers and compactors. Construction noise was estimated using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) (FHWA 2006). Expected noise levels generated during the grading phase of construction at the nearest single-family residential property lines approximately 30 feet to the north and south from the center of the project site would be up to 84 dBA $L_{eq.}$

Project construction activity specified by the applicant (scheduled for Mondays through Fridays between 7:00 a.m. and 8:00 p.m. and Saturdays between 9:00 a.m. and 6:00 p.m.), would occur within the allowable construction day and time limits defined in the City of Morgan Hill Code of Ordinances: between 7:00 a.m. and 8:00 p.m. Monday through Friday and between 9:00 a.m. and 6:00 p.m. on Saturday. Therefore, noise impacts related to temporary construction noise would be less than significant.

Construction Vibration

The project does not include any substantial vibration sources associated with operation. Therefore, construction activities have the greatest potential to generate groundborne vibration affecting nearby receptors, especially during grading of the project site. The largest source of vibration from project construction would be from a loaded truck and small bulldozer (under 100 hp) that would be used when within approximately 20 feet from single-family residential buildings to the north.

Table 4 identifies vibration velocity levels at the nearby sensitive receptors from loaded trucks and a small bulldozer, as well as smaller equipment such as a static roller.

Table 4 Construction Vibration Levels

Equipment	in/sec PPV	
	Reference Level 25 Feet	Residential Building to the North and South 20 Feet
Loaded Trucks	0.076	0.106
Small Bulldozer	0.003	0.004
Static Roller	0.050	0.070
FTA Threshold for Building Damage	-	0.2
Thresholds Exceeded?	-	**No**

Source: FTA 2018

in/sec PPV = inches per second peak particle velocity

Note: Vibration analysis worksheets are included in Appendix A.

The City has not adopted specific standards for vibration impacts during construction. Therefore, the FTA *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) is used to evaluate construction vibration impacts related to potential building damage. Based on the FTA criteria, construction vibration impacts would be significant if vibration levels exceed 0.2 in/sec PPV at residential structures, which is the limit for potential building damage at these structures. Based on the information presented in Table 4, vibration levels could be up to approximately 0.106 in/sec PPV at the single-family residential buildings to the north of the project site. Therefore, construction vibration would not exceed the 0.2 in/sec PPV threshold for structural damage to nearby residential structures and impacts would be less than significant.

Operational Noise

HVAC Noise

According to the site plans provided by I & A Engineering (I & A 2023), the primary on-site operational noise source from the project would be one ground-mounted HVAC unit for each residential unit building within the project site. One 4-ton Carrier HVAC unit (MCY-MAP0487HS-UL) will be placed on the north side of Unit A, which has a sound power level of 57 dBA, equivalent to a sound pressure level of 49 dBA at 3 feet. Two-ton Carrier HVAC units (GH5SAN42400A) will be placed on the south side of each Unit B, C and D. An individual 2-ton unit has a sound power level of 76 dBA; the combined noise level of the three units would have a sound power level of 81 dBA, equivalent to a sound pressure level of 73 dBA at 3 feet (see Appendix B for manufacturer's specifications).

Accounting for the 5-foot distance between the proposed HVAC units and the residential property line to the south and the proposed 6-foot solid wood fence along the project boundary (which would provide at least an estimated noise reduction of 10 dBA) (see Appendix B for barrier calculations), noise generated by the project's HVAC equipment would attenuate to approximately 59 dBA at the adjacent residential property line to the south. Therefore, noise generated by the

project's HVAC equipment would not exceed the City's noise limit of 60 dBA at a receiving residential property line, and impacts would be less than significant.

Future Residents

In addition to mechanical equipment, the project would generate noise from people gathering at the project site. The main noise source associated with future residents would be speech from conversations. Typically, a conversation between two people using a normal voice (not raised) at a distance of three feet is 60 dBA (Engineering ToolBox 2005). No amplified sound is proposed at any gathering location, and speech from conversations would quickly dissipate and would not interfere with surrounding outdoor activities and noise-sensitive uses. Furthermore, per Assembly Bill 1307 (2023), the effect of noise generated by residential project occupants and their guests is not a significant effect on the environment. This impact would be less than significant.

Off-Site Traffic Noise

In addition, the proposed project would generate traffic noise from vehicles traveling to and from the project site. Based on calculations from using the Institute of Transportation Engineers (ITE), Trip Generation, 11th Edition, 2021, the proposed project would generate approximately 41 average daily trips. The project's increase in traffic noise was estimated by adding the project daily trip generation to the existing average daily traffic (ADT) volume on the surrounding roadways according to Replica's modeled data about activity in the built environment (Replica 2023).

As stated above, Morgan Hill 2035 General Plan Policy SSI-8.5 states that noise level increases resulting from traffic associated with new projects would be significant if the noise level increase is 5 dBA L_{dn} or greater, with a future noise level of less than 60 dBA L_{dn}. As shown in Table 5, Barnell Avenue, between West Dunne Avenue and Spring Avenue, has average daily traffic of 619 trips; West Dunne Avenue between Del Monte Avenue and Viewcrest Lane has average daily traffic of 2,826 trips and Spring Avenue between Lone Hill Drive and Del Monte Avenue has average daily traffic of 986 trips (Replica 2023). The project site is not located within 60 dBA L_{dn} or above noise contours (Morgan Hill 2016). As shown in the table, the addition of 41 trips to Barnell Avenue, West Dunne Avenue, and Spring Avenue would not increase traffic noise by 5 dBA L_{dn} or greater on the surrounding roadways. Therefore, the project's increase in traffic noise would be less than significant.

Table 5 Off-site Project Traffic Noise Increases (dBA L_{dn})

Roadway/Segment	Existing ADT[1]	Existing + Project ADT	Increase[2] (dBA L_{dn})
Barnell Avenue, between West Dunne Avenue and Spring Avenue	619	660	0.3
West Dunne Avenue between Del Monte Avenue and Viewcrest Lane	2,826	2,867	<0.1
Spring Avenue between Lone Hill Drive and Del Monte Avenue	986	1,027	0.2

ADT = average daily trips

[1] Based on data provided by Replica.

[2] Based on the formula 10 x LOG (future traffic volume/existing traffic volume)

Conclusion

The proposed project would not result in a significant long-term increase in traffic noise levels, and temporary construction noise would be less than significant, based on compliance with the City's time restrictions on construction activities, contained in the MHMC. The project's operational noise would create noise levels below the MHMC exterior noise limits. Therefore, noise-related impacts resulting from implementation of the proposed project would be less than significant.

C. Air Quality

The federal and State Clean Air Acts (CAA) mandate the control and reduction of certain air pollutants. Under these laws, the U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for criteria pollutants and other pollutants. Some pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere, including carbon monoxide, volatile organic compounds (VOC)/reactive organic gases (ROG),[1] nitrogen oxides (NO_X), particulate matter with diameters of ten microns or less (PM_{10}) and 2.5 microns or less ($PM_{2.5}$), sulfur dioxide, and lead. Other pollutants are created indirectly through chemical reactions in the atmosphere, such as ozone, which is created by atmospheric chemical and photochemical reactions primarily between ROG and NO_X. Secondary pollutants include oxidants, ozone, and sulfate and nitrate particulates (smog).

A significant adverse air quality impact may occur when a project conflicts with or obstructs implementation of the applicable air quality plan; results in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard; exposes sensitive receptors to substantial pollutant concentrations; or results in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Thresholds of Significance and Screening Criteria

The project site is located within the San Francisco Bay Area Basin and falls under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). This air quality analysis conforms to the methodologies recommended by *BAAQMD's 2022 CEQA Guidelines* (BAAQMD 2022). Table 6 shows the significance thresholds that have been recommended by BAAQMD for project operations and construction in the San Francisco Bay Area Air Basin.

[1] CARB defines VOC and ROG similarly as, "any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate," with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions, and the term ROG is used in this report.

Table 6 Air Quality Thresholds of Significance

	Construction-Related Thresholds	Operation-Related Thresholds	
Pollutant/ Precursor	Average Daily Emissions (pounds per day)	Maximum Annual Emissions (tpy)	Average Daily Emissions (lbs/day)
ROG	54	10	54
NO_X	54	10	54
PM_{10}	82 (exhaust)	15	82
$PM_{2.5}$	54 (exhaust)	10	54

Notes: tpy = tons per year; lbs/day = pounds per day; NOX = oxides of nitrogen; PM2.5 = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM10 = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ROG = reactive organic gases; tpy = tons per year.
Source: BAAQMD 2022, Table 3-1

According to Chapter 4 of *BAAQMD's 2022 CEQA Guidelines,* which includes BAAQMD's screening criteria, construction of a project would result in less than significant impacts related to criteria air pollutants if:

- The project size is at or below the applicable screening level size shown in Table 4-1.
- All best management practices (see Table 5-2 in Chapter 5, "Project-Level Air Quality Impacts" of the guidelines) are included in the project design and implemented during construction.
- Construction-related activities would not overlap with operational activities.
- Construction-related activities would not include:
  - Demolition,
  - Simultaneous occurrence of two or more construction phases (e.g., paving and building construction would occur simultaneously),
  - Extensive site preparation (e.g., grading, cut and fill, or earth movement),
  - Extensive material transport (e.g., soil import and export requiring a considerable amount of haul truck activity), or
  - Stationary sources (e.g., backup generators) subject to Air District rules and regulations.

If a project includes any of the screening criteria above, then the lead agency would need to perform a detailed assessment of the project's criteria air pollutant and precursor emissions.

Additionally, operation of a project would result in less than significant impacts related to criteria air pollutants if:

- The project size is at or below the applicable operational screening level size shown in Table 4-1.
- Operational activities would not include stationary engines (e.g., backup generators) and industrial sources subject to Air District rules and regulations.
- Operational activities would not overlap with construction-related activities.

Consistency with Applicable Air Quality Plan

The California Clean Air Act requires that air districts create a Clean Air Plan that describes how the jurisdiction will meet air quality standards. The most recently adopted air quality plan is the 2017 Bay Area Clean Air Plan (2017 Plan) (BAAQMD 2017a). The 2017 Plan focuses on two paramount goals, both consistent with the mission of BAAQMD:

- Protect air quality and health at the regional and local scale by attaining all national and state air quality standards and eliminating disparities among Bay Area communities in cancer health risk from TACs
- Protect the climate by reducing Bay Area GHG emissions to 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050

Under BAAQMD's methodology, a determination of consistency with the 2017 Plan should demonstrate that a project:

- Supports the primary goals of the air quality plan
- Includes applicable control measures from the air quality plan
- Does not disrupt or hinder implementation of any air quality plan control measures

A project that would not support the 2017 Plan's goals would not be considered consistent with the 2017 Plan. On an individual project basis, consistency with BAAQMD quantitative thresholds is interpreted as demonstrating support with the 2017 Plan's goals. The project would not result in exceedances of BAAQMD thresholds for criteria air pollutants and thus would not conflict with the 2017 Plan's goal to attain air quality standards.

The 2017 Plan includes goals and measures to promote building decarbonization, conservation of water, use of on-site renewable energy, and energy efficiency. The project would be supplied electricity by PG&E, which is required to procure 100 percent of its energy supply from renewable sources by 2045. The project would comply with applicable California Green Building Standards, including installation of energy-efficient equipment and lighting. The project would also include an all-electric design and would not utilize natural gas. Therefore, the project would not conflict with or obstruct the implementation of an applicable air quality plan, and impacts would be less than significant impact.

Criteria Pollutant Emissions

The following subsections discuss emissions associated with construction and operation of the proposed project.

CONSTRUCTION EMISSIONS

The proposed project would involve the construction of six residential units, which would be below the BAAQMD's construction screening criteria of 254 units, and would not involve demolition. Therefore, the proposed project would not exceed BAAQMD thresholds for construction emissions and construction-related impacts would be less than significant.

OPERATIONAL EMISSIONS

The proposed project would involve the construction of six residential units, which is well below the BAAQMD's operational screening criteria of 421 units. Operational activities would not include stationary engines or industrial sources and would not overlap with construction-related activities. Therefore, the proposed project would satisfy BAAQMD's operational screening criteria and operational-related impacts would be less than significant.

Exposure of Sensitive Receptors

Certain population groups, such as children, the elderly, and people with health problems, are particularly sensitive to air pollution. Therefore, the majority of sensitive receptor locations are schools, hospitals, and residences. The closest sensitive receptors to the project site are the duet single-family residences immediately adjacent to the north of the project site, multi-family residences adjacent to the south of the project site, townhouses across Barnell Avenue to the east of the project site, and condominiums across Viewcrest lane to the west of the project site. Localized air quality impacts to sensitive receptors typically result from CO hotspots and TACs, which are discussed in the following subsections.

CARBON MONOXIDE HOTSPOTS

According to BAAQMD Chapter 4, *Screening for Criteria Air Pollutants and Precursors*, a project would have less than significant CO impacts if:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- Project-generated traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- Project-generated traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The project is presumed to be consistent with applicable congestion management programs. There are no intersections in the project vicinity with volumes of more than 44,000 vehicles per hour; for example, a previous City traffic count for West Dunne Avenue in 2015 showed 7,603 average daily trips near the project site, which would be much lower than the 44,000 vehicle per hour threshold (City of Morgan Hill 2015). Additionally, the San Francisco Bay Area Air Basin has been designated attainment for both federal and State standards for CO since 1998 (BAAQMD 2017b). Therefore, impacts related to CO emissions would be less than significant.

TOXIC AIR CONTAMINANTS

Certain population groups such as children, the elderly, and people with health issues are particularly sensitive to air pollution. The majority of sensitive receptor locations are schools, residences and hospitals. The closest sensitive receptors to the project site are the duet single-family residences immediately adjacent to the north of the project site, multi-family residences adjacent to the south of the project site, single-family residences across Barnell Avenue to the east of the project site, and condominiums across Viewcrest Lane to the west of the project site. The following subsections discuss the project's potential to result in impacts related to TAC emissions during construction and operation.

Construction

Construction-related activities would result in temporary project-generated emissions of diesel particulate matter (DPM) exhaust emissions from off-road, heavy-duty diesel equipment for site

preparation, grading, building construction, and other construction activities. DPM was identified as a TAC by CARB in 1998 (CARB 2024).

Generation of DPM from construction projects typically occurs in a single area for a short period. Construction of the proposed project would occur over approximately 12 months. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the Maximally Exposed Individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a longer period of time. According to the California Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project. Thus, the duration of proposed construction activities (i.e., 12 months) is approximately three percent of the total exposure period used for 30-year health risk calculations. Current models and methodologies for conducting health-risk assessments are associated with longer-term exposure periods of 9, 30, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities, resulting in difficulties in producing accurate estimates of health risk (BAAQMD 2023).

The maximum PM_{10} and $PM_{2.5}$ emissions would occur during site preparation and grading activities. These activities would last for approximately two weeks. PM emissions would decrease for the remaining construction period because construction activities such as building construction and paving would require less intensive construction equipment. While the maximum DPM emissions associated with site preparation and grading activities would only occur for a portion of the overall construction period, these activities represent the worst-case condition for the total construction period. This would represent less than one percent of the total 30-year exposure period for health risk calculation. In addition, the construction equipment used would have US EPA Tier 4 engines, which greatly reduces DPM emissions compared to older engines. Given the aforementioned discussion, DPM generated by project construction would not create conditions where the probability is greater than one in one million of contracting cancer for the Maximally Exposed Individual or to generate ground-level concentrations of non-carcinogenic TACs that exceed a Hazard Index greater than one for the Maximally Exposed Individual. Therefore, project construction would not expose sensitive receptors to substantial TAC concentrations, and impacts would be less than significant.

Operation

Sources of operational TACs include, but are not limited to, land uses such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities. The project does not include construction of new gas stations, dry cleaners, highways, roadways, or other sources that could be considered new permitted or non-permitted sources of TAC or $PM_{2.5}$ in proximity to sensitive receptors. In addition, mobile emissions generated from the project would be minimal and spread over a broad geographical area. Therefore, project operation would not expose sensitive receptors to substantial TAC concentrations, and impacts would be less than significant.

Odors

BAAQMD's 2022 CEQA Air Quality Guidelines identifies land uses that have the potential to generate substantial odor complaints. The uses in the table include wastewater treatment plants, landfills or transfer stations, refineries, composting facilities, confined animal facilities, food manufacturing, smelting plants, and chemical plants (BAAQMD 2023). Odors are typically associated with industrial projects involving the use of chemicals, solvents, petroleum products, and other strong-smelling elements used in manufacturing processes, as well as sewage treatment facilities and landfills.

The project does not involve, nor would locate, new sensitive receptors in proximity to odor-emitting uses as identified in BAAQMD's 2022 CEQA Air Quality Guidelines. The proposed uses would not generate objectionable odors that would affect a substantial number of people. Furthermore, the project would be subject to BAAQMD Regulation 7, Odorous Substances, which requires abatement of any nuisance generating an odor complaint. Therefore, the project would not substantially cause new sources of odors and would not significantly expose sensitive receptors to existing or new odors, and impacts would be less than significant. Furthermore, the project would be subject to the City of Morgan Hill's standard conditions of approval which require a management plan detailing strategies for dust during construction of the project to be submitted for review prior issuance of a grading permit, and would be subject to the City's basic construction mitigation measures related to dust suppression which require minimizing idling times, watering exposed surfaces, and that construction equipment be checked by a certified visible emissions evaluator.

Conclusion

The proposed project would not result in significant air quality impacts.

D. Water Quality

The project site is currently developed with existing structures and there are no wetlands on or near the project site (USFWS 2024). The project site is within the Dewitt Creek watershed, which is tributary to West Little Llagas Creek that drains to Monterey Bay watershed. The Monterey Bay watershed falls under region 3 Central Coast regional Water Quality Control Board jurisdiction. The existing site drains generally to the east.

The project proposes an ADS StormTech SC-740 underground retention facility. Water quality treatment would be achieved first through pretreatment by a 12-inch sump inside the inlet leading to underground structure to collect sediment and trash prior entering the SC-740 underground facility for final infiltration. A 15-inch storm drain line along Barnell Avenue would connect to an existing 24-inch storm drain line south of the project to manage overflow (Appendix C).

According to the preliminary stormwater report, the pre-project 100-year storm runoff is 0.17 cubic feet per second (cfs) and the post-project 100-year storm runoff would be reduced to 0.16 cfs; therefore, the project includes a sufficient storm drainage collection system to serve the project and would be designed to be capable of handling a 100-year storm without local flooding (Appendix C). The project site would connect to an existing stormwater drainage system managed and maintained by the City of Morgan Hill. Construction of the proposed project would not alter the course of a pond or creek or other stream or river.

Currently the project site is undeveloped and does not contain impervious surfaces. The project would add new imperious paving, landscaping, and buildings. The project would result in a total impervious surface area after buildout of 7,189 square feet (Appendix C).

The project would be subject to compliance with the California Regional Water Quality Control Board Central Coast Region (Region 3) Resolution No. R3-2013-0032, and the City's NPDES Permit. Additionally, the proposed project would be required to comply with Chapter 18.140 of the MHMC which sets requirements for stormwater management including the requirement to implement Best Management Practices (BMPs) and the requirement to create a stormwater runoff management plan to reduce stormwater runoff.

Impervious surface that would result from the construction of the proposed project would not create or contribute runoff that would exceed the capacity of the existing stormwater conveyance infrastructure or otherwise result in flooding on or near the project site.

Conclusion

Because the project would not substantially increase stormwater runoff and would be required to comply with City requirements to control and filter runoff, development of the proposed project would not degrade the quality of stormwater runoff from the site. With the proposed stormwater control measures, post-project 100-year outflow rates would be reduced compared with pre-project outflow rates. The proposed project would not substantially increase runoff volumes, result in substantial erosion or siltation, or result in flooding on- or off-site. Additionally, the project would not substantially alter the existing drainage pattern of the site such that flooding or water quality violations would occur. Therefore, the project would meet the requirements for water quality under *criterion (d)*.

3.5 Criterion (e)

The site can be adequately served by all required utilities and public services.

The project would be located in an urban area served by existing public utilities and services. The proposed project is relatively small with only six units and would not result in a substantial increase in demand for services or utilities. Valley Water supplies water to the city, and the City of Morgan Hill provides water services to the project site. Silicon Valley Clean Energy provides electricity services to the city via Pacific Gas and Electric (PG&E) infrastructure. Natural gas infrastructure is not proposed as part of this project. Recology South Valley collects garbage and recycling within Morgan Hill (Morgan Hill 2024a). Wastewater is transported to a water treatment plant located in Gilroy that is owned and operated by the South County Regional Wastewater Authority (SCRWA), under a Joint Powers Agreement with the cities of Morgan Hill and Gilroy. Utility lines for the proposed project would be connected to existing city infrastructure. As described under *Criterion (d)*, stormwater from the project would be pre-treated through a sump inside the inlet prior to entering the underground retention facility for final infiltration before being conveyed into the existing storm drain system under West Dunne Avenue.

Conclusion

The proposed project involves infill development on a project site in an urban area that is already served by existing utilities and public services. As discussed under criterion (a), the project is within the allowed density for the site and is consistent with the General Plan land use designation for the site. The project would not increase the intensity of use such that existing utility and public service providers would not be able to serve the project site. Therefore, the project would meet the requirements for Utilities and Service Systems under *criterion (e)*.

4 Exceptions to the Exemption

CEQA Guidelines Section 15300.2 outlines exceptions to the applicability of a Categorical Exemption, including cumulative impacts, significant effects due to unusual circumstances, scenic highways, hazardous waste sites, and historical resources. These exceptions are discussed below. As shown, none of the exceptions would apply.

4.1 Cumulative Impacts

CEQA Guidelines Section 15300.2 states that "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." Table 7 includes a list of relevant projects within 0.5 miles of the project site; none of these projects are close enough to be considered "in the same place" as the project site.

Table 7 Cumulative Projects List

Project Location	Land Use	Description	Status	Distance to Project Site (miles)
Spring-Giancola Multiple Permits (West of the intersection of Edes Court and Monterey Road)	Residential	Subdivision Map for 23 lots	Approved	0.2
17090 Peak Avenue	Residential	48-unit care facility	Approved	0.3
16720 Monterey Road	Commercial	Reconstruction of existing gas station	Entitlements Approved	0.3
East side of Depot Street, north of East Dunne Avenue	Residential	49 Multi-family units and office space	Under Construction	0.4
Monterey Road, San Pedro Avenue, and Church Street	Residential	86 Age-restricted rental units	Under Construction	0.4

Source: City of Morgan Hill 2024b

As discussed in Section 3.3, Criterion (c) above, the project would not affect sensitive biological resources and therefore would not result in a cumulative impact related to biological resources. As discussed in Sections 3.4, Criterion (d), subsections A and C above, VMT and air quality analyses already take into account cumulative impacts and these impacts were found to be less than significant. As discussed in Section 3.4, Criterion (d), subsection D and Section 3.5, Criterion (e), the proposed project would not contribute pollutants such that water quality would be impacted and would be served by available utilities and public services. Therefore, impacts related to these issue areas were found to be less than significant and the project would not result in a cumulatively considerable contribution to potential cumulative impacts.

The project would involve temporary noise and vibration during construction; however, these effects are localized and would cease upon cessation of construction activities. Therefore, the project would not result in a cumulatively considerable contribution to a cumulative noise increase. Construction noise impacts may overlap for the proposed project and the projects listed above. However, due to the distance between the project site and the project included in the cumulative projects list and because construction noise impacts are temporary, the project would not result in

significant cumulative noise impacts. Overall, the project would not result in a significant contribution to potential cumulative impacts. Therefore, this exception does not apply to the proposed project.

4.2 Significant Effect due to Unusual Circumstances

CEQA Guidelines Section 15300.2 states that "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."

As discussed under Section 2.1, *Project Location and Setting*, the project site is a level, rectangular-shaped property that is currently vacant, with mostly non-native grasses and non-native forbs and surrounded by urban development. Neither the site, its surroundings, or the proposed project itself (a residential project on a level site in a residential neighborhood) are unusual in terms of existing conditions, land uses or proposed features. The project site does not possess characteristics which would qualify as unusual circumstances under *CEQA Guidelines* Section 15300.2. There are no known unusual circumstances at the project site or related to project operations that would result in a reasonable possibility of significant effects to the environment. Therefore, this exception to a CE does not apply to the proposed project.

4.3 Scenic Highways

CEQA Guidelines Section 15300.2 states that a CE "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."

CEQA Guidelines Section 15300.2 states that 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." There are no designated State Scenic Highways in the vicinity of the project site. The closest scenic highway is Route 152, which connects to Highway 1 and has been recognized as eligible for designation as a State Scenic Highway, located approximately 9 miles southwest of the project site (Caltrans 2019). Due to distance and intervening topography, structures and trees, the project site is not visible from Route 152 or Highway 1. In addition, there are no trees, historic buildings, rock outcroppings, or similar resources on the site. The project would not damage scenic resources within a highway officially designated or eligible for designation as a state scenic highway. This exception would not apply to the project.

4.4 Hazardous Waste Sites

CEQA Guidelines Section 15300.2 states that 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."

A Phase I and II Environmental Site Assessment was conducted for the project site by GeoSolve Inc. in September 2022 (Appendix D). GeoSolve Inc. conducted a review of files at the County of Santa Clara Department of Environmental Health, the Morgan Hill Fire Department, and the California Regional Water Quality Board – Region 2 using the Geotracker website. According to the Environmental Site Assessment, no files were available for review from these agencies, and no files

and/or environmental assessment or spill or leak investigations and cleanups (SLIC) sites were available for the project site. GeoSolve Inc. also contacted the California Department of Toxic Substances and Control (DTSC) and no SLIC files were identified (Appendix D). No cleanup sites are listed on DTSC's Envirostor database on or adjacent to the project site. The site is not included on a list compiled pursuant to Section 65962.5 of the Government Code. Therefore, this exception does not apply to the project.

4.5 Historical Resources

CEQA Guidelines Section 15300.2(f) states that a categorical exemption "shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource."

An Archeological Resource Management Report for the project was prepared in December 2022 by Andew Von Pinnon, M.A., and submitted by Archeological Resource Service. The Archeological Resource Management Report is included in Appendix E.

The report analysis was based on the results of the information on file with the Archeological Resource Service office and the Regional Office of the California Historical Resources Information System; a check of appropriate historic references to determine the potential for historic era archaeological deposits, and contact with the Native American Heritage Commission to determine the presence or absence of listed Sacred Lands within the project area; contact with all appropriate Native American organizations or individuals designated by the Native American Heritage Commission as interested parties for the project area; and a surface reconnaissance of all accessible parts of the project area to locate any visible signs of potentially significant historic or prehistoric cultural deposits.

The project site is vacant and contains no built environment historical resources. The Archeological Resource Management Report determined that the project site does not contain any known archaeological resources (Appendix E). While no known archaeological resources that may qualify as historical resources under CEQA are known to be present within the project site, previous and modern disturbances may have disturbed shallowly buried resources, if any once existed onsite. Proposed project-related ground disturbance may extend below disturbed soils or fill materials and into underlying native soils, and it is possible that subsurface archaeological materials may be encountered. The City's Standard Condition of Approval for development projects, which includes procedures to follow in the event of an unanticipated discovery, cultural resources sensitivity training for construction personnel, full-time Native American monitoring of all ground-disturbing activities by a member of the Tamien Nation, and retention of an archaeologist to respond to discoveries as needed, would apply and address unanticipated discovery of subsurface archaeological materials. Compliance with existing state regulations would also be required in the event of an unanticipated discovery of human remains.

5 Summary

Based on this analysis, the proposed LJ Commons Residential Project meets the criteria for a Class 32 Categorical Exemption pursuant to Section 15332 of the State CEQA Guidelines and is exempt from CEQA pursuant to CEQA Guidelines Article 19.

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Appendix A

Roadway Construction Noise Model (RCNM) Results

Construction Noise

	Noise Level @ 50 ft	Single Family Res to the N	Single Family Res to the S
Distance		30	30
Grading	**80**	**84.437**	**84.437**
Building Construction	**78**	**82.437**	**82.437**
Paving	**77**	**81.437**	**81.437**
Other	**74**	**78.437**	**78.437**

Construction Vibration

	Vibration @ 25 ft	Single Family Res to the S	Single Family Res to the S
Distance		20	50
Loaded Trucks	**0.076**	**0.106**	**0.027**
Static Roller	**0.05**	**0.070**	**0.018**
Small Bulldozer	**0.003**	**0.004**	**0.001**

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 08/26/2024
Case Description: Grading

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Grading	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compactor (ground)	No	20		83.2	50.0	0.0
Dozer	No	40		81.7	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Night	Day	Calculated (dBA) Evening	Night	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Lmax
Equipment		Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq	Lmax
Compactor (ground)		83.2 76.2		N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A
Dozer		81.7 77.7		N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A
	Total	83.2 80.0		N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
		0.0	0.0	0.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compactor (ground)	No	20		83.2	0.0	0.0
Dozer	No	40		81.7	0.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Calculated (dBA)

Equipment	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Compactor (ground)	-7.0	N/A	N/A	N/A	N/A	N/A
Dozer	-4.0	N/A	N/A	N/A	N/A	N/A
Total	0.0	-2.2	N/A	N/A	N/A	N/A

Day

Equipment	Lmax	Leq
Compactor (ground)	N/A	N/A
Dozer	N/A	N/A
Total	N/A	N/A

Evening

Equipment	Lmax	Leq
Compactor (ground)	N/A	N/A
Dozer	N/A	N/A
Total	N/A	N/A

Night

Equipment	Lmax	Leq
Compactor (ground)	N/A	N/A
Dozer	N/A	N/A
Total	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 08/09/2024
Case Description: Building Construction

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Building Construction	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Man Lift	No	20		74.7	50.0	0.0
Drum Mixer	No	50		80.0	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Calculated (dBA)				Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Man Lift	74.7	67.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drum Mixer	80.0	77.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.0	77.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 08/09/2024
Case Description: Paving

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Paving	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	50.0	0.0
Roller	No	20		80.0	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Night	Day	Calculated (dBA) Evening	Night	Day Evening	Night
Equipment		Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq
Paver		77.2 74.2	N/A N/A	N/A N/A	N/A N/A
Roller		80.0 73.0	N/A N/A	N/A N/A	N/A N/A
	Total	80.0 76.7	N/A N/A	N/A N/A	N/A N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 08/09/2024
Case Description: Other

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Other	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

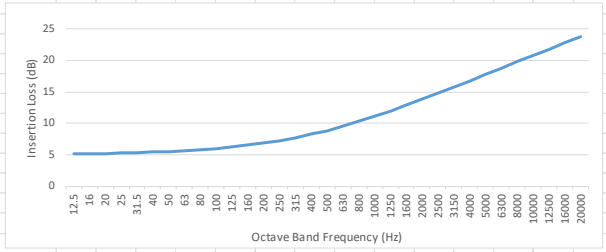
Appendix B

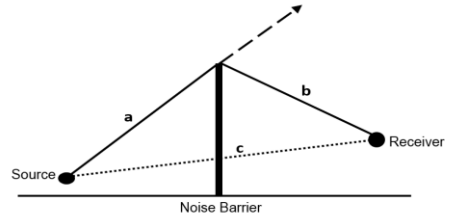
Barrier Calculation and Operational Equipment Specifications

Barrier Calculation

Barrier Insertion Loss Calculator

Distances	Inputs
From source to barrier	5.5
From reciever to barrier	5.0
Barrier Height	6.0
Source Height	3.0
Reciever Height	5.0
a	6.3
b	5.1
c	10.7
Path Length Δ = a+b-c	0.7
Speed of Sound (fps)	1140.0





Octave Band (Hz)		16			31.5			63				125			250			500			1k			2k			4k			8k			16k		
1/3 Octave Band (Hz)		12.5	16	20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000
Fresnel Number= N		0.0074038	0.009	0.012	0.015	0.019	0.024	0.03	0.037	0.047	0.059	0.074	0.095	0.118	0.148	0.187	0.237	0.296	0.373	0.474	0.592	0.74	0.948	1.185	1.481	1.866	2.369	2.962	3.731492174	4.738	5.923	7.404	9.477	11.85
Insertion Loss (IL) [dB]		**5.1332437**	**5.17**	**5.212**	**5.264**	**5.33**	**5.417**	**5.517**	**5.644**	**5.807**	**5.993**	**6.217**	**6.518**	**6.845**	**7.228**	**7.692**	**8.246**	**8.834**	**9.514**	**10.29**	**11.07**	**11.91**	**12.88**	**13.79**	**14.73**	**15.71**	**16.74**	**17.7**	**18.70170544**	**19.74**	**20.71**	**21.68**	**22.75**	**23.72**
IL= 20 dB if N>12.5	*A-weighting Corrections*											*-16.1*	*-13.4*	*-10.9*	*-8.6*	*-6.6*	*-4.8*	*-3.2*	*-1.9*	*-0.8*	*0*	*0.6*	*1*	*1.2*	*1.3*	*1.2*	*1*	**Flat**	**A-Wght**					
								Generic Engine Spectra				65.6	60.2	59	55.4	53	54.1	55	55	57	57.1	56	53.8	52	48.5	46	42.1	**69**	**64.4**					
								Normalized Spectra				70.2	64.8	63.8	60.0	57.9	58.7	59.5	59.6	62.0	61.7	60.2	58.4	56.1	53.1	51.0	46.7	**74**	**69.0**					
Unmitigated Noise Level	69																																	
								Attenuated Spectra				63.9	58.2	56.9	52.7	50.2	50.4	50.6	50.0	51.7	50.6	48.2	45.5	42.3	38.3	35.2	29.9	**67**	**58.6**					
Mitigated Noise Level	**58.6**																																	

Formulas and methods from Utexas Design Guide for Highway Noise Barriers

BlueMountain
Construction Services

Equipment Summary for Aspen Residential
LJ Commons
5 Townhomes in Morgan Hill, CA
Design/Build proposal from Blue Mountain Construction Services
November 29, 2023

Blue Mountain Construction Services proposes to furnish and install the heating, air conditioning, control equipment and sheet metal in accordance with your scope of work and our proposal. To clarify what we are proposing to provide we have created the overview below and supplied you with additional exhibits to further clarify installation expectations.

Unit Type A:

Equipment Manufacturer	**Specifications**
(6) Carrier #MMU-UP0071YHP-UL-1	07M BTU Ceiling mounted cassettes
Carrier #MCY-MAP0487HS-UL	4.0 Ton Heat Pump – 17.0 SEER/10.1 EER/10.0 HSPF
(6) Carrier #BRC1E73	Wired controllers – AHRI #205708868

Unit Type B, C and D:

Equipment Manufacturer	**Specifications**
Carrier #FV4CNF002L00	24M BTU Horizontal fan coil – 8.5 H.S.P.F.
Carrier #GH5SAN42400AA	2.0 Ton Heat Pump – 16.0 SEER – 13.0 EER – AHRI #209691594
April Aire #6403K	2 Zone board controller
(2) Honeywell #TH6320ZW2003	Digital setback Z-Wave thermostats

Unit Type ADU Major:

Equipment Manufacturer	**Specifications**
Carrier #FV4CNF002L00	24M BTU Horizontal fan coil – 8.5 H.S.P.F.
Carrier #GH5SAN42400AA	2.0 Ton Heat Pump – 16.0 SEER – 13.0 EER – AHRI #209691594
Honeywell #TH6320ZW2003	Digital setback Z-Wave thermostat

Our goal is to make your projects affordable while making your homeowners comfortable before and after they move in. A great price that delivers no comfort or poor service is really not a great price at all.

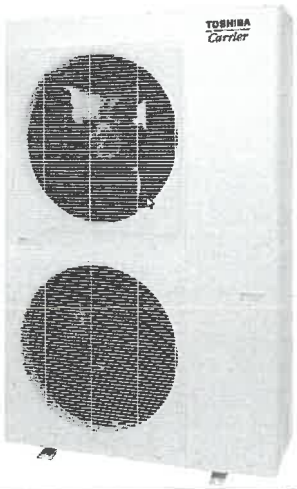
Unit Type A

SSMS-e Single VRF Outdoor Unit
MCY-MAP0487HS-UL—Heat Pump

TOSHIBA
Carrier

Submittal Data

Job Data _____ Location _____
Buyer _____ Buyer PO # _____ Carrier # _____
Unit Number _____ Model Number _____
Performance Data Certified By _____ Date _____



SMMS-e VRF Heat Pump Features

- 3, 4, and 5-ton single-phase modules available
- Modules have inverter-driven twin rotary compressor
- 591 ft (180 m) actual total system piping (liquid line)
- 328 ft (100 m) actual piping length from outdoor unit to furthest fan coil
- Up to 330 ft (100 m) control wiring between outdoor units
- Up to 6560 ft (2000 m) control wiring between the outdoor units and indoor units
- Operating temperature range Cooling (db): 23 to 122 F (–5 to 50 C)
- Heating (wb): –13 to 60 F (–25 to 15.6 C)
- Protection: high pressure sensor and switch, low pressure sensor, process controller board fuse, inverter overload protection
- 7-year compressor limited warranty,
- 5-year parts limited warranty

Header Unit Model	MCY-MAP0487HS-UL	
PERFORMANCE		
Nominal Cooling Capacity	Btu/h	48,000
Nominal Heating Capacity	Btu/h	54,000
Maximum Total Connected Indoor Unit Capacity		Up to 135%
COOLING EFFICIENCY†		
SEER, Ducted FCUs	Btu/Wh	16.60
SEER, Ductless FCUs	Btu/Wh	21.00
HEATING EFFICIENCY†		
HSPF, Ducted FCUs		9.50
HSPF, Ductless FCUs		11.50
Fan Type (Qty)		Propeller (2)
Airflow	CFM	4690
Combined System Sound Pressure, Cooling/Heating	dBA	54.0/57.0
ELECTRICAL		
Power Supply	V/Ph/Hz	208-230/1/60
Minimum Circuit Amps (MCA)	A	36.3
Recommended Fuse Size	A	40

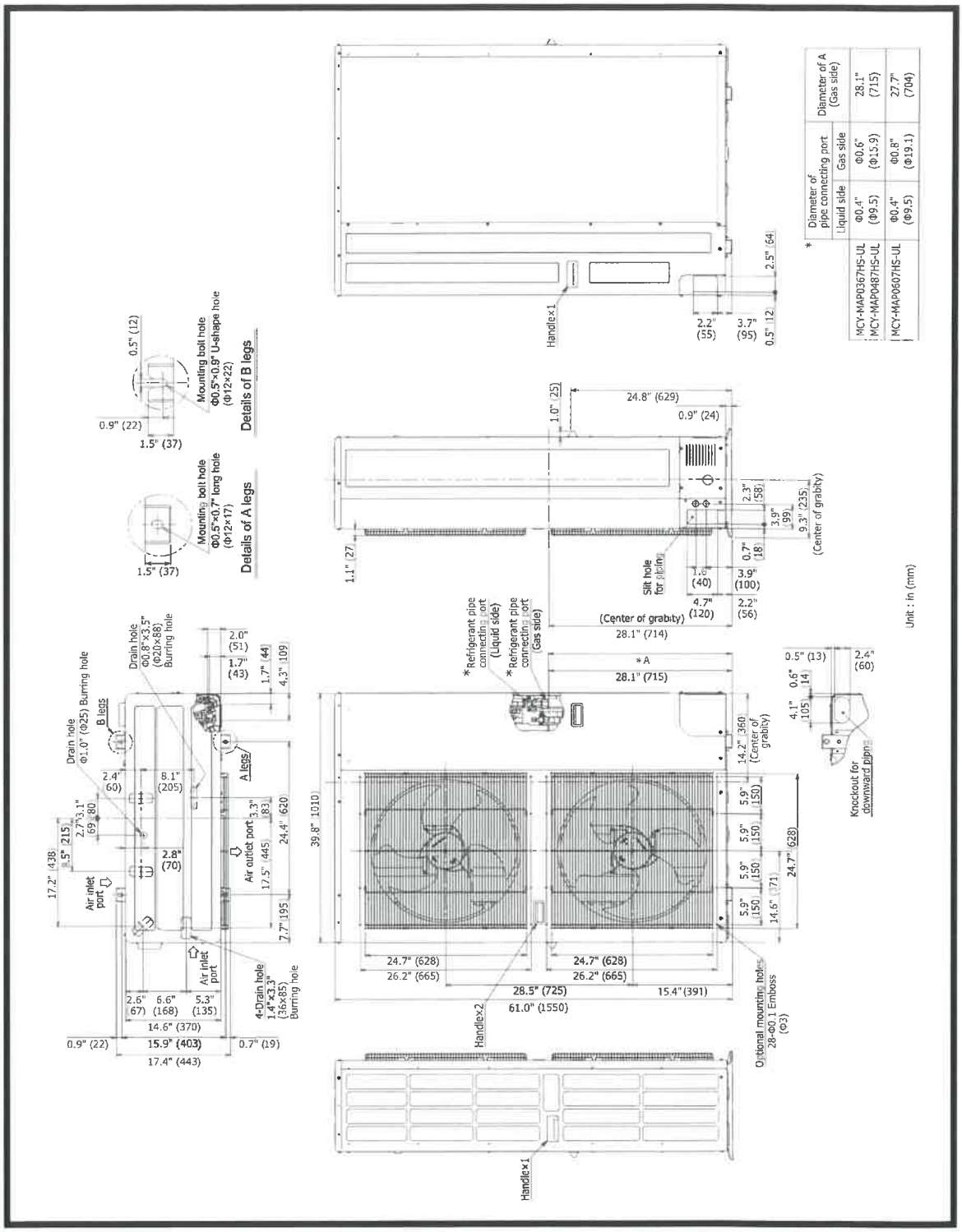
COMPRESSORS		
Type (Number)		Hermetic Twin Rotary (1)
Motor Output	kW	3.75
FAN MOTOR		
Motor Type (Steps)	Propeller Fan (2)	
Motor Output	kW	0.10 + 0.10
PHYSICAL DATA		
Pipe Connection Size - Liquid (High Pressure)	in.	3/8 (Flare)
Pipe Connection Size - Gas (Low Pressure)	in.	5/8 (Flare)
Refrigerant		R-410A
Factory Charge††	lb	14.8
External Finish	Munsell 1Y8.5/0.5	
Unit Width	in.	39.8
Unit Height	in.	61.0
Unit Depth	in.	14.6
Unit Net Weight	lb	311

LEGEND

db — Dry Bulb
SEER — Seasonal Energy Efficiency Ratio
FCU — Fan Coil Unit
HSPF — Heating Seasonal Performance Factor
wb — Wet Bulb

†Rated per AHRI (Air-Conditioning, Heating and Refrigeration Institute) 1230 Standard.
Cooling: Indoor 80°F (27°C) db/67°F (20°C) wb; Outdoor 95°F (35°C) db
Heating: Indoor 70°F (21°C) db; Outdoor 47°F (8°C) db/43°F (6°C) wb
††Additional charge required.

OUTDOOR UNIT HEAT PUMP MCY-MAP0487HS-UL
DIMENSIONAL DRAWING

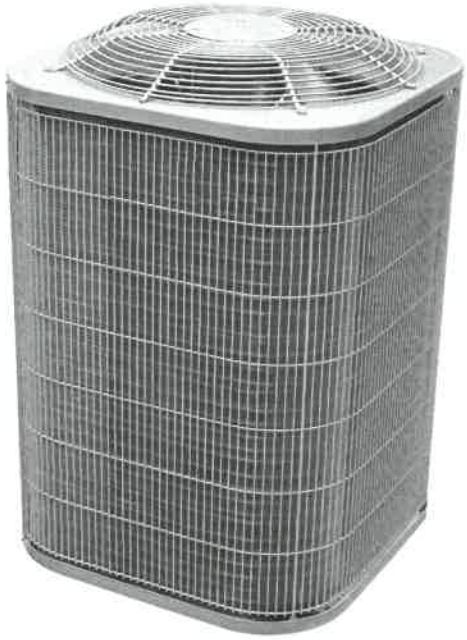


GH5S
Single-Stage Heat Pump with Puron® Refrigerant 1-1/2 To 5 Tons

Carrier

Turn to the experts

Product Data



This unit has been designed utilizing Carrier's non-ozone depleting Puron® refrigerant. Heat pumps with Puron® refrigerant provide a collection of features unmatched by any other family of equipment.

NOTE: Ratings contained in this document are subject to change at any time. Always refer to the AHRI directory (www.ahridirectory.org) for the most up-to-date ratings information.

Industry leading Features / Benefits

Efficiency

- 14.3 - 15.2 SEER2 / 11.0 - 12.5 EER2 / 7.5 - 8.1 HSPF2 (depending on unit size and indoor combination installed)
- Microtube technology refrigeration system
- Indoor air quality accessories available

Sound

- Sound levels as low as 69 dBA with accessory sound blanket

Comfort

- System supports programmable or standard thermostat controls

Reliability

- Non-ozone depleting Puron® refrigerant
- Scroll compressor
- Internal pressure relief valve
- Internal thermal overload
- Loss of charge switch
- Filter drier
- Balanced refrigeration system for maximum reliability

Durability

Protection Package:

- Solid, durable sheet metal construction
- Dense wire coil guard

Applications

- Long-line - up to 250 feet (76.20 m) total equivalent length, up to 200 feet (60.96 m) condenser above evaporator, or up to 80 ft. (24.38 m) evaporator above condenser (See Longline Guide for more information.)
- Low ambient cooling (down to 0°F/-17.8°C) with approved low ambient accessory kits

MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8, 9	10	11	12
G	**H**	**5**	**S**	**A**	**N**	**4**	**18**	**0**	**0**	**A**
Brand Type	**OD Type**	**SEER2**	**OD Design Type**	**Major Series**	**Voltage**	**Refrigerant**	**Nominal Capacity**	**Feature**	**Special Feature**	**Region**
G = Entry	**H** = HP	**5** = 14.3 SEER2	**S** = Single-Stage	**A-Z** = Major Iteration	**N** = 208-230-1 or 208/230-1 **P** = 208-230-3 or 208/230-3 **E** = 460-3	**4** = R410A	**18** = 18,000 BTUH (1.5 Tons) **24** = 24,000 BTUH (2 Tons) **30** = 30,000 BTUH (2.5 Tons) **36** = 36,000 BTUH (3 Tons) **42** = 42,000 BTUH (3.5Tons) **48** = 48,000 BTUH (4 Tons) **60** = 60,000 BTUH (5 Tons)	**0** = Standard	**0** =Standard	A = Standard HP

Puron

AHRI CERTIFIED

Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program For verification of certification for individual products, go to www.ahridirectory.org.

Certified System

Quality ISO 9001

SAI GLOBAL

C UL US

ENERGY STAR

Tested AHRI Combination Ratings

NOTE: Ratings contained in this document are subject to change at any time.

For AHRI ratings certificates, please refer to the AHRI directory www.ahridirectory.org

Additional ratings and system combinations can be accessed via the Ratings Database here: www.MyCarrierRatings.com

CATALOG ORDERING NUMBERS

Size	Model Number
18	GH5SAN41800A
24 ← Units B, C, D and ADU Major	GH5SAN42400A
30	GH5SAN43000A
36	GH5SAN43600A
42	GH5SAN44200A
48	GH5SAN44800A
60	GH5SAN46000A

Standard Features

Feature	18	24	30	36	42	48	60
Puron Refrigerant	X	X	X	X	X	X	X
Scroll Compressor	X	X	X	X	X	X	X
Field Installed Filter Drier	X	X	X	X	X	X	X
Front Seating Service Valves	X	X	X	X	X	X	X
Internal Pressure Relief Valve	X	X	X	X	X	X	X
Internal Thermal Overload	X	X	X	X	X	X	X
Long Line capability	X	X	X	X	X	X	X
Low Ambient capability with Kit	X	X	X	X	X	X	X
Suction Line Accumulator	X	X	X	X	X	X	X
Loss of Charge Switch	X	X	X	X	X	X	X

X = Standard

Units B, C, D + ADU Major

Physical Data

Unit Size	18	24	30	36	42	48	60
Compressor Type	Scroll						
Refrigerant							
Control	TXV (Hard Shutoff)						
Charge (lb)	5.9	6.3	9.0	9.0	9.9	10.8	13.7
Outdoor Htg. Piston #	42	46	52	57	61	65	76
Cond Fan	Forward Swept or Propeller Type, Direct Drive						
Air Discharge	Vertical						
Air Qty (CFM)	2346	2652	2652	3550	3716	3716	4779
Motor HP	1/12	1/10	1/10	1/4	1/4	1/4	1/4
Motor RPM	800	825	825	825	1110	1110	825
Cond Coil							
Face Area (Sq ft)	15.0	17.2	15.0	15.0	17.2	19.3	25.1
Fins per In.	20	20	20	20	20	20	20
Rows	1	1	2	2	2	2	2
Circuits	6	6	7	7	10	12	12
Valve Connect (In. ID)							
Vapor	5/8	5/8	3/4	3/4	7/8	7/8	7/8
Liquid	3/8"						
Refrigerant Tubes* **(In. OD)**							
Rated Vapor† (0-80 Ft Tube Length)	5/8	5/8	3/4	3/4	7/8	7/8	1 1/8
Rated Liquid Line‡ (0-80 Ft Tube Length)	3/8"						

*. For 15 ft. lineset
†. Units are rated with 25 ft (7.6 m) of lineset length. See Vapor Line Sizing and Cooling Capacity Loss table when using other sizes and lengths of lineset.
‡. See Liquid Line Sizing For Cooling Only Systems with Refrigerant tables.
Note: See unit Installation Instruction for proper installation.

Vapor Line Sizing and Cooling Capacity Loss

Acceptable vapor line diameters provide adequate oil return to the compressor while avoiding excessive capacity loss. The suction line diameters shown in the chart below are acceptable for HP systems with Puron® refrigerant:

Vapor Line Sizing and Cooling Capacity Losses - Puron® Refrigerant 1- Stage Heat Pump Applications

Unit Nominal Size (Btuh)	Acceptable Vapor Line Diameters (In. OD)	Cooling Capacity Loss (%) Total Equivalent Line Length (ft)										
		Standard Application				Long Line Application Requires Accessories						
		25 (7.62)	50 (15.2)	80 (24.4)	80+ (24.4+)	100 (30.48)	125 (38.10)	150 (45.72)	175 (53.34)	200 (60.96)	225 (68.58)	250 (76.20)
18,000	1/2	1	2	3	3	4	6	7	8	9	10	12
	5/8	0	0	1	1	1	1	2	2	3	3	3
24,000	5/8	0	1	1	1	2	3	3	4	4	5	6
	3/4	0	0	0	0	0	1	1	1	1	1	2
30,000	5/8	1	2	3	3	3	4	5	6	7	8	9
	3/4	0	0	1	1	1	1	2	2	2	3	3
	7/8	0	0	0	0	0	1	1	1	1	1	1
36,000	5/8	1	2	4	4	5	6	7	9	10	11	13
	3/4	0	0	1	1	1	2	2	3	3	4	4
	7/8	0	0	0	0	0	1	1	1	1	2	2
42,000	3/4	0	1	2	2	2	3	4	4	5	6	6
	7/8	0	0	1	1	1	1	2	2	2	3	3
48,000	3/4	0	1	2	2	3	4	5	5	6	7	8
	7/8	0	0	1	1	1	2	2	2	3	3	4
60,000	3/4	1	2	4	4	5	6	7	9	10	11	12
	7/8	0	1	2	2	2	3	4	4	5	5	6
	1 1/8	0	0	0	0	1	1	1	1	1	1	2

Standard Length = 80 ft. (24.4 m) or less total equivalent length

Applications in this area are long line. Accessories are required as shown recommended on Long Line Application Guidelines

Applications in this area may have height restrictions that limit allowable total equivalent length, when outdoor unit is below indoor unit See Long Line Application Guidelines

Units B, C, D and ADU Major

Electrical Data

UNIT SIZE	V/PH	OPER VOLTS*		COMPR		FAN	MCA	MAX FUSE† or CKT BRK AMPS
		MAX	MIN	LRA	RLA	FLA		
18	208-230-1	253	197	45.7	10.3	0.50	13.4	20
24				59.5	11.1	0.60	14.5	25
30				67.9	14.1	0.60	18.2	30
36				83.1	15.3	1.20	20.3	30
42				110.0	18.6	1.40	24.7	40
48				120.0	25.0	1.52	32.8	50
60				150.0	25.6	1.20	33.2	50

*. Permissible limits of the voltage range at which the unit will operate satisfactorily
†. Time-Delay fuse.

FLA—Full Load Amps
LRA—Locked Rotor Amps
MCA—Minimum Circuit Amps
RLA—Rated Load Amps
NOTE: Control circuit is 24-V on all units and requires external power source. Copper wire must be used from service disconnect to unit.
All motors/compressors contain internal overload protection.
Complies with requirements of ASHRAE Standards 90.1
Short Circuit Current Rating (SCCR): 5kA rms

Sound Power Level Without Sound Hood

UNIT SIZE	STANDARD RATING (dBA)	TYPICAL OCTAVE BAND SPECTRUM (dB, without tone adjustment)						
		125	250	500	1000	2000	4000	8000
18	71	70.2	66.4	65.1	67.4	62.8	58.2	52.5
24	76	66.3	68.4	69.4	67.7	64.4	61.4	55.9
30	76	70.1	71.3	70.8	69.6	64.0	60.6	54.9
36	76	74.0	72.5	71.7	70.5	66.1	61.7	55.6
42	76	72.1	72.6	70.0	67.6	62.9	60.5	56.0
48	76	75.5	72.4	71.4	68.3	63.1	60.5	55.5
60	76	65.2	67.0	67.4	70.0	62.6	59.7	55.5

NOTE: Tested in compliance with AHRI 270 but not listed with AHRI.

Units B, C, D and ADU major

Sound Power Level With Sound Hood

UNIT SIZE	STANDARD RATING (dBA)	TYPICAL OCTAVE BAND SPECTRUM (dB, without tone adjustment)						
		125	250	500	1000	2000	4000	8000
18	69	70.6	66.2	64.8	65.7	61.2	57.5	51.3
24	74	66.7	68.1	68.7	66.5	63.1	60.0	53.1
30	74	71.4	70.5	70.5	68.3	63.4	60.3	53.5
36	74	74.7	72.7	71.8	68.6	64.3	59.0	51.6
42	74	72.8	73.7	70.3	67.3	62.6	59.8	53.4
48	74	76.3	71.9	71.0	68.1	62.9	60.0	53.9
60	73	65.4	67.5	67.5	68.8	61.5	58.5	52.9

NOTE: Tested in compliance with AHRI 270 but not listed with AHRI.

Units B, C, D and ADU major

Charging Subcooling (TXV-Type Expansion Device)

UNIT SIZE-VOLTAGE	REQUIRED SUBCOOLING °F (°C)
18	7 (3.9)
24	7 (3.9)
30	12 (6.7)
36	12 (6.7)
42	10 (5.6)
48	13 (7.2)
60	10 (5.6)

HP Only Replacement with Piston Indoors

This heat pump may only be installed with piston metered indoor units as replacement components in a piston system.

When installing a non-rated heat pump with a piston indoor unit, the correct piston must be installed, which should be listed in the indoor unit Installation Instructions or Product Data.

Replacement pistons can be ordered from Replacement Components (RC).

Dimensions

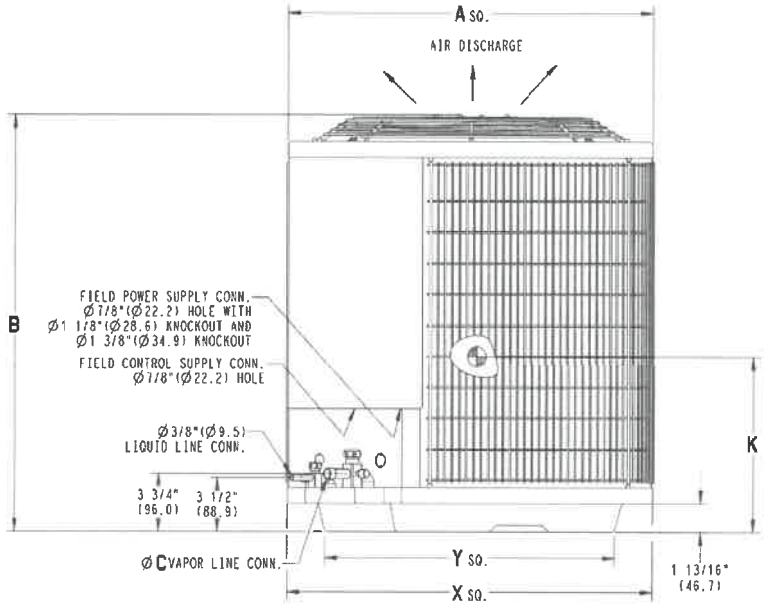
Units B, C, D and ADU major

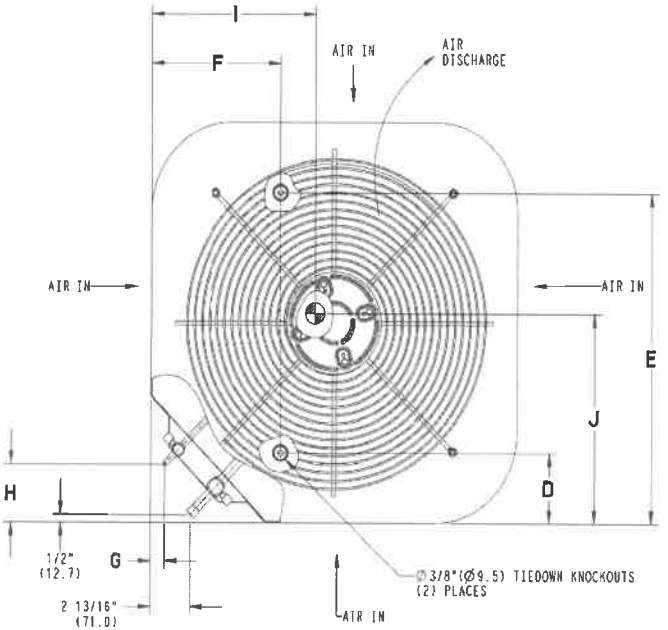
UNIT	SERIES	ELECTRICAL CHARACTERISTICS				A		B		C		D		E		F		G		H		I		J		K		OPERATING WEIGHT		SHIPPING WEIGHT		SHIPPING LENGTH / WIDTH (Sq.)		SHIPPING HEIGHT	
		208-230-1-60	208/230-3-60	460-3-60	575-3-60	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	Lbs	Kgs	Lbs	Kgs	INCH	MM	INCH	MM
GH5SA*41800A	A	Y	N	N	N	31 3/16	792.5	28 1/4	718.0	5/8	15.9	6 9/16	166.1	24 11/16	626.3	9 1/8	231.3	1 1/8	28.2	3 13/16	97.4	14 3/4	374.7	16 1/4	412.8	13 1/2	342.9	135	61.1	152	69.1	32 3/16	817.9	29 7/8	758.5
GH5SA*42400A	A	Y	N	N	N	31 3/16	792.5	31 11/16	804.3	5/8	15.9	6 9/16	166.1	24 11/16	626.3	9 1/8	231.3	1 1/8	28.2	3 13/16	97.4	13 3/4	349.3	14	355.6	14 1/2	368.3	153	69.6	173	78.4	32 3/16	817.9	33 1/4	844.9
GH5SA*43000A	A	Y	N	N	N	31 3/16	792.5	28 1/4	718.0	3/4	19.1	6 9/16	166.1	24 11/16	626.3	9 1/8	231.3	1 1/8	28.2	3 13/16	97.4	15 3/4	400.1	15 1/2	393.7	12 1/4	311.2	171	77.6	202	91.4	32 3/16	817.9	29 7/8	758.5
GH5SA*43600A	A	Y	N	N	N	31 3/16	792.5	28 1/4	718.0	3/4	19.1	6 9/16	166.1	24 11/16	626.3	9 1/8	231.3	1 1/8	28.2	3 13/16	97.4	14	355.6	14 1/2	368.3	12 1/2	317.5	173	78.4	190	86.4	32 3/16	817.9	29 7/8	758.5
GH5SA*44200A	A	Y	N	N	N	31 3/16	792.5	31 11/16	804.3	7/8	22.2	6 9/16	166.1	24 11/16	626.3	9 1/8	231.3	1 1/8	28.2	3 13/16	97.4	15 1/4	387.4	14 1/2	368.3	13 3/4	349.3	216	98.0	235	106.8	32 3/16	817.9	33 1/4	844.9
GH5SA*44800A	A	Y	N	N	N	31 3/16	792.5	35 1/16	890.7	7/8	22.2	6 9/16	166.1	24 11/16	626.3	9 1/8	231.3	1 1/8	28.2	3 13/16	97.4	15 1/4	387.4	15	381.0	14 3/4	374.7	222	100.7	242	109.6	32 3/16	817.9	36 11/16	931.3
GH5SA*46000A	A	Y	N	N	N	35	889.0	38 7/8	987.8	7/8	22.2	6 9/16	166.1	28 7/16	722.8	9 1/8	231.3	1 1/8	28.2	3 13/16	97.4	16 1/2	419.1	17 1/2	444.5	19	482.6	253	114.8	275	124.6	36	914.9	40 9/16	1030.4

Y=YES
N=NO

NOTES:

1. CENTER OF GRAVITY





UNIT SIZE	"X" MINIMUM GROUND MOUNTING PAD APPLICATION DIMENSIONS		"Y" MINIMUM ROOF-TOP MOUNTING PAD APPLICATION DIMENSIONS	
-	23 1/8	587.3	17 7/8	454.6
~~24~~	~~35 3/4~~	~~554.0~~	~~20 7/16~~	~~518.5~~
18,24,30,36,42,48	31 3/16	792.5	22 15/16	583.2
~~60~~	~~35~~	~~889.0~~	~~26 3/4~~	~~679.7~~

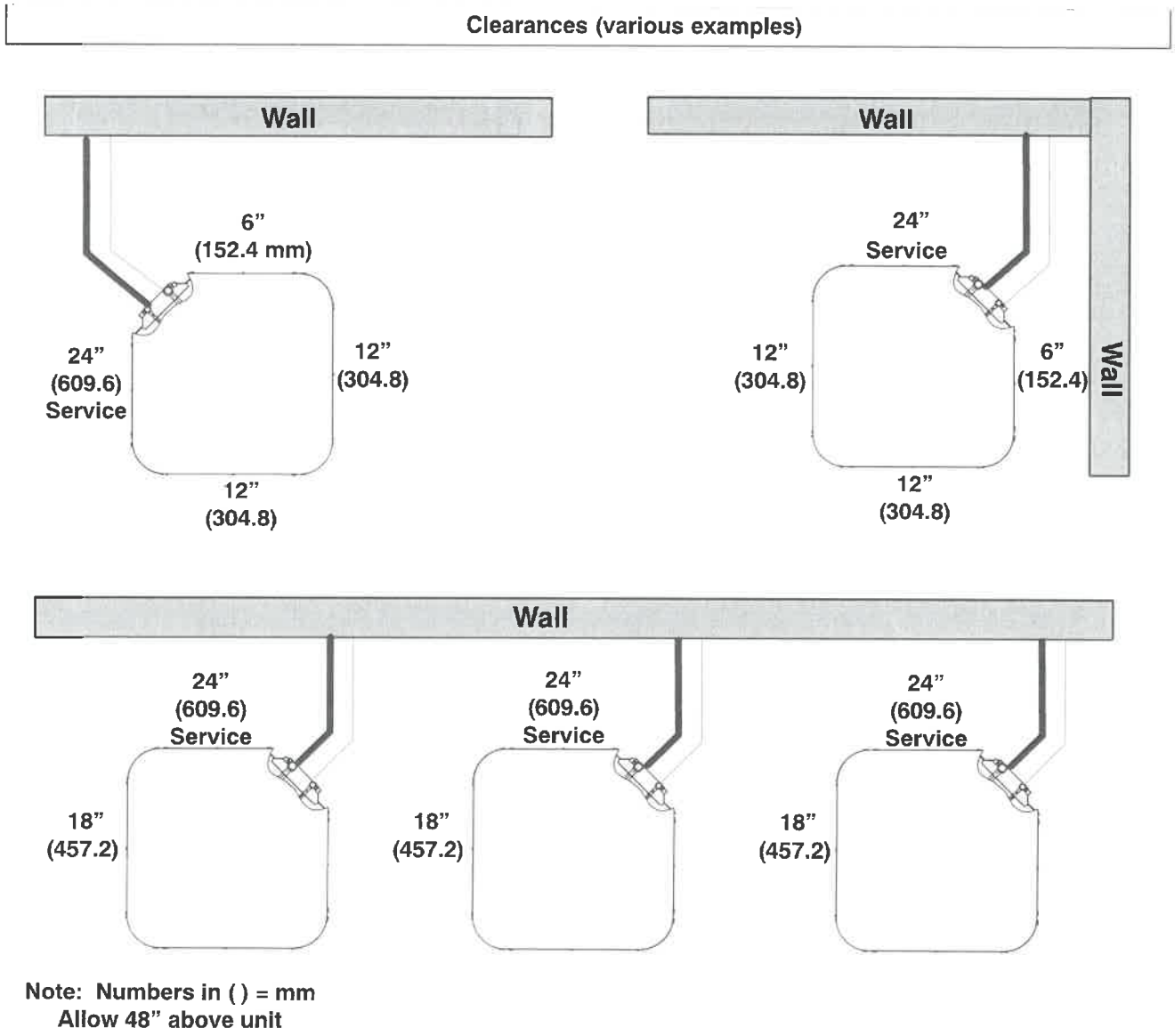
Units B, C, D and ADU major

NOTE: ALL DIMENSIONS IN INCH (MM)

U.S. ECCN: Not Subject to Regulation (N.S.R.)

SD5786-4 (1) REV. A

Clearances



Note: Numbers in ( ) = mm
Allow 48" above unit

IMPORTANT: When installing multiple units in an alcove, roof well, or partially enclosed area, ensure there is adequate ventilation to prevent re-circulation of discharge air.

Replica ADT data

Street Name	Highway	Length	Aadt	[AADT] Geography	Season
Spring Avenue	residential	27.18	986	Santa Clara County, CA	2023
West Dunne Avenue	tertiary	52.92	2826	Santa Clara County, CA	2023
Barnell Avenue	residential	116.63	619	Santa Clara County, CA	2023

Appendix C

Preliminary Stormwater Report

Stormwater Runoff Management Plan

For

LJ Commons

APN 767-12-012

Barnell Avenue, Morgan Hill, CA

November 3, 2023

Revised Date: 6-21-2024

Harren Properties, LLC

C/O Gabriel Conners

17045 Hill Road Morgan Hill, CA 95037

408-960-9113

Prepared by: Arman Nazemi, PE

MH Engineering Company

16075 Vineyard Blvd., Morgan Hill, CA

arman@mhengineering.com

831-779-7381 Ex. 233

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Drainage Report

Stormwater Control Measures Sizing Calculator (applicable Tier Results)

- Tier 2 Treatment
- Tier 2 Storage (if applicable)
- Tier 3 Retention (if applicable)

Drainage Management Areas (DMAs) map

Executed *Stormwater Best Management Practices, Operation, and Maintenance Agreement*

Executed Contract with a Third Party Engineer or QSP

BMP RAM Field Protocols

Performance Requirement checklist

I. Project Data

Table 1: Project Data

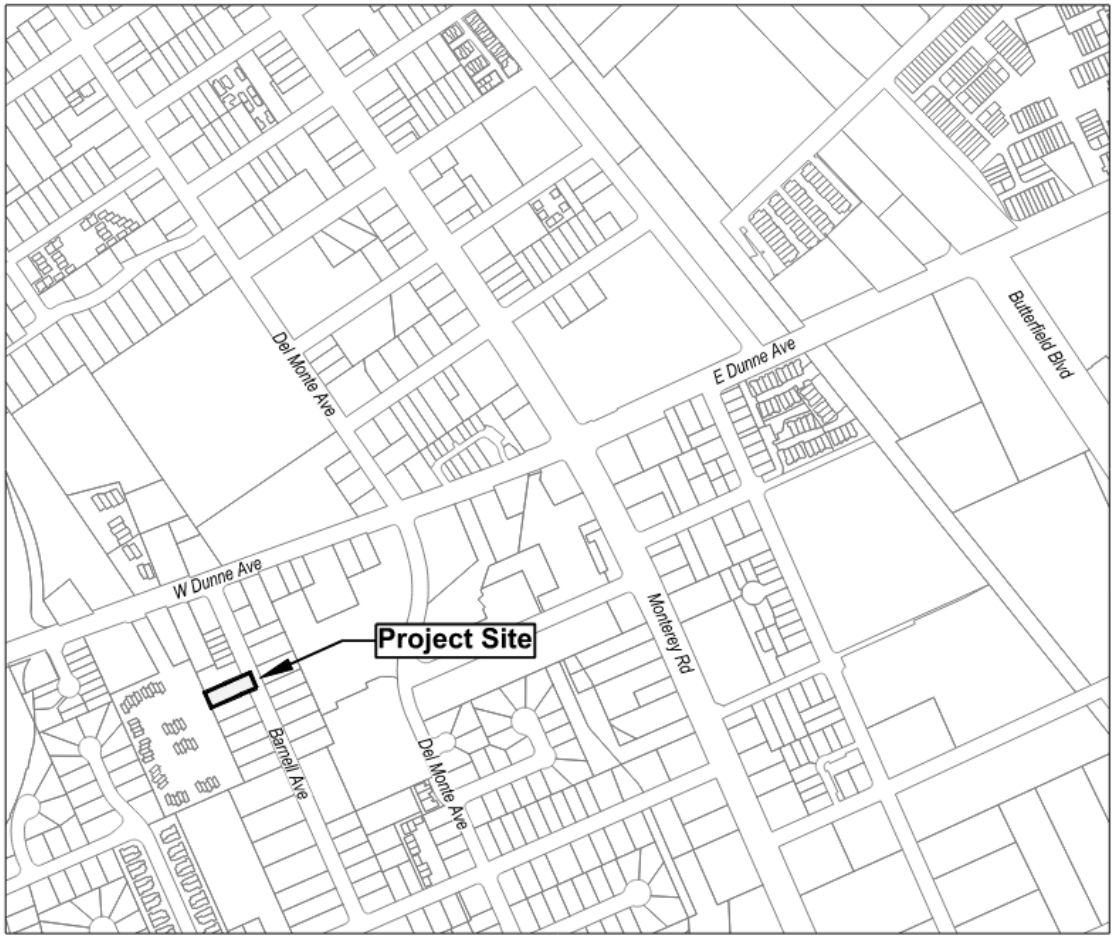
Project Name/Number	LJ Commons, Project No. 222100
Application Submittal Date	June 2023
Project Location	Barnell Avenue, or APN 767-012-012
Project Phase No.	Not Applicable
Project Type and Description	4-plex 2 story residential building apartment
Total Project Site Area (acres)	9,965 sf (0.23 acre)
Total New Impervious Surface Area	7,189 sf (0.17 acre)
Total Replaced Impervious Surface Area	0
Total Pre-Project Impervious Surface Area	0
Total Post-Project Impervious Surface Area	7,189 sf (0.17 acre)
Net Impervious Area (Exhibit shall be provided to justify net impervious area results)	7,189 sf (0.17 acre)
Watershed Management Zone(s)	Zone 1
Design Storm Frequency and Depth	25 year @ 5.24", 100 year @ 6.25"
Design Storm Frequency and Depth	85-percentile depth, 1.1 inches
Drainage Report Name	Storm water Pollution Prevention Plan, SWRMP

II. Setting

II.A. Project Location and Description

The project is located on Barnell Avenue in Morgan Hill within the residential zone. A two story 4-plex residential building including covered garages and parking areas is being proposed. The existing site is vacant with no building structures. The site is undeveloped covered with native grass. This project area is tributary to West Little Llagas creek that drains to Monterey Bay watershed. The Monterey Bay watershed falls under region 3 Central Coast regional Water Quality Control Board jurisdiction. Due to the size of the project being under 15,000 sf, the project will be subject to performance requirement No. 1 and 2. The project has minimized the disturbance to extend possible in compliance with Performance requirement No. 1. The site area is 9,965 sf and is only subject to Performance Requirements No. 2 for quality treatment. The project drainage report has quantified the site runoff volume subject to quality treatment for the 85-percentile storm event including the drawdown time.

Vicinity Map



II.B. Existing Site Features and Conditions

The project topography is generally flat with 1-2 percent gradient toward northeast. The current surface condition is unimproved with some growing vegetation or native grass. The project is surrounded by residential developments. Hydrologic soil groups is found to be clayey material on upper 1.5 to 3' upper soil and lean clay with sand and gravel below the top soil. The project percolation reveals high percolation between 14" to 27" per hour. High Seasonal Ground water is reported by Santa Clara County for this location to be found between 10 to 20 feet below ground surface. The email review received from the Santa Clara Valley Water is not concerned with the 10-foot buffer requirement with exfiltration of the underground tank if high seasonal ground water become less than 10 feet due to the nature of project being residential. Through the boring exploration ground water encountered at 20.5 feet depth in Boring Number 2. There were 4 boring logs at the site. No water encountered in other borings.

Due to small lot area, the drainage structure have been placed under ground for quality treatment and hydromodification to city latest adopted standards with exclusion of exfiltration for sizing the drainage structure as conservative measures. The proposed Storm Tech SC-740 ADS as underground storage tank has received trash capture basket

and 1' sump at every inlets for pre-treatment capturing trash and sediments prior to entering the underground storage tank. The option for bio-swales for surficial treatment has been avoided by geotechnical engineer recommendation due to the lack of 15 feet horizontal separation between the proposed and existing building structures. Instead, we have designed underground structures with pre-treatment structures to use SC-740 for hydromodifications and quality treatment.

Opportunities and Constraints for Stormwater Control

A 60 Inch diameter SD pipe crosses Barnell Avenue approximately 400 feet south of the project.

III. Low Impact Development Design Strategies

III.A. Optimization of Site Layout

III.A.1. Limitation of development envelope

The small lot acreage and the distance between the proposed building site and existing neighboring structures there is a limitation for surficial treatment such as bio-swales.

III.A.2. Preservation of natural drainage features

The disturbance has been minimized per the approved site layout to preserve native soil for landscape area.

III.A.3. Setbacks from creeks, wetlands, and riparian habitats

Not Applicable.

III.A.4. Minimization of imperviousness

The site layout has been conservative in preserving undisturbed areas for landscape.

III.A.5. Use of drainage as a design element

Due to small size lot, the drainage structure have been placed under ground for quality treatment and hydromodification to city latest adopted standards with exclusion of exfiltration for sizing the drainage structure as conservative measures.

III.B. Use of Permeable Pavements (self-treating areas)

Not Applicable.

III.C. Dispersal of Runoff to Pervious Areas (self-retaining areas)

Not Applicable

III.D. Stormwater Control Measures

Proposing SC-740 ADS underground storage tank with trash capture basket and sump at every inlets for pre-treatment capturing trash and sediment prior to entering the underground storage tank.

IV. Documentation of Drainage Design

IV.A. Drainage Management Area Characterization

The DMA numbers below correspond with DMA numbers of DMA exhibit. Each DMA has only one surface type. DMAs listed include all impervious surfaces and all vegetated areas except those designated as structural control measures (SCMs).

Pervious areas are further categorized as either self-treating or self-retaining areas.

- Areas designated as self-treating areas are undisturbed areas, or areas planted with native, drought-tolerant, or LID-appropriate vegetation and do not receive runoff from other areas.
- Areas designated as self-retaining are low-lying areas that receive runoff from adjoining areas. Site retaining areas may have natural vegetation, or be landscape, or may be porous pavements (where the soils underlying the porous pavements drain well enough to handle the additional run-on).

Summarize approach to managing different types of drainages.

Table 2: Table of Drainage Management Areas

DMA ID	Surface Type & description	Area (sf)	Drains to (provide DMA or SCM DMA ID)			Notable or exception characteristics or conditions
			Self-treating	Self-Retaining	SCM	
1	Building Roof, AC Parking & landscape	7,189	-	-	1	SC-740 Underground Storage Tank

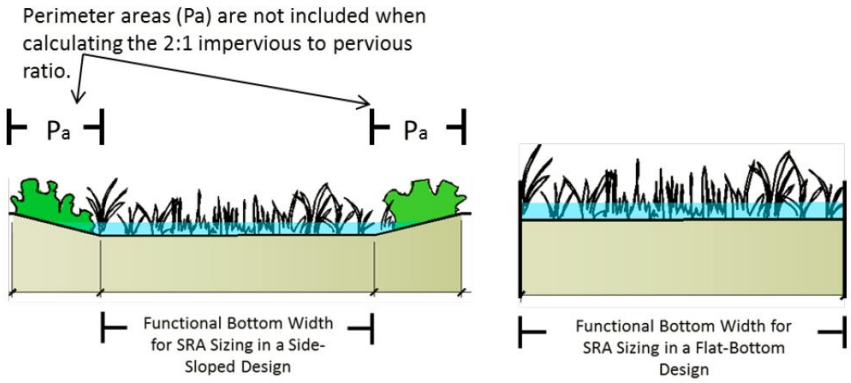
Table 3: Table of Runoff Reduction and Structural Control Measures

DMA ID	SCM	SCM TYPE	WATER QUALITY FLOW RATE (CFS) OR VOLUME REQUIRED (CF)	WATER QUALITY FLOW RATE (CFS) OR VOLUME PROVIDED (CF)
1	1	SC-740 UNDERGROUND STORAGE TANK	615 CF	1,014 CF

IV.B. Sizing Calculations

(Not Applicable) This design of bio-swale is subject to geotechnical constraints due to close to existing and proposed building structures.)

The pervious area listed below only includes the functional bottom width of the SRA in the receiving self-retaining DMA area column.



Based on Central Coast Post-Construction Requirements Implementation Guidance Series, Series Issue #1: The use of Self-Retaiing Areas to Support Post Construction Stormwater Control Compliance:

☐ 2:1 SRA Sizing is acceptable ☐ 2:1 SRA Sizing is Un-acceptable

The design storm (inches):

Saturated Soil Infiltration Rates (in/hr)

Table 4: Table of Areas Draining to Self-Retaining Area (**Not Applicable**)

[May substitute with output from Santa Barbara County Sizing Calculator]

DMA Name	Area (square feet)	Post-project surface type	Runoff factor	[A] Product (Area x runoff factor)	Receiving self-retaining DMA	[B] Receiving self-retaining DMA Area (square feet)	Ratio [A]/[B]

[Describe design of any non-vegetative SRAs here. For example, pervious pavers with storage to retain paver surface area plus assigned DMA run-on]

IV.B.1. Areas Draining to Bioretention Facilities (PCR 2 Projects)

Table 5: Table of LID Facility Sizing Calculation **(Not Applicable)**

V. Source Control Measures

V.A. Site activities and potential sources of pollutants

V.B. Source Control Table

Table 6: Source Control Table

	Pollutants Associated with Activity						
Potential Pollutant Source	Sediment/ Litter/ Debris	Nutrients/ Organic Matter	Bacteria	Hydro-carbons	Toxics/ Chemicals/ Paint	Other	Source Control BMP Proposed
Pets		X	X				Good housekeeping/ Illicit Discharge Control/Pet Waste Station
Parked Vehicles	X			X			Vehicle Maintenance, and cleaning Road & Parking area
Roads, Fertilizers, Pesticides, Storm Drains, Etc.	X			X	X		Regular upkeep of the infra structures

V.C. Features, Materials, and Methods of Construction of Source Control BMPs

VI. Stormwater Facility Maintenance

VI.A. Ownership and Responsibility for Maintenance in Perpetuity

This project trigger Performance Requirements 1, 2 are required to record a *Stormwater Best Management Practices, Operation, and Maintenance Agreement* with the City and incorporate language into the CC&Rs accepting responsibility for inspection, operation and

maintenance of facilities. Contact City staff for the Agreement. Include the executed Stormwater Agreement as an attachment.

Within the Stormwater Runoff Management Plan, Haren Properties, LLC, the responsible party's contact information, and proof of inspection services by a third-party Engineer or Qualified Stormwater Practitioner (QSP). See proof of inspection services with MH engineering Co. as the third-party Engineer/QSP with executed contract with Harren Properties, LLC .

VI.B. Summary of Maintenance Requirements for Each Stormwater Facility

The SC-740 underground storage tank and inlet sumps needs to be maintained and monitored on a regular basis per the BMP Maintenance checklist provided as part of this document.

BMP RAM Field Protocols can be found at

As stated in the *Stormwater Best Management Practices, Operation, and Maintenance Agreement*, the project shall submit two (2) annual inspections per year in perpetuity. One inspection is due every June and shall follow the instructions outlined in the *BMP RAM Field Protocols* (added as attachment). The second inspection shall be submitted every November and will include a certification from the Engineer or QSP verifying all SCM(s) are in working conditions. Maintenance shall be performed whenever the SCM(s) are in poor conditions as per the annual inspections, or regular maintenance.

VII. Construction Checklist

[Complete the first two columns in the checklist, listing each stormwater source control measure and SCM included in the project.]

Table 7 Construction Checklist Table

SWCP Page No.	Structural Control Measure SCMs	Plan Sheet No.	SCM Detail No.
C5 of 5	ADS Storm Tech SC-740	C5 of 5	SCM No. 1

VIII. Certifications

The design of stormwater treatment facilities and other stormwater pollution control measures in this plan are in accordance with the Post-Construction Stormwater Management Resolution R3-2013-0032 and the current edition of the City's LID and Post-Construction Requirements Handbook.

Drainage Report

For

LJ Commons

We have used city of Morgan Hill drainage standrds for rainfall

APN 767-12-012

Barnell Avenue, Morgan Hill, CA

December 20, 2023
Revised Dtae: 6/24/2024

Haren Properties, LLC
C/O Gabriel Conners
17045 Hill Road Morgan Hill, CA 95037
408-960-9113

Prepared by: Arman Nazemi, PE
MH Engineering Company
16075 Vineyard Blvd., Morgan Hill, CA
arman@mhengineering.com
831-779-7381 Ex. 233

Project: **Lands of Murray**
Project No.: **222100**
Date: **6/24/2024**

Project Description:
This project includes a 4 plex building for residential use as shown on the APN 767-12-012. The project is located on Barnell Avenue. The existing site drains generally to the east. Due to site small size acreage and multiple utilities crossings, the site is designed with one DMA that encompass the entire project runoff. The project proposes ADS StormTech SC-740 underground retention facility. Due to close vicinity to neighboring structures to the north bio-swale is not a viobale solution. The quality treatment is achieved first through pre-treatment by 12" sump inside the inlet leading to underground structure to collect sediment and trash prior entering the SC-740 undergrournd facility for final infiltaration. In case of overflow we have placed a 15" SD line along Barnell Avenue that connect to existing 24" Public storm drain line south of the project.The project site infiltration rate is determined to be 4.2 inches per hour after conversion the percolation test results into infiltration by using Porchet Method. We have used 2.1 inch per hour after applying the safety factor of 2 in order to determine the final drawdown. The proposed underground system is a retention facility that handle up to 100 year storm event. The hydro-modification per City of Morgan Hill standard is achieved mostly through provided storage and site exfiltration. Due to the size of the project being under 15,000 sf the project is only subject to Tier 1 & 2 requirements. The project is also in compliance with City of Morgan Hill latest adopted hydromodification requirements excluding the exfiltration from storage calculations per city guidelines. The proposed SC-740 underground storage tank will handle the tier 2 performance requirements for quality via infiltration. The drawdown time within 100 year storm event occurs at 14.89 hours after storm subside. The project is part of the West Little Llagas creek part of the Monterey Bay Watershed under Region 3 Central Coast Regional Water Quality Control Board jurisdiction for stormwater compliance.
We have used city of Morgan Hill drainage standrds for rainfall data in determining the project drainage impact and and the proposed mitigations. Using the rainfall data we have also met the hydromodification requirements per city requirements by limiting the post development runoff to pre-development level or less. Please see at the page No. 24 of 28 drainage report table showing the camparison between pre and post development

Project: Lands of Murray
Project No.: 222100
Date: 6/24/2024

Attachment D:
Quality Treatment Calculations

In order to determine the PCR-2 quality treatment, for comparison purposes both CASQA section II.B.Volume-Based Treatment Measures and 85 percentile methods were used. This has resulted to 878 cubic feet for water treatment per CASQA method and 615 cf per 85 percentile method. Although the project provides a total of 1,014 cf exceeding the required volume for both methods. See following calculation.

LJ Commons

Section II. Sizing for Volume-Based Treatment Measures, continued

Section II.B. — Sizing Volume-Based Treatment Measures based on the Adapted CASQA Stormwater BMP Handbook Approach

The equation that will be used to size the BMP is:

BMP Volume = (Correction Factor) × (Unit Storage) × (Drainage Area to the BMP)

Step 1. Determine the drainage area for the BMP, A = 0.27 acres

Step 2. Determine percent imperviousness of the drainage area:

a. Estimate the amount of impervious surface (rooftops, hardscape, streets, and sidewalks, etc.) in the area draining to the BMP: 0.197 acres

b. % impervious area=(amount of impervious area/drainage area for the BMP) × 100
% impervious area= **(Step 2.a/Step 1)** × 100
% impervious area= 73 %

Step 3. Find the mean annual precipitation at the site (MAP_{site}). To do so, estimate where the site is on Figure B-1 and estimate the mean annual precipitation in inches from the rain line (isopleth) nearest to the project site.[6] Interpolate between isopleths if necessary.

MAP_{site} = 21 inches

Step 4. Identify the reference rain gage closest to the project site from Table B-2b and record the MAP_{gage}:

MAP_{gage} = 19.5 inches

Table B-2b: Precipitation Data for Three Reference Gages

Reference Rain Gages	Mean Annual Precipitation (MAP_{gage}) (in)
San Jose Airport	13.9
Palo Alto	13.7
Morgan Hill	19.5

[6] Check with the local municipality to determine if more detailed maps are available for locating the site and estimating MAP.

SANTA CLARA VALLEY URBAN RUNOFF POLLUTION PREVENTION PROGRAM

Section II. Sizing for Volume-Based Treatment Measures, continued

Section II.B. —Adapted CASQA Stormwater BMP Handbook Approach (continued)

Step 5 Determine the rain gage correction factor for the precipitation at the site using the information from **Step 3** and **Step 4**.

Correction Factor = MAP_{site} (**Step 3**)/MAP_{gage} (**Step 4**)

Correction Factor = 1.08

Step 6. Identify the representative soil type for the BMP drainage area.

a) Identify from Figure B-1 or from site soils data, the soil type that is representative of the pervious portion of the project shown here in order of increasing infiltration capability:

____ Clay (D) ____ Sandy Clay (D) _X_ Clay Loam (D)

____ Silt Loam/Loam (B) ____ Not Applicable (100% Impervious)

b) Does the site planning allow for protection of natural areas and associated vegetation and soils so that the soils outside the building footprint are not graded/compacted? Y (Y/N)

If your answer is no, and the soil will be compacted during site preparation and grading, the soil's infiltration ability will be decreased. Modify your answer to a soil with a lower infiltration rate (e.g., Silt Loam to Clay Loam or Clay).

Modified soil type: NA

7. Determine the average slope for the drainage area for the BMP: 3 %

8. Determine the unit basin storage volume from sizing curves.

a) Slope ≤ 1%

Use the figure entitled "Unit Basin Volume for 80% Capture, 1% Slope" corresponding to the nearest rain gage: Figure B-2, B-3, or B-4 for San Jose, Palo Alto, or Morgan Hill, respectively. Find the percent imperviousness of the drainage area (see answer to **Step 2**, above) on the x-axis. From there, find the line corresponding to the soil type (from **Step 6**), and obtain the unit basin storage on the y-axis.

Unit Basin Storage for 1% slope ($UBS_{1\%}$) = 0.80 (inches)

b) Slope ≥ 15%

Use the figure entitled "Unit Basin Volume for 80% Capture, 15% Slope" corresponding to the nearest rain gage: Figure B-5, B-6, or B-7 for San Jose, Palo Alto, or Morgan Hill, respectively. Find the percent imperviousness of the drainage area (see answer to **Step 2**, above) on the x-axis. From there, find the line corresponding to the soil type (from **Step 6**), and obtain the unit basin storage on the y-axis.

Unit Basin Storage for 15% slope ($UBS_{15\%}$) = 0.82 (inches)

B-8 Appendix B

C.3 STORMWATER HANDBOOK

Section II. Sizing for Volume-Based Treatment Measures, continued

Section II.B. —Adapted CASQA Stormwater BMP Handbook Approach (continued)

c) Slope > 1% and < 15%

Find the unit basin volumes for 1% and 15% using the techniques in **Steps 8.a** and **8.b** and interpolate by applying a slope correction factor per the following formula:

$UBS_x = UBS_{1\%} + (UBS_{15\%} - UBS_{1\%}) \times (X\%-1\%) / (15\% -1\%)$
$= (\textbf{Step 8a}) + (\textbf{Step 8b- Step 8a}) \times (X\%-1\%)/(15\%-1\%)$

Where UBS_x = Unit Basin Storage volume for drainage area of intermediate slope, X %

Unit Basin Storage volume (UBS_x) = 0.83 (inches)
(corrected for slope of site)

9. Determine the BMP Design Volume, using the following equation:

Design Volume = Rain Gage Correction Factor × Unit Basin Storage Volume × Drainage Area

Design Volume = (**Step 5**) × (**Step 8**) × (**Step 1**) × 1 foot/12 inch

Design Volume = 0.020 acre-feet or 878 Ft^3

The quality treatment incorporate the entire site plus the half roadway frontage that is subject to grind and overlay and the potential run-on from the westerly fenceline. The StormTech SC-740 provides adequate infiltration foot print and storage volume that exceeds the volume base calculated 878 cf calculated by CASQA method and 615 cf determined by 85 percentile rain fall for quality treatment. the result shows the provided treatment far exceed the required by both methods. See both calculations below.

Proposed underground volume (CASQA):
SC- 740 Available storage: 741 cf from summary table
Total discarded volume by Infiltration:
1.1 inch/0.2 inch/hr. = 5.5 hour
infiltration area: 7.25 ft X 39.25 ft = 284.35 sf
5.5 Hours x 2.1 inch/hr. (1ft/12in) X 284.35 sf = 273.7 cf
Total provided storage; 273.7 cf + 741 cf = 1,014 cf > 878 cf OK
Draw Down time: 741 cf / (284.35)(2.1"/hr.)(1ft/12in)= 14.89 Hours < 48 hours Ok

Note: The table below is the calculated potential flow and volume of run-on from the westerly fence that is incorporated into quality and sizing the underground storage volume.

Event	Inflow (cfs)	Elevation (feet)	Storage (cubic-feet)
95%	0.00	345.16	31
2	0.00	345.39	77
5	0.01	345.64	127
10	0.01	345.86	172
25	0.01	346.20	239
50	0.01	346.48	296
100	**0.02**	**346.78**	**356**

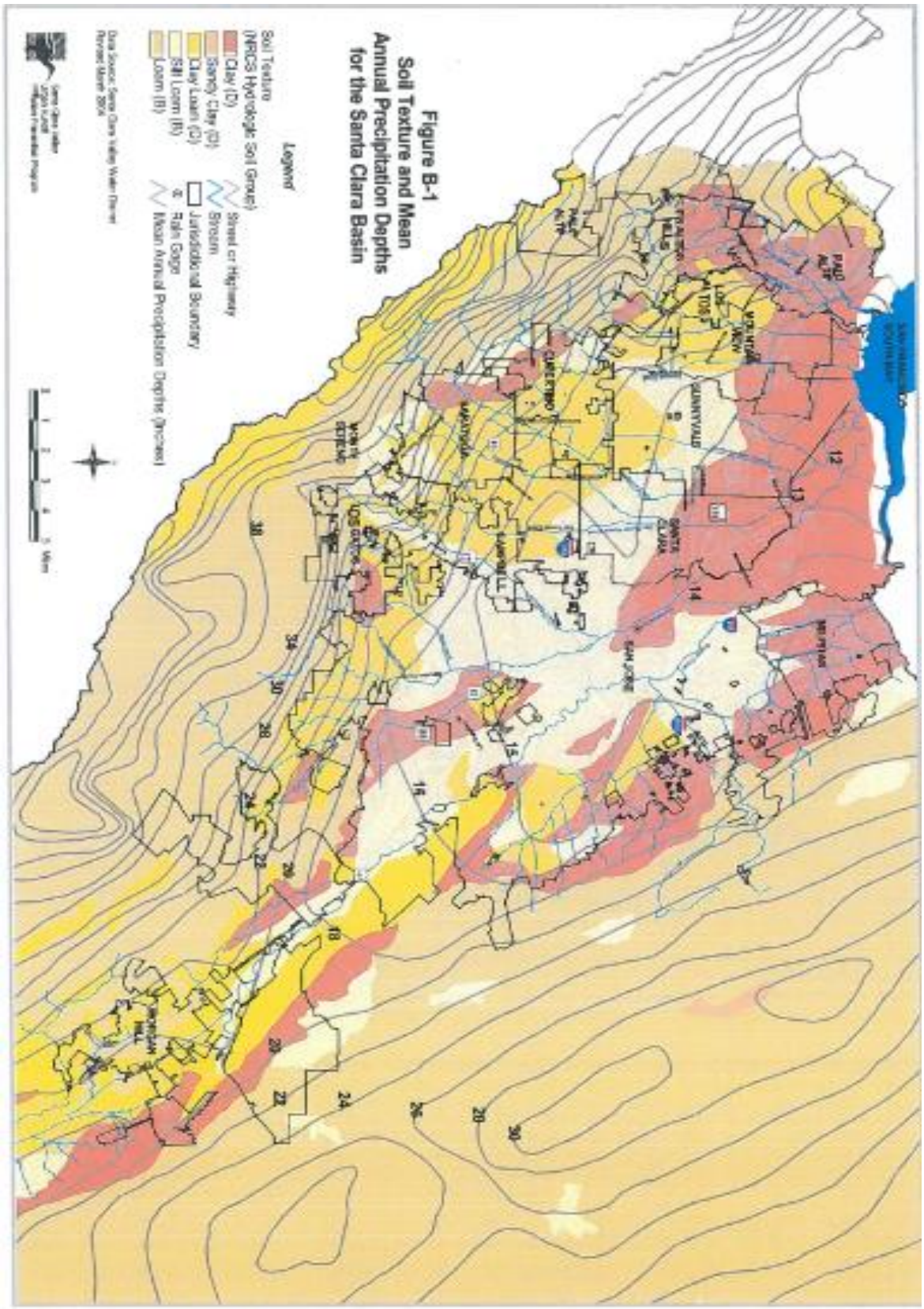


Figure B-1
Soil Texture and Mean
Annual Precipitation Depths
for the Santa Clara Basin
Legend
Soil Texture
(NRCS Hydrologic Soil Group)
Clay (D)
Stream
Jurisdictional Boundary
Rain Gage
Mean Annual Precipitation Depths (inches)
Clay Loam (D)
Silt Loam (B)
Loam (B)
Santa Clara Valley Water District
Revised March 2004
SANTA CLARA
SAN JOSE
MILPITAS
SUNNYVALE
CUPERTINO
LOS GATOS
MORGAN HILL
PALO ALTO
MOUNTAIN VIEW
LOS ALTOS
LOS ALTOS HILLS
MONTE SERENO
SARATOGA

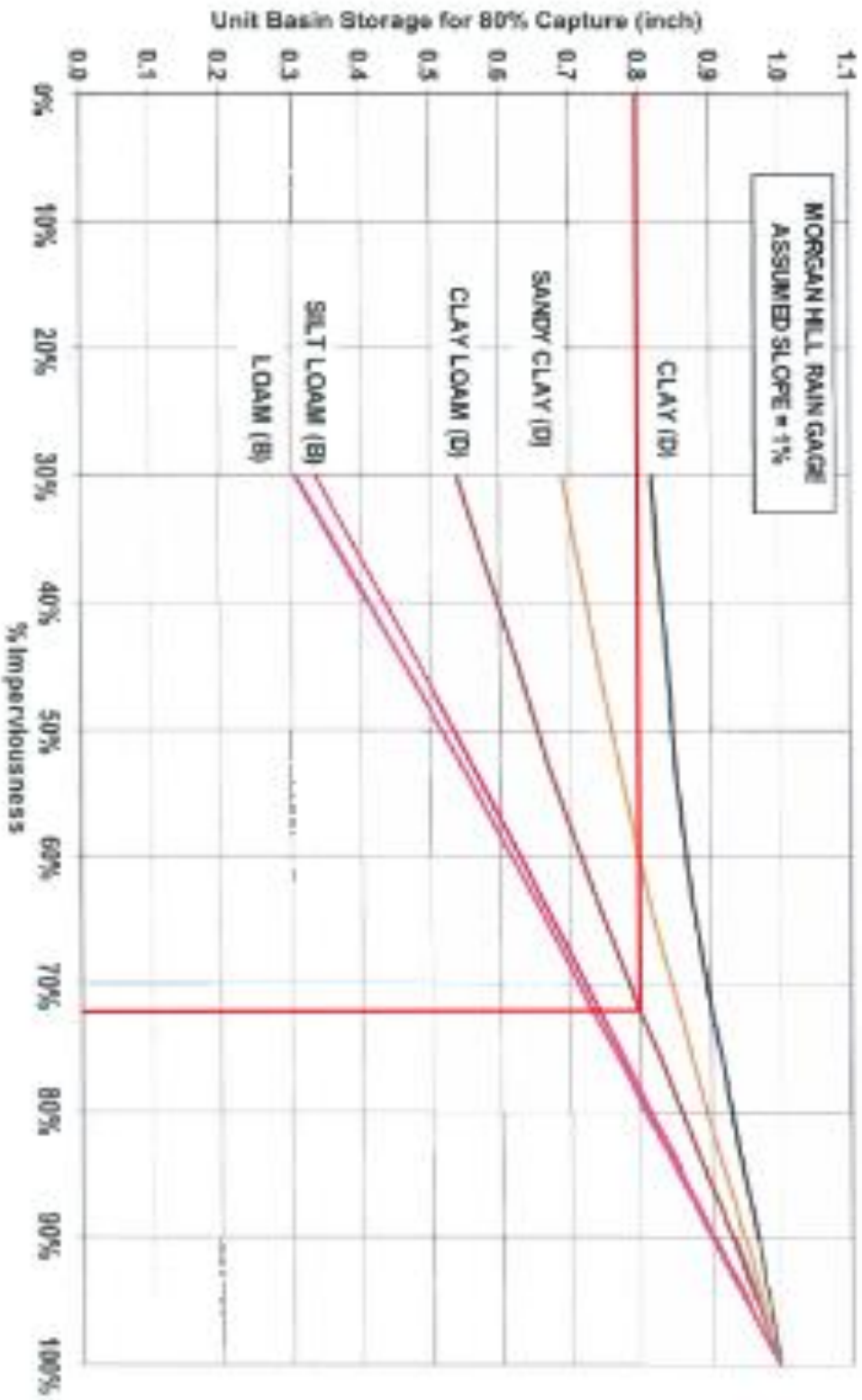


Figure B-4 Unit Basin Volume for 80% Capture - Morgan Hill Rain Gage

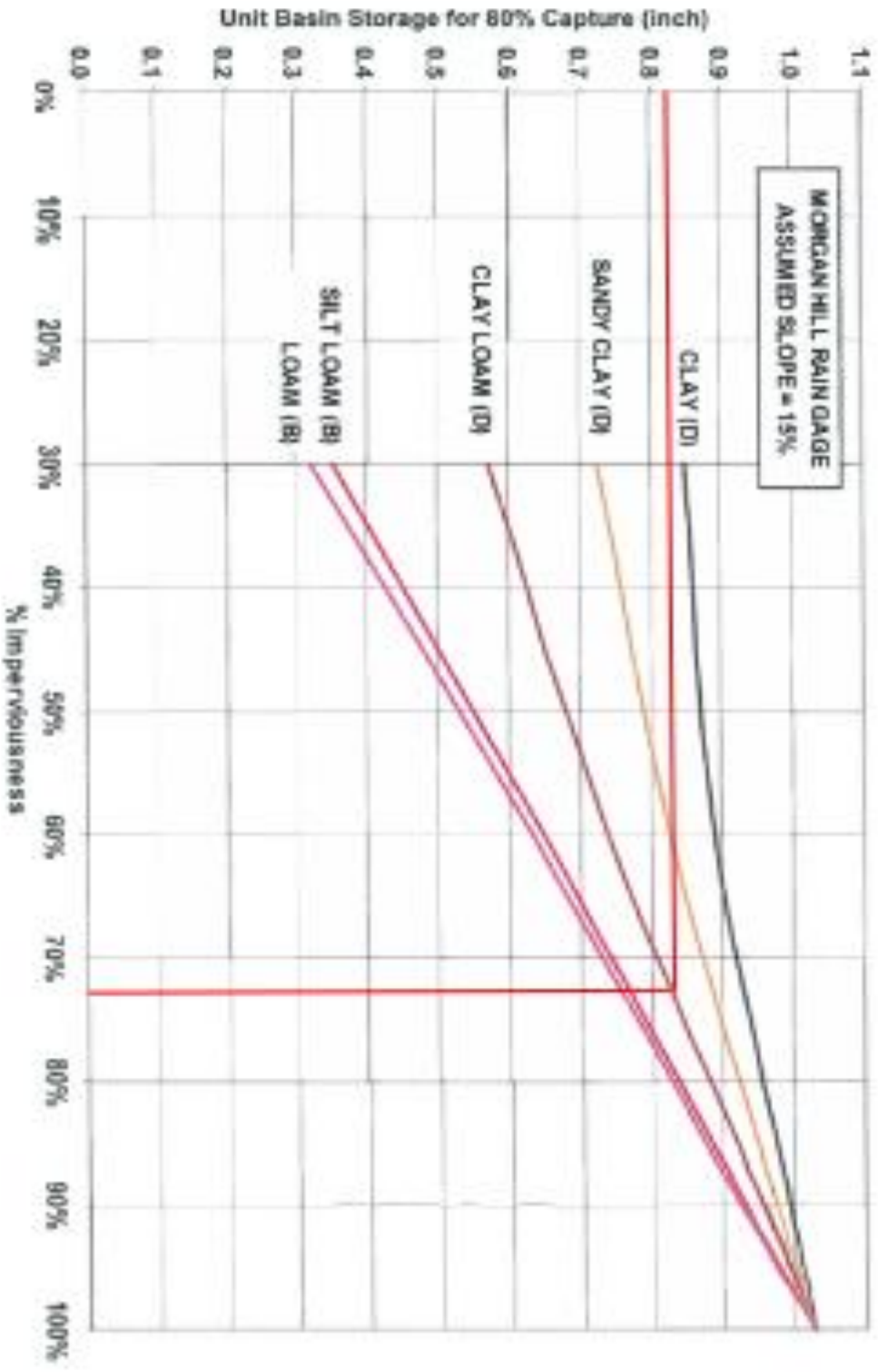


Figure B-7 Unit Basin Volume for 80% Capture - Morgan Hill Rain Gage

Quality Treatment Calculations

i = fraction of the tributary area that is impervious = $A_{impervious}$ / A_{area} I = 0.78
$C_{area\#}$ = Area runoff coefficient=C = $0.858i^3 - 0.78i^2 + 0.774i + 0.04$ C = 0.57

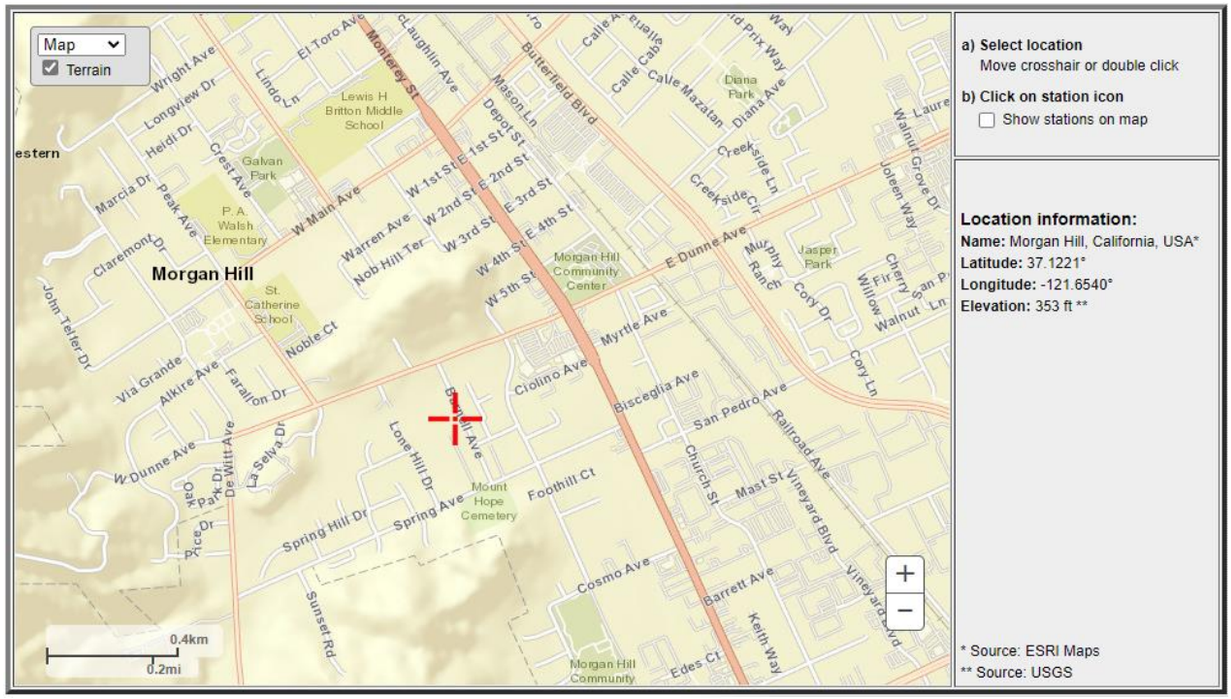
85 percentile method: Project is located within 1.1" of 24 hour rain
Area: DMA No. 1 (9,965 sf) + DMA No. 2 (1,861 sf) = 11,826 sf or 0.27 acre
The calculated volume for treatment will be:
1.1 in X 0.57 X 0.27 Ac X 1ft /12 in = 615 cf required treatment in 24 hours
SC- 740 Available storage: 741 cf from summary table
Total discarded volume by Infiltration:
1.1 inch/0.2 inch/hr. = 5.5 hour
infiltration area: 7.25 ft X 39.25 ft = 284.35 sf
5.5 Hours x 2.1 inch/hr. (1ft/12in) X 284.35 sf = 273.9 cf
Total provided storage; 273.9 cf + 741 cf = 1,014 cf > 615 cf OK
Draw Down time: 741 cf / (284.35)(2.1"/hr.)(1ft/12in)= 14.89 Hours < 48 hours Ok

Project: Lands of Murray
Project No.: 222100
Date: 6/24/2024

Attachment D:
Rainfall Data

Project: Lands of Murray
Project No.: 222100
Date: 6/24/2024

Rainfall Data



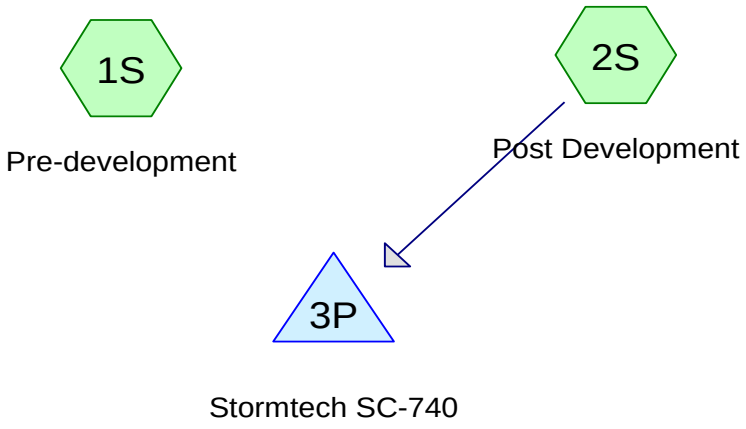
City Of Morgan Hill Rainfall Data standrads

View/Edit Rainfall Events

#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC	Status
	95%	SCVWD 1956 Storm		Default	24.00	1	1.80	2	OK
	2	SCVWD 1956 Storm		Default	24.00	1	3.09	2	OK
	5	SCVWD 1956 Storm		Default	24.00	1	3.85	2	OK
	10	SCVWD 1956 Storm		Default	24.00	1	4.42	2	OK
	25	SCVWD 1956 Storm		Default	24.00	1	5.24	2	OK
	50	SCVWD 1956 Storm		Default	24.00	1	6.11	2	OK
	100	SCVWD 1956 Storm		Default	24.00	1	6.50	2	OK

Project: Lands of Murray
Project No.: 222100
Date: 6/24/2024

Attachment F:
HydroCAD Modeling Output



Events for Subcatchment 1S: Pre-development

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
95%	1.80	0.04	0.016	0.86
2	3.09	0.07	0.038	1.98
5	3.85	0.10	0.051	2.68
10	4.42	0.11	0.061	3.22
25	5.24	0.14	0.076	4.00
50	6.11	0.16	0.092	4.84
100	**6.50**	**0.17**	**0.100**	**5.22**

Events for Subcatchment 2S: Post Development

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
95%	1.80	0.04	0.022	1.13
2	3.09	0.08	0.045	2.34
5	3.85	0.10	0.059	3.07
10	4.42	0.12	0.069	3.63
25	5.24	0.14	0.085	4.43
50	6.11	0.17	0.101	5.29
100	**6.50**	**0.18**	**0.108**	**5.68**

Summary for Subcatchment 1S: Pre-development

Runoff = 0.17 cfs @ 18.14 hrs, Volume= 0.100 af, Depth= 5.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.25-72.00 hrs, dt= 0.01 hrs
SCVWD 1956 Storm 100 Rainfall=6.50"

Area (sf)	CN	Description
9,965	89	<50% Grass cover, Poor, HSG D
9,965		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, pre-dev time of concentration**

Events for Pond 3P: Stormtech SC-740

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
95%	0.04	0.04	348.39	544
2	0.08	0.07	348.52	581
5	0.10	0.10	348.59	601
10	0.12	0.11	348.65	617
25	0.14	0.13	348.74	644
50	0.17	0.15	348.85	673
100	**0.18**	**0.16**	**348.91**	**687**

Summary for Subcatchment 2S: Post Development

Runoff = 0.18 cfs @ 18.12 hrs, Volume= 0.108 af, Depth= 5.68"
Routed to Pond 3P : Stormtech SC-740

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.25-72.00 hrs, dt= 0.01 hrs
SCVWD 1956 Storm 100 Rainfall=6.50"

Area (sf)	CN	Description
7,189	98	Water Surface, HSG D
2,776	79	50-75% Grass cover, Fair, HSG C
9,965	93	Weighted Average
2,776		27.86% Pervious Area
7,189		72.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, post-dev time of concentration**

Summary for Pond 3P: Stormtech SC-740

Inflow Area = 0.229 ac, 72.14% Impervious, Inflow Depth = 5.68" for 100 event
Inflow = 0.18 cfs @ 18.12 hrs, Volume= 0.108 af
Outflow = 0.16 cfs @ 18.36 hrs, Volume= 0.097 af, Atten= 10%, Lag= 14.4 min
Primary = 0.16 cfs @ 18.36 hrs, Volume= 0.097 af

Routing by Stor-Ind method, Time Span= 0.25-72.00 hrs, dt= 0.01 hrs
Peak Elev= 348.91' @ 18.36 hrs Surf.Area= 383 sf Storage= 687 cf

Plug-Flow detention time= 143.5 min calculated for 0.097 af (89% of inflow)
Center-of-Mass det. time= 87.9 min (987.0 - 899.0)

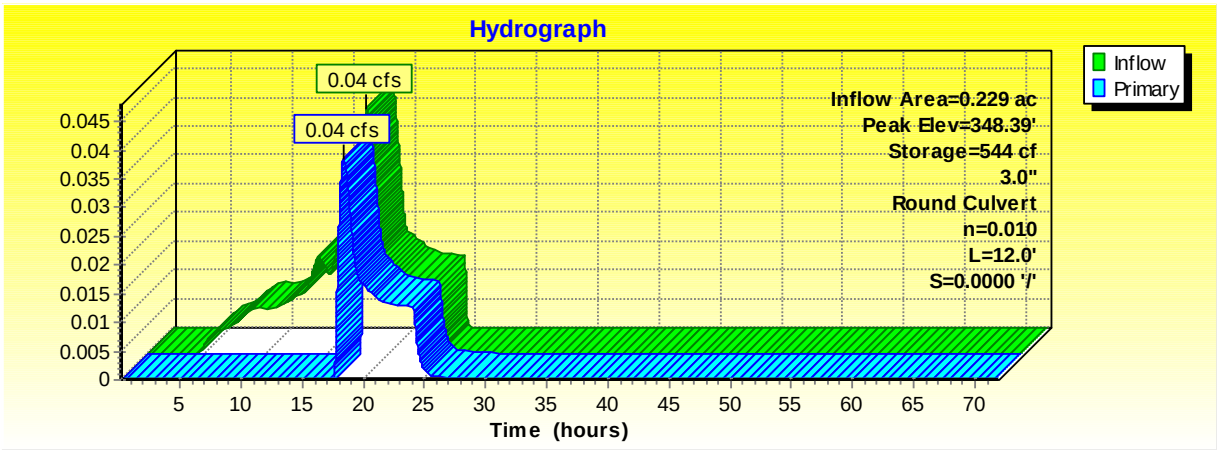
Volume	Invert	Avail.Storage	Storage Description
#1A	345.00'	391 cf	**7.25'W x 39.22'L x 4.25'H Field A** 1,208 cf Overall - 230 cf Embedded = 979 cf x 40.0% Voids
#2A	345.75'	230 cf	**ADS_StormTech SC-740 +Cap** x 5 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
#3	348.02'	103 cf	**8.0" Round 8" Pipe Storage (Branch 1)** L= 295.0' S= 0.0020 '/'
#4	348.09'	17 cf	**8.0" Round 8" Pipe Storage (Branch 2)** L= 48.0' S= 0.0020 '/'
		741 cf	Total Available Storage

Storage Group A created with Chamber Wizard

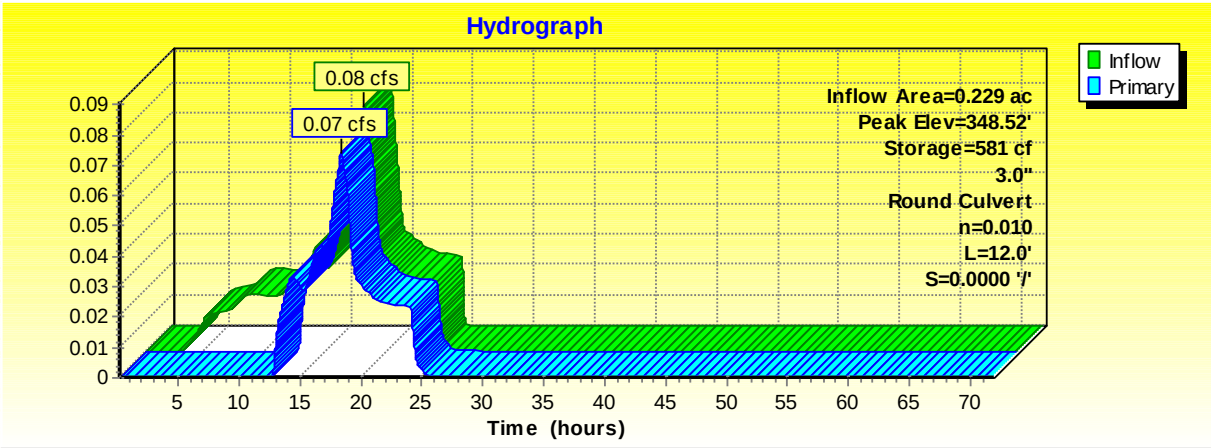
Device	Routing	Invert	Outlet Devices
#0	Primary	349.28'	**Automatic Storage Overflow** (Discharged without head)
#1	Primary	348.17'	**3.0" Round Culvert** L= 12.0' Ke= 0.500 Inlet / Outlet Invert= 348.17' / 348.17' S= 0.0000 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.05 sf

Primary OutFlow Max=0.16 cfs @ 18.36 hrs HW=348.91' (Free Discharge)
1=Culvert (Barrel Controls 0.16 cfs @ 3.29 fps)

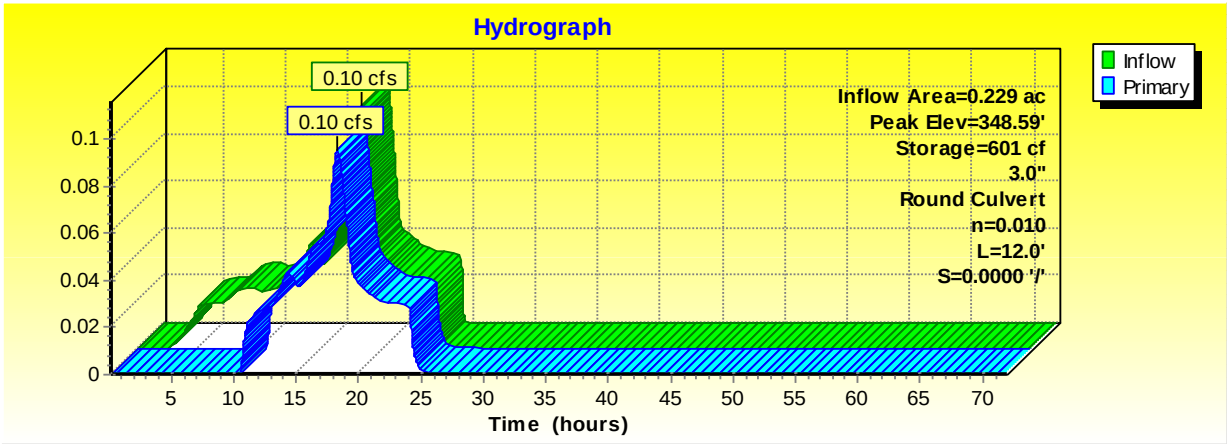
95% Year Storm



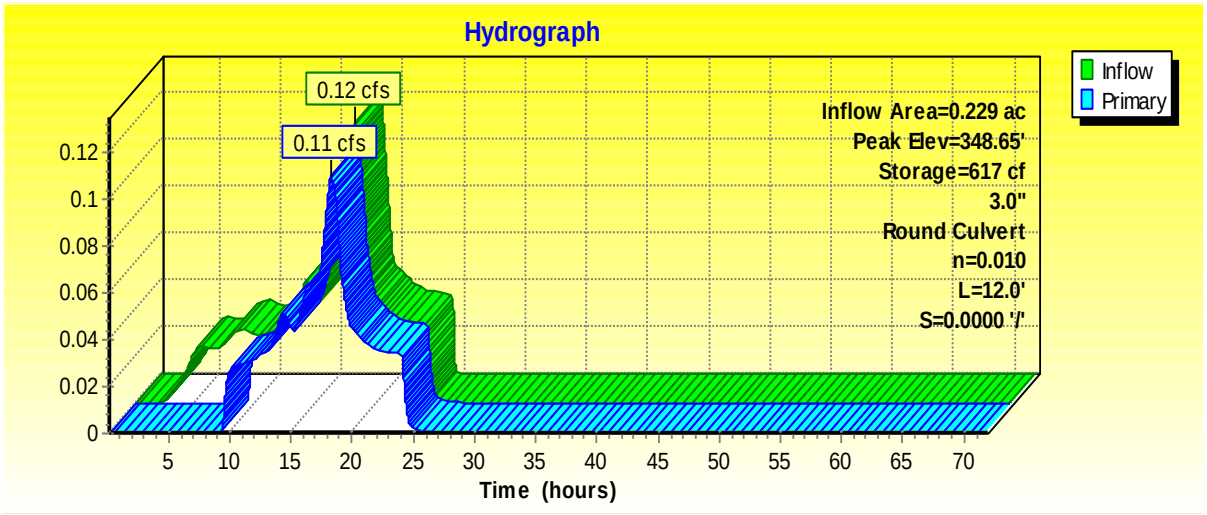
2 Year Storm



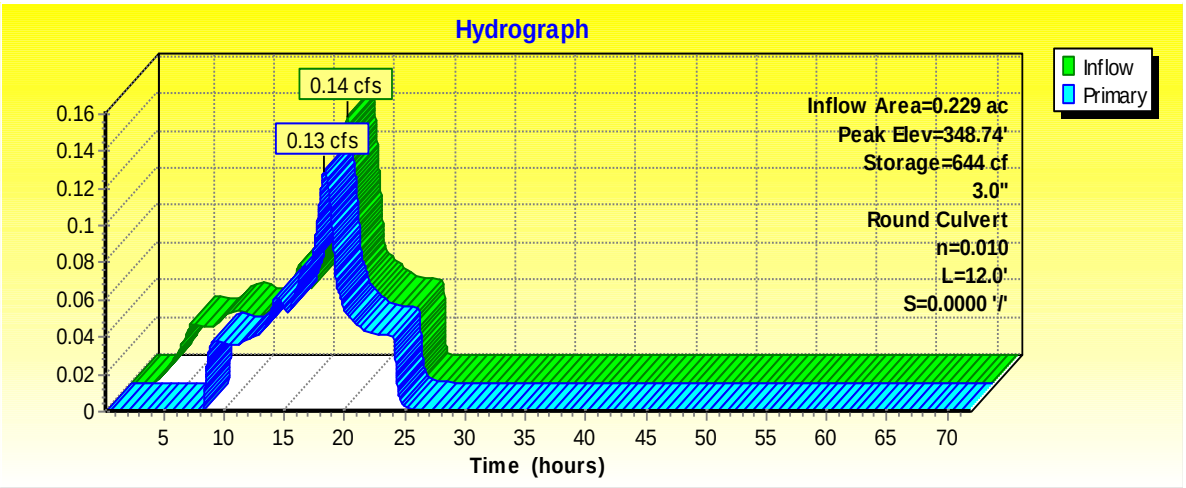
5 Year Storm



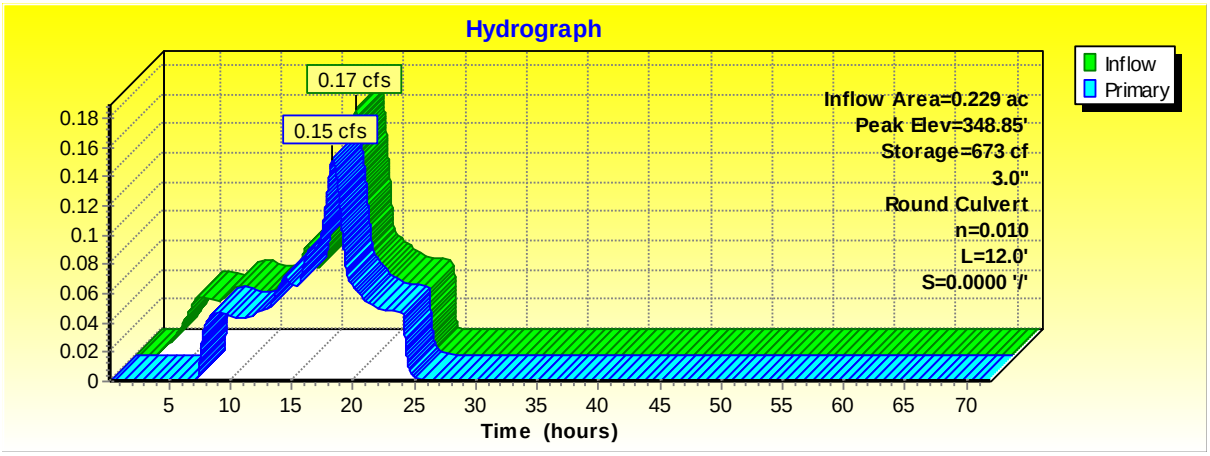
10 Year Storm



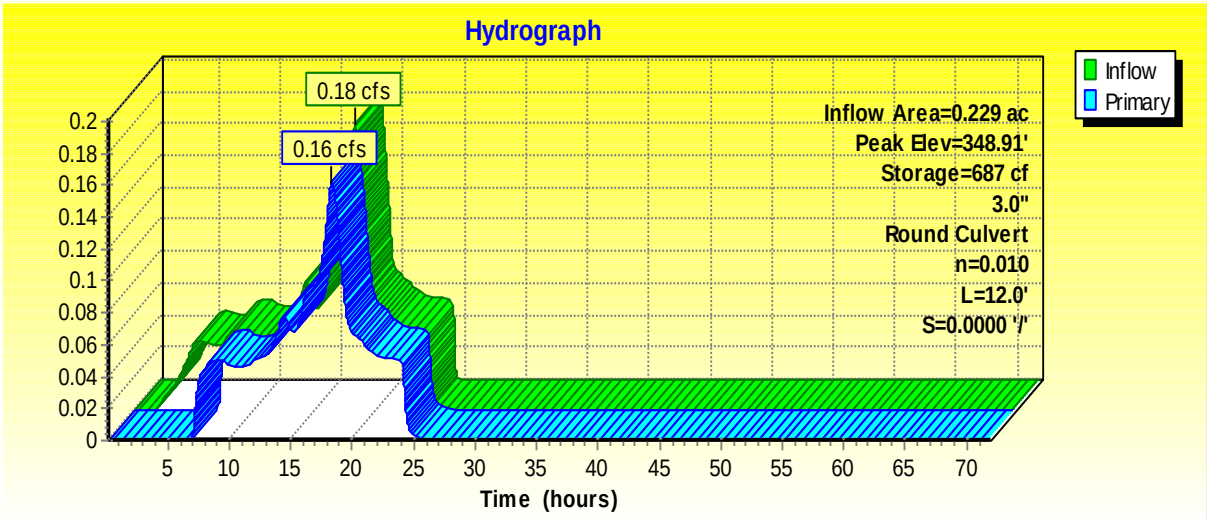
25 Year Storm



50 Year Storm



100 Year Storm



Drawdown Time for 100 year storm

Total available storage 741 cf. per hydrocad Summary table.
The SC-740 foot print: 7.25 ft wide X 39.22 ft long = 284.35 sf
The site infiltration rate: 2.1 in/hr.
Volume lost through infiltration: (2.1in/ hour/12in/ft)(284.35 sf) =49.76 cf/hr.
Drawdown time for the 100 yr storm as worse case scenario: 741cf/49.76 = 14.89 hours

Pre & Post Development Comparison Table

Storm Event	Morgan Hill Rainfall	Pre-Dev Q (cfs)	Post-Dev Q (cfs)
95%	*1.80*	***0.04***	***0.04***
2	*3.09*	***0.07***	***0.07***
5	*3.85*	***0.10***	***0.10***
10	*4.42*	***0.11***	***0.11***
25	*5.24*	***0.14***	***0.13***
50	*6.11*	***0.16***	***0.15***
100	*6.50*	***0.17***	***0.16***

GeoSolve, Inc.
Geoscience Solutions rather than Status-Quo

Visit us at www.geosolve-inc.com

Project No. 2022-21
November 30, 2022

Mr. Gabriel Connors
Intero Real Estate Services, Morgan Hill
175 East Main Ave. Suite 130
Morgan Hill California 95037

Subject: Proposed Residential Development
Vacant Lot – Barnell Avenue
APN 767-12-012
Morgan Hill, California 95037
PERCOLATION TEST EVALUATION

Dear Mr. Connors:

At your request, ***GeoSolve, Inc.*** is pleased to present our Percolation Test Evaluation at the above referenced site. The subject property is situated within the southern Santa Clara Valley in the greater Bay Area. The property is a vacant lot situated along Barnell Avenue in Morgan Hill, California, and totals approximately 0.207-acre with Assessor Parcel Number (APN) 767-12-012 and is bounded by Barnell Avenue to the east, a park to the west, and residences to the north and south. This work was requested by the City of Morgan Hill to evaluate the percolation rate.

On November 16, 2022, a ***GeoSolve, Inc.*** field geologist observed Exploration GeoServices, Inc. drill two borings (P-1 and P-2) on the eastern and western portions of the site to approximately 6 feet below ground surface (bgs) using an 8-inch diameter hollow stem-augers. The borings were backfilled with clean water and the following percolation rates were recorded below on Table 1.

Table 1
Percolation Test Rates
Vacant Lot – Barnell Avenue
Morgan Hill, California
November 16, 2022

Percolation Test P-1				
Time	**Depth to Water (feet)**	**Minutes**	**Percolation Rate (inches per minute)**	**Percolation Rate (inches per hour)**
13:10	0.00	0	0	0
13:12	0.35	2	2.1	126
13:15	0.40	5	0.96	57.6
13:20	0.50	10	0.60	36
13:30	0.55	20	0.33	19.8
13:40	0.60	30	0.24	14.4
13:50	0.75	40	0.22	13.5
14:10	1.20	60	0.24	14.4
Percolation Test P-2				
Time	**Depth to Water (feet)**	**Minutes**	**Percolation Rate (inches per minute)**	**Percolation Rate (inches per hour)**
13:26	0.00	0	0	0
13:28	0.30	2	1.80	108
13:31	0.55	5	1.32	79.2
13:36	0.70	10	0.84	50.4
13:46	0.85	20	0.51	30.6
13:56	1.00	30	0.40	24
14:06	1.35	40	0.40	24
14:26	2.00	60	0.40	24

The final percolation rate measured in P-1 was 14.4 inches per hour and the final percolation rate measured in P-2 was 24 inches per hour for an average percolation rate at the site of 0.21 inch per minute and 19.2 inches per hour.

The subject property exhibited a percolation rate exceeding the required 1.0 inch per hour percolation rate required by the City of Morgan Hill.

If you have any questions or need further information regarding this Percolation Test Evaluation, please call us at your convenience at (925) 963-1198.

Sincerely,

GeoSolve, Inc.

Robert D. Campbell, M.S., P.G., C.E.G., Q.S.D.
Principal Engineering Geologist

Porchet Methon Converting Percolation into Infiltration

Time Interval, time Interval t = 10 min
Final depth of Water D_f = 0.75 in
Test Hole radius r = 8 in

Initial Depth of Water D_o = 0.60 in
Total depth of test hole = 1.2

I_t = delta H (60 r) / delta t (r + 2 $H_{avg.}$)

H1 = 1.2 -0.60 = 0.60' or 7.2"
H2 = 1.2 -0.75 = 0.45" or 5.4"
Delta H = 7.2" - 5.4" = 1.8"
H avg. = 7.2" + 5.4" / 2 = 6.3"

I_t = 1.8" (60 X 8") / 10 min (8 + 2 (6.3") = 4.2 in/ hr

LOW IMPACT DEVELOPMENT

AND

POST-CONSTRUCTION

STORMWATER MANAGEMENT REQUIREMENTS

APPLICANT PACKET

FOR PROJECTS IN SOUTH SANTA CLARA COUNTY

COUNTY OF SANTA CLARA

REV 6/11/15

PROJECT INFORMATION

Project Name: LJ Commons APN#: 767-12-012

Project Address: Barnell Avenue, Morgan Hill

Cross Streets: Spring Avenue

Applicant/Developer Name: Harren Properties, LLC, C/O Gabriel Conners

Project Phase(s): 1 of 1 Engineer: Arman Nazemi, PE

Project Type (Check all that apply): ☐ New Development ☐ Redevelopment
☒ Residential ☐ Commercial ☐ Industrial ☐ Mixed Use ☐ Public ☐ Institutional
☐ Restaurant ☐ Uncovered Parking ☐ Retail Gas Outlet ☐ Auto Service (SIC code)____
☐ Other _____

Project Description: This is a two story four plex apartment for residential use.

Project Watershed/Receiving Water (creek, river): West Little Llagas Creek

1. Total Project Area	9,965	ft²
2. Pre-Project		
(a) Impervious Area	0	ft²
(b) Pervious Area	9,965	ft²
3. Post-Project		
(a) Replaced Impervious Area	0	ft²
(b) New Impervious Area	7,189	ft²
(c) Total Post-Project Impervious Area (*sum of Line 3a and Line 3b*)	7,189	ft²
(d) Post-Project Pervious Area	2,776	ft²
Net Impervious Area		
4. Reduced Impervious Area Credit *(Line 2a minus Line 3c)*	0	ft²
5. Net Impervious Area *(Line 3c minus Line 4)*	7,189	ft²

Note: DMA No. 2 is an existing 1,861sf area of half of Barnell Avenue fronting the project. The project is to remove and replace existing pavement with new pavement as part of development condition. Due to public limitation with right of way and grade differences, it is not practical to provide any quality treatment within the public roadway. We have provided equivalent quality treatment measures on-site to accommodate performance requirement No. 2.

6. Is Line 3c greater than or equal to 2,500 sq. ft?

☐ No, the project does not need to meet Post-Construction Stormwater Management Requirements **- STOP HERE**.

☒ Yes, the project is subject to Performance Requirement No. 1: Site Design and Runoff Reduction. Complete the **Site Design and Runoff Reduction Checklist** on **Page 4**. Continue to #7.

7. Is the Project a detached single-family home?

☒ No, go to #8.

☐ Yes, continue to #7.a. below.

7a. Is Line #5, Net Impervious Area greater than or equal to 15,000 sq ft?

☐ No, the project does not have any additional requirements – **STOP HERE**.

☐ Yes, this project is subject to Performance Requirement No. 2: Water Quality Treatment. Complete the **Water Quality Treatment Checklist** on **Page 6**. Continue to #7.b.

☐ Yes, this project is subject to Performance Requirement No. 3: Runoff Retention. Complete the **Runoff Retention Checklists** on **Pages 8-11**. Continue to #7.b.

7b. Is Line #3.c, amount of impervious surface created and/or replaced, greater than or equal to 22,500 sq ft?

☐ No, go to #12.

☐ Yes, this project is subject to Performance Requirement No. 4: Peak Management (refer to the Stormwater Management Guidance Manual for instructions).
Go to #12.

8. For projects that are not detached single family homes, is Line #5, Net Impervious Area, greater than or equal to 5,000 sq ft?

☐ No, the project does not have any additional requirements – **STOP HERE**.

☒ Yes, this project is subject to Performance Requirement No. 2 Water Quality Treatment. Complete the **Water Quality Treatment Checklist** on **Page 6**. Continue to #9.

9. Is Line #3.c, amount of impervious surface created and/or replaced, greater than or equal to 15,000 sq ft?

☒ No, go to #11.

☐ Yes, this project is subject to Performance Requirement No. 3 Runoff Retention. Complete all **Runoff Retention Checklists** on **Pages 8-11**, as applicable. Continue to #10.

10. Is Line #3.c, amount of impervious surface created and/or replaced, greater than or equal to 22,500 sq ft?

☐ No. Continue to #11.

☐ Yes, this project is subject to Performance Requirement No. 4: Peak Management (refer to the Stormwater Management Guidance Manual for instructions). Continue to #11.

11. Is there a pollutant generating activity or source included in the project (e.g., restaurants, grocery stores, food service operations, outdoor storage, vehicle service facilities, retail gas outlets, outdoor parking lots, loading docks, pools, spas, or fountains)?

☐ No, go to #12.

☒ Yes, your Project is required to implement structural or operational source control measures. Complete the **Source Control Checklist** on **page 5**. Continue to #12.

12. **Operation and Maintenance Information**

a) Property Owner's Name Harren Properties, LLC, C/O Gabriel Conners

b) Responsible Party for Stormwater Treatment/Hydromodification Control O&M:

i. Name: Gabriel Conners

ii. Address: 17045 Hill Road, Morgan Hill CA 95037

iii. Phone/E-mail: 408- 960- 9113 , gconnors@interorealestate.com

13. Submit a Stormwater Control Plan with the required information, and complete the **Stormwater Control Plan Checklist** on **page 12**.

☒ Yes

☐ No

PERFORMANCE REQUIREMENT NO. 1: SITE DESIGN AND RUNOFF REDUCTION

Certification

	DESIGN STRATEGY	INCORPORATED INTO PROJECT?
1.	Limit disturbance of creeks and natural drainage features.	☐
2.	Minimize compaction of highly permeable soils.	☒
3.	Limit clearing and grading of native vegetation at the site to the minimum area needed to build the project, allow access, and provide fire protection.	☐
4.	Minimize impervious surfaces by concentrating improvements on the least sensitive areas of the site, while leaving the remaining land in a natural undisturbed state.	☐
5.	Minimize stormwater runoff by implementing one or more of the following design measures:	☒
	a) Direct roof runoff into cisterns or rain barrels for reuse.	☐
	b) Direct roof runoff onto vegetated areas safely away from building foundations and footings.	☒
	c) Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas safely away from building foundations and footings.	☒
	d) Direct runoff from driveways and/or uncovered parking lots onto vegetated areas safely away from building foundations and footings.	☒
	e) Construct bike lanes, driveways, uncovered parking lots, sidewalks, walkways, and patios with permeable surfaces.	☐

I, Arman Nazemi, PE, acting as the Project Engineer for LJ Commons project, located at Barnell Avenue, Morgan Hill, hereby state that the Site Design and Runoff Reduction design strategies indicated above have been incorporated into the design of the project.

Arman Nazemi June 22, 2023

Signature Date

SOURCE CONTROL CHECKLIST

On-site Source Control Measures	**Incorporated Into Project?**
Wash area/racks, drain to sanitary sewer or septic system[1]	☐
Covered dumpster area, drain to sanitary sewer/septic system[1] or landscaped area	☐
Accessible cleanout for draining swimming pool/spa/fountain	☐
Parking garage floor drains plumbed to sanitary sewer[1]	☐
Fire sprinkler test water/condensate drain lines drain to sanitary sewer/septic system[1] or landscaped area	☐
Interior floor drains/boiler drain lines plumbed to sanitary sewer	☐
Beneficial landscaping/IPM (minimize irrigation, runoff, pesticides and fertilizers; promotes treatment)	☒
Outdoor material storage protection	☐
Covers, drains for loading docks, maintenance bays, fueling areas	☐
Maintenance (pavement sweeping, catch basin cleaning, good housekeeping)	☒
Storm drain labeling	☒
Other[2] _____	☐

Notes:

[1] Subject to sanitary sewer authority and/or Department of Environmental Health requirements.

[2] See CASQA Stormwater BMP Handbook for New Development and Redevelopment for additional BMPs for vehicle service repair facilities, fuel dispensing areas, industrial processes, rooftop equipment and other pollutant generating activities and sources. https://www.casqa.org/resources/bmp-handbooks/new-development-redevelopment-bmp-handbook

PERFORMANCE REQUIREMENT NO. 2: WATER QUALITY TREATMENT

Certification

ON-SITE WATER QUALITY TREATMENT MEASURES	INCORPORATED?
1. Low Impact Development (LID) Treatment Systems designed to retain stormwater runoff generated by the 85th percentile 24-hour storm. Stormwater Control Measures Implement (check all that apply, design documentation is required)	
a) Harvesting and Use,	☐
b) Infiltration,	☒
c) Evapotranspiration	☐
2. Biofiltration Treatment Systems[1] – with the following design parameters:	
a) Maximum surface loading rate appropriate to prevent erosion, scour and channeling within the biofiltration treatment system itself and equal to 5 inches per hour, based on the flow of runoff produced from a rain event equal to or at least: (a) 0.2 inches per hour intensity; or (b) Two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depth	☐
b) Minimum surface reservoir volume equal to the biofiltration treatment system surface area times a depth of 6 inches	☐
c) Minimum planting medium depth of 24 inches. The planting medium must sustain a minimum infiltration rate of 5 inches per hour throughout the life of the project and must maximize runoff retention and pollutant removal. A mixture of sand (60%-70%) meeting the specifications of American Society for Testing and Materials (ASTM) C33 and compost (30%-40%) may be used. A Project may utilize an alternative planting medium if it demonstrates its planting medium is equal to or more effective at attenuating pollutants than the specified planting medium mixture.	☐
d) Proper plant selection[2]	☐
e) Subsurface drainage/storage (gravel) layer with an area equal to the biofiltration treatment system surface area and having a minimum depth of 12 inches	☐
f) Underdrain with discharge elevation at top of gravel layer	☐
g) No compaction of soils beneath the biofiltration facility (ripping/loosening of soils required if compacted)	☐

h) No liners or other barriers interfering with infiltration, except for situations where lateral infiltration is not technically feasible ☐

3. Non-Retention Based Treatment Systems – designed to meet at least one of the following hydraulic sizing criteria:

   (a) Volume Hydraulic Design Basis – Treatment systems whose primary mode of action depends on volume capacity shall be designed to treat stormwater runoff equal to the volume of runoff generated by the 85th percentile 24-hour storm event, based on local rainfall data. ☐

   (b) Flow Hydraulic Design Basis – Treatment systems whose primary mode of action depends on flow capacity shall be sized to treat: ☒
      (i) The flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or
      (ii) The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.

I, Arman Nazemi, PE, acting as the Project Engineer for LJ Commons project, located at Barnell Avenue, Morgan Hill, hereby state that the Water Quality Treatment Measures indicated above have been incorporated into the design of the project.

Arman Nazemi June 24, 2024

Signature Date

[1] Facilities or a combination of facilities, of a different design than in Item #2 may be permitted if all of the following measures of equivalent effectiveness are demonstrated: 1) equal or greater amount of runoff infiltrated or evapotranspired; 2) equal or lower pollutant concentrations in runoff that is discharged after biofiltration; 3) equal or greater protection against shock loading and spills; and 4) equal or greater accessibility and ease of inspection and maintenance.

[2] Technical guidance for designing bioretention facilities is available from the Central Coast LID Initiative. The guidance includes design specifications and plant lists appropriate for the Central Coast climate. (http://www.centralcoastlidi.org/Central_Coast_LIDI/LID_Structural_BMPs.html)

PERFORMANCE REQUIREMENT NO. 3 – RUNOFF RETENTION NA

Design Rainfall Events & Treatment Requirements for Watershed Management Zones (WMZs)[1]

WMZ[2]	Treatment Options & Design Rainfall	Check Applicable WMZs
WMZ 1	Via optimized infiltration[3], prevent offsite discharge from events up to the 95th percentile 24-hour rainfall event as determined from local rainfall data.	☐
WMZ 2	Via storage, rainwater harvesting, infiltration, and/or evapotranspiration, prevent offsite discharge from events up to the 95th percentile 24-hour rainfall event as determined from local rainfall data.	☐
WM 4 *	Via optimized infiltration[2], prevent offsite discharge from events up to the 95th percentile 24-hour rainfall event as determined from local rainfall data.	☐
WMZ 5	Via optimized infiltration[2] prevent offsite discharge from events up to the 85th percentile 24-hour rainfall event as determined from local rainfall data.	☐
WMZ 6	Via storage, rainwater harvesting, infiltration, and/or evapotranspiration, prevent offsite discharge from events up to the 85th percentile 24-hour rainfall event as determined from local rainfall data.	☐
WMZ 9	Via storage, rainwater harvesting, infiltration, and/or evapotranspiration, prevent offsite discharge from events up to the 85th percentile 24-hour rainfall event as determined from local rainfall data.	☐
WMZ 10 *	Via optimized infiltration[2], prevent offsite discharge from events up to the 95th percentile 24-hour rainfall event as determined from local rainfall data	☐

1. Includes only those WMZs located in Santa Clara County.
2. Use the Santa Clara County Department of Planning and Development Online Property Profile database to determine the WMZ in which your project is located: http://www.sccplanning.org/gisprofile/

   Search for your project site by APN or Address to retrieve the Property Profile. At the bottom of the property profile page, under Special Resources/Hazards/Constraints Areas, look for the "Central Coast Watershed Management Zone Value".
3. Storage, rainwater harvesting, and/or evapotranspiration may be used when infiltration is optimized.

* Applicable only to those areas that overlay designated Groundwater Basins.

PERFORMANCE REQUIREMENT NO. 3 – RUNOFF RETENTION NA

LID Site Assessment Checklist

ITEMS TO DOCUMENT:	INCLUDED IN PROJECT DOCUMENTS?
1. Site topography	☐
2. Hydrologic features including contiguous natural areas, wetlands, watercourses, seeps, or springs	☐
3. Depth to seasonal high groundwater	☐
4. Locations of groundwater wells used for drinking water	☐
5. Depth to an impervious layer such as bedrock	☐
6. Presence of unique geology (e.g., karst)	☐
7. Geotechnical hazards	☐
8. Documented soil and/or groundwater contamination	☐
9. Soil types and hydrologic soil groups	☐
10. Vegetative cover/trees	☐
11. Run-on characteristics (source and estimated runoff from offsite which discharges to the project area)	☐
12. Existing drainage infrastructure for the site and nearby areas including the location of municipal storm drains	☐
13. Structures including retaining walls	☐
14. Utilities	☐
15. Easements	☐
16. Covenants	☐
17. Zoning/Land Use	☐
18. Setbacks	☐
19. Open space requirements	☐
20. Other pertinent overlay(s)	☐

PERFORMANCE REQUIREMENT NO. 3 – RUNOFF RETENTION NA

LID Site Design Measures

The Project Engineer shall certify the Project design optimizes the use of the following design measures to augment the design strategies required by Performance Requirement No. 1. Initial each runoff retention measure that has been incorporated and optimized into the design or mark NA if not applicable.

PERFORMANCE REQUIREMENT NO. 3 CERTIFICATION OF LID SITE DESIGN MEASURES NA

	DESIGN MEASURE	INCORPORATED/ OPTIMIZED
1.	Defining the development envelope, identifying the protected areas, and identifying areas that are most suitable for development and areas to be left undisturbed	NA
2.	Identifying conserved natural areas, including existing trees, other vegetation, and soils (shown on the plans)	NA
3.	Limit the overall impervious footprint of the project	NA
4.	Design of streets, sidewalks, or parking lot aisles to the minimum widths necessary, provided that public safety or mobility uses are not compromised	NA
5.	Set back development from creeks, wetlands, and riparian habitats	NA
6.	Design conforms the site layout along natural landforms	NA
7.	Design avoids excessive grading and disturbance of vegetation and soils	NA

I, Arman Nazemi, PE, acting as the Project Engineer for LJ Commons project, located at Barnell Avenue, Morgan Hill, hereby state that LID Site Design Measures initialed have been incorporated into the design of the project.

Arman Nazemi June 24, 2024

Signature Date

PERFORMANCE REQUIREMENT NO. 3 – RUNOFF RETENTION NA

TECHNICAL INFEASIBILITY CHECKLIST

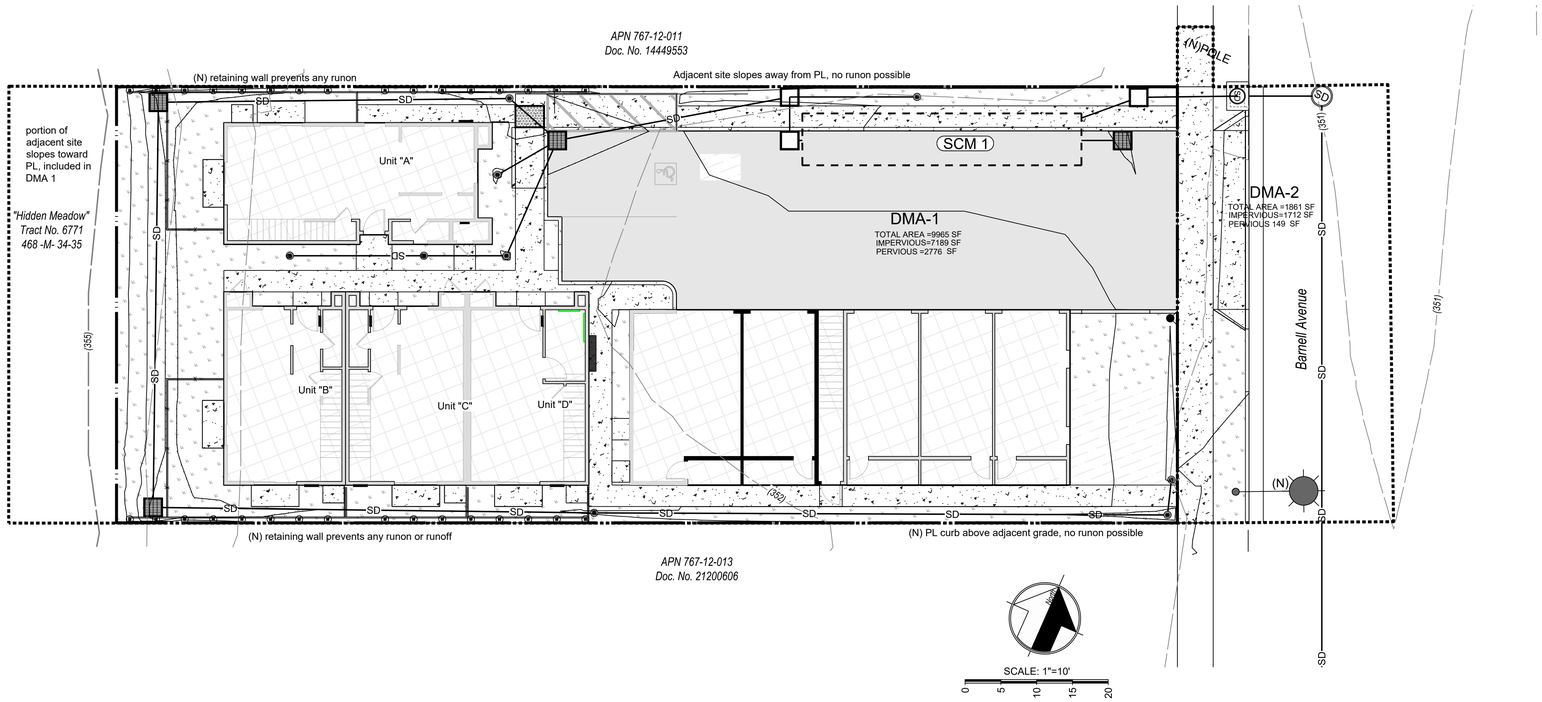
	Site Conditions	Check Applicable
1.	Depth to seasonal high groundwater limits infiltration and/or prevents construction of subgrade stormwater control measures[3]	☐
2.	Depth to an impervious layer such as bedrock limits infiltration	☐
3.	Sites where soil types significantly limit infiltration	☐
4.	Sites where pollutant mobilization in the soil or groundwater is a documented concern	☐
5.	Space constraints (e.g., infill projects, some redevelopment projects, high density development)	☐
6.	Geotechnical hazards	☐
7.	Stormwater Control Measures located within 100 feet of a groundwater well used for drinking water	☐
8.	Incompatibility with surrounding drainage system (e.g., project drains to an existing stormwater collection system whose elevation or location precludes connection to a properly functioning treatment or flow control facility)	☐

[3] According to the CASQA Frequently Asked Questions about LID, "some MS4 permits and BMP guidance manuals require anywhere from 3-10 feet of separation from the groundwater level for infiltration practices. This distance depends on the soil type, pollutants of concern, and groundwater use. In some cases, however, where there may be groundwater or soil contamination, LID infiltrative practices may be restricted completely. (p. 7 in https://www.casqa.org/Portals/0/LID/CA_LID_FAQ_06-28-2011.pdf)

STORMWATER CONTROL PLAN CHECKLIST

Stormwater Control Plan Required Contents	**PR Level**	**Done?**
1. Project Information	All	
• Project name		X
• Application number		X
• Address and assessor's parcel number		X
• Name of Applicant		X
• Project Phase number (if project is being constructed in phases)		X
• Project Type (e.g., commercial, industrial, multi-unit residential, mixed-use, public), and description		X
2. Project Areas	All	
• Total project site area		X
• Total new impervious surface area		X
• Total replaced impervious surface area		
• Total new pervious area		X
• Calculation of Net Impervious Area		
3. Statement of Performance Requirements that apply to the project:	All	
• Performance Requirement No.1 – Site Design and Runoff Reduction		X
• Performance Requirement No.2 – Water Quality Treatment		X
• Performance Requirement No. 3 – Runoff Retention		
• Performance Requirement No. 4 – Peak Management		
4. Delineation of Drainage Management Areas (DMAs)	All	X
5. Summary of Site Design and Runoff Reduction Performance Requirement measures selected for the project (see PR-1 checklist)	PR-1	X
6. Description of Runoff Reduction Measures and Structural Stormwater Control Measures, by Drainage Management Area and for entire site	PR-2, 3, and 4	X
7. Water quality treatment calculations used to comply with the Water Quality Treatment Performance Requirement and any analysis to support infeasibility determination	PR-2	X
8. Documentation certifying that the selection, sizing, and design of the Stormwater Control Measures meet the full or partial Water Quality Treatment Performance Requirements (see PR-2 checklist)	PR-2	X

Stormwater Control Plan Required Contents	**PR Level**	**Done?**
9. Statement that Water Quality Treatment Performance Requirement has been met on-site, or, if not achievable: • Documentation of the volume of runoff for which compliance cannot be achieved on-site and the associated off-site compliance requirements • Statement of intent to comply with Water Quality Treatment Performance Requirement through Alternative Compliance	PR-2	☒
10. LID Site Assessment Summary (see PR-3 checklist)	PR-3	☐
11. LID Site Design Measures Used (see PR-3 checklist)	PR-3	☐
12. Supporting calculations used to comply with the applicable Runoff Retention Performance Requirements	PR-3	☐
13. Documentation demonstrating infeasibility where Site Design and Runoff Reduction measures and retention-based Stormwater Control Measures cannot retain required runoff volume	PR-3	☐
14. Documentation demonstrating percentage of the project's Equivalent Impervious Surface Area dedicated to retention-based Stormwater Control Measures	PR-3	☐
15. Statement that Runoff Reduction Performance Requirement has been met on-site, or, if not achievable: • Documentation of the volume of runoff for which compliance cannot be achieved on-site and the associated off-site compliance requirements • Statement of intent to comply with Runoff Retention Performance Requirements through an Alternative Compliance agreement	PR-3	☐
16. Supporting calculations used to comply with the applicable Peak Management Performance Requirements	PR-4	☐
17. Documentation demonstrating infeasibility where on-site compliance with Peak Management Performance Requirements cannot be achieved	PR-4	☐
18. Statement that Peak Management Performance Requirement has been met on-site, or, if not achievable: • Documentation of the volume of runoff for which compliance cannot be achieved on-site and the associated off-site compliance requirements • Statement of intent to comply with Peak Management Requirements through an Alternative Compliance agreement		☐
19. O&M Plan for all structural SCMs to ensure long-term performance	PR-2, 3, and 4	☒
20. Owner of facilities and responsible party for conducting O&M	PR-2, 3, and 4	☒



Legend:

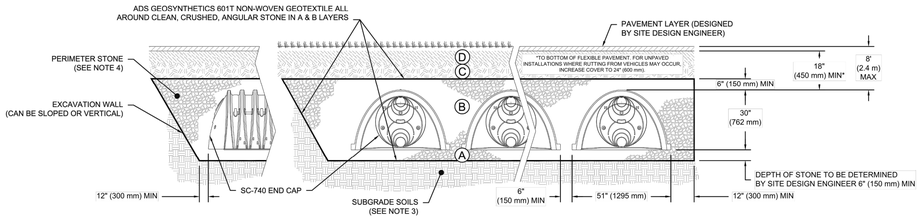
SCM # — *Source Control Measure*

DMA Boundary

Storm Drain Note:

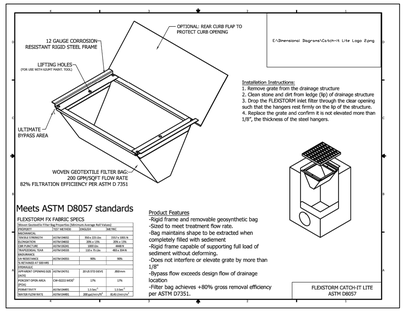
Provide Flexstorm Catch-It Lite drain insert in all SDDIs for water quality treatment.

ADS StormTech Chamber System



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT/% AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.



Drain Inlet Insert Detail

04/25/2024 8:42pm
FOR PLANCHECK ONLY
REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. McCLINTOCK
No. 24893
EXP 12-31-2025
STATE OF CALIFORNIA
FOR PLANCHECK ONLY
signature shall be provided upon approval

MH engineering Co.
Morgan Hill, CA 95037
16075 Vineyard Boulevard

LJ Commons

Preliminary Stormwater Control Plan

Lands of Murray - APN 767-12-012

DATE: 4/19/2024
SCALE: 1" = 10'
DRAWN BY: KOH
CHECKED BY: WJM

JOB NO. 222100

SHEET C5
OF 05

GEOTECHNICAL ENGINEERING REPORT
MULTI-FAMILY RESIDENTIAL DEVELOPMENT
BARNELL AVENUE (APN 767-12-012)
MORGAN HILL, CALIFORNIA

November 4, 2022

Prepared for:

Haren Properties LLC

Prepared by:

Earth Systems Pacific
500 Park Center Drive, Suite #1
Hollister, CA 95023

Earth Systems
500 Park Center Drive, Unit 1 | Hollister, CA 95023 | 831.637.2133 | www.earthsystems.com

November 4, 2022 File No.: 305624-001

Haren Properties LLC
C/O Mr. Gabriel Connors
17045 Hill Road
Morgan Hill, CA 95037

PROJECT: MULTI-FAMILY RESIDENTIAL DEVELOPMENT
BARNELL AVENUE (APN 767-12-012)
MORGAN HILL, CALIFORNIA

SUBJECT: Geotechnical Engineering Report

REF.: Proposal for a Geotechnical Engineering Report, Multi-Family Residential Development, Barnell Avenue (APN 767-12-012), Morgan Hill, California, by Earth Systems Pacific, July 6, 2022.

Dear Mr. Connors:

In accordance with your authorization of the above referenced proposal, this geotechnical engineering report has been prepared by Earth Systems Pacific (Earth Systems) for use in the development of plans and specifications for the proposed multi-family residential development to be located on Barnell Avenue in Morgan Hill, California. The conclusions and recommendations presented herein are based on our understanding of the proposed development, a review of the subsurface conditions revealed by our exploratory borings advanced as a part of this investigation, and our engineering analysis.

We appreciate the opportunity to assist you on this project. Should you have any questions regarding the contents of this report, please contact the undersigned.

Sincerely,

Earth Systems Pacific

Phillip Penrose, CE 92946
Project Engineer

LICENSED PROFESSIONAL ENGINEER PHILLIP PENROSE C 92946 CIVIL STATE OF CALIFORNIA

Ajay Singh, GE 3057
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER AJAY SINGH GE 3057 GEOTECHNICAL STATE OF CALIFORNIA

Doc. No.: 2211-004.SER/jc

TABLE OF CONTENTS

1.0 INTRODUCTION

This report presents the results of the geotechnical engineering study performed by Earth Systems Pacific (Earth System), for the proposed multi-family residential development to be constructed at the captioned site in Morgan Hill, California. The attached Site Location Map (Figure 1) shows the general location of the site, and the attached Site Plan (Figure 2) shows the locations of the exploratory borings advanced at the site as part of this investigation.

Site Setting

The subject property is located on Barnell Avenue in Morgan Hill, California (APN 767-12-012). The site area has a latitude of 37.1227°N and a longitude of 121.6544°W. The site is bordered by Barnell Avenue to the northeast, a greenbelt to the southwest and existing residences to the northwest and southeast. At the time of our site investigation, the site was undeveloped and covered in a grasses and weeds. The majority of the site slopes gently from southwest to northeast with a small 2-foot-high slope at about 20 percent at the rear of the property (southwest end) sloping in the same direction.

Project Description

Site development plans were not provided for our review, but based on communication with the client, we understand the proposed development will consist of a fourplex with an accessory dwelling unit (ADU). Based on the topography of the site, we anticipate a minimal to moderate amount of grading, but expect no retaining walls to be constructed.

Scope of Services

The scope of work for the geotechnical engineering study included general site reconnaissance, exploration of subsurface soil and groundwater conditions from a geotechnical engineering standpoint, laboratory testing to measure pertinent engineering properties of soil samples collected from the site, evaluation of the subsurface data collected from the site, and preparation of this report. The analysis and engineering recommendations presented in the following sections of this report are based on our understanding of the proposed development at the subject site and our experience with projects of a similar nature.

The report and recommendations are intended to comply with the considerations of Section 1803 of the California Building Code (CBC), 2019 Edition, and common geotechnical engineering practice in this area at this time under similar conditions.

Preliminary geotechnical recommendations for site preparation and grading, foundations, slabs-on-grade, exterior flatwork, utility trench backfill, site drainage management, and geotechnical observation and testing are presented to guide the development of project plans and specifications. It is our intent that this report be used by the client to form the geotechnical basis of the design of the project as described herein, and in the preparation of plans and specifications.

Detailed evaluation of the site geology and potential geologic hazards, and analyses of the soil for mold or other microbial content, asbestos, radioisotopes, hydrocarbons, or other chemical properties are beyond the scope of this report. This report also does not address issues in the domain of contractors such as, but not limited to, site safety, loss of volume due to stripping of the site, shrinkage of soils during compaction, excavatability, shoring, temporary slope angles, and construction means and methods. Ancillary features such as temporary access roads, fences, light poles, and non-structural fills are not within our scope and are also not addressed.

To verify that pertinent issues have been addressed and to aid in conformance with the intent of this report, it is requested that final grading and foundation plans be submitted to this office for review. In the event that there are any changes in the nature, design, or locations of improvements, or if any assumptions used in the preparation of this report prove to be incorrect, the conclusions and recommendations contained herein should not be considered valid unless the changes are reviewed, and the conclusions of this report are verified or modified in writing by the Geotechnical Engineer. The criteria presented in this report are considered preliminary until such time as they are verified or modified in writing by the Geotechnical Engineer in the field during construction.

2.0 SEISMIC SETTING

The entire San Francisco Bay Area is considered to be an active seismic region due to the presence of several active faults. Three northwest-trending major earthquake faults that are responsible

for the majority of the movement on the San Andreas fault system extend through the greater Bay Area. They include the San Andreas, Hayward, and Calaveras faults, which are respectively located approximately 9.9 miles to the southwest, more than 20 miles away, and 4.6 miles to the northeast.

Using information from recent earthquakes, improved mapping of active faults, and a new model for estimating earthquake probabilities, the 2014 Working Group on California Earthquake Probabilities updated the 30 year earthquake forecast for California. A summary of the significant faults in the near vicinity of the site and their respective potential moment magnitudes are listed below.

Major Active Faults

Fault	Distance from Site (miles)	Probability of $M_w \geq 6.7$ within 30 Years[1]
Calaveras	4.6 (NE)	16%
San Andreas	9.9 (SW)	14%

[1] Working Group on California Earthquake Probabilities, 2014

3.0 FIELD INVESTIGATION

Subsurface Exploration

As a part of the current phase of site investigation, Earth Systems advanced four borings on September 29, 2022, at the approximate locations shown on the Site Plan, Figure 2. Data from the borings as part of this investigation were used to generate the conclusions and recommendations presented in this report.

The drilling process consisted of using a truck-mounted drilling rig equipped with 6-inch diameter solid stem augers. Once reaching the desired depth, a standard sampler connected to steel rods was lowered into the hole. The sampler was driven into undisturbed ground with a 140-pound, safety hammer falling about 30 inches per drop. The sampler was driven up to 18 inches and the hammer blows required to drive every six inches of the sampler were recorded and are presented on the boring logs. The number of blows required to drive the final 12 inches of the sampler into the undisturbed ground is known as Penetration Resistance and was used to interpret soil

consistency/density. Our staff geologist supervised the drilling program, described the soil conditions revealed by the boring to create a continuous log, and collected representative samples for laboratory testing. After drilling to the final depth, the borings were backfilled by soil cuttings. The boring logs show soil description including: color, major and minor components, USCS classification, changes in soil conditions with depth, moisture content, consistency/density, plasticity, sampler type, and sampling depths, and laboratory test results. Copies of the logs of boring drilled for this investigation are presented in Appendix A.

Subsurface Profile

The borings drilled at the site revealed the presence of a profile consisting of mixtures of sand and clay in different proportions. The near surface soils consisted primarily of very stiff to hard fat clay with some sand except at B-4 where the top 18 inches of soil was interpreted to be import fill. A sample of the near surface soil was tested in our laboratory to measure its Atterberg Limits. The results of our laboratory test indicated a Liquid Limit of 62 and Plasticity Index of 35. Based on the test results, the near surface soil was judged to have a high shrinkage/swelling potential. The coarse-grained materials found in our borings consisted of a clayey sand layer in boring B-1 from 3.5 feet to 6 feet bgs (below the ground surface) and the bottom foot of Boring B-2 consisted of very dense clayey gravel at 24 to 25 feet bgs.

Groundwater was encountered at approximately 20½ feet bgs in boring B-2 during our subsurface exploration. Santa Clara Valley Water District reported a historic high groundwater level of approximately 10 to 20 bgs. Variations in rainfall, temperature, and other factors may affect water levels, and therefore groundwater levels should not be considered constant. Groundwater is not expected to have an adverse effect on the construction or performance of the proposed residence and related structures.

Laboratory Testing

Select samples were tested in the laboratory to measure moisture content and dry unit weight (ASTM D 2216-17 and D 2937-17), and Atterberg Limits (ASTM D 2937-17). The results of the tests performed to measure moisture content and dry unit weight were used to aid in soil classification and to help interpret variations in soil types. The results of Atterberg Limits tests were also used to aid in interpretation of shrinkage/swell potential of tested soil. Copies of the laboratory test results are included in Appendix B.

4.0 DATA ANALYSIS

Subsurface Soil Classification

Based on the penetration resistance data from the borings advanced at the site (Appendix A), the site is assigned to Site Class D ("stiff soil") as defined by Table 20.3-1 of the ASCE 7-16.

Seismic Design Parameters

The seismic design parameters for the site per Chapter 16 of the California Building Code (2019 Edition) are as follows. The parameters were determined using the OSHPD/U.S. Seismic Design Maps web site.

Summary of Seismic Parameters - CBC 2019

(Site Coordinates 37.2535°N, 121.9680° W)

Parameter	Design Value
Site Class	D
Mapped Short Term Spectral Response Parameter, (S_s)	1.518g
Mapped 1-second Spectral Response Parameter, (S_1)	0.6g
Site Coefficient, (F_a)	1
Site Coefficient, (F_v)	1.7
Site Modified Short Term Response Parameter, (S_{Ms})	1.518g
Site Modified 1-second Response Parameter, (S_{M1})	1.02g
Design Short Term Response Parameter, (S_{Ds})	1.012g
Design 1-second Response Parameter, (S_{D1})	0.68g

5.0 CONCLUSIONS

General

Based on the results of the field investigation and the laboratory testing program, in our opinion, the site is geotechnically suitable for the proposed residential development provided the recommendations contained herein are incorporated in the design and implemented during site grading and foundation construction. The primary geotechnical concern is the very high expansion potential of the surficial soil.

Site Preparation and Grading

Grading work is anticipated to include construction of the building pads and backfill work related to placement of new utility lines. No grading plan were provided for our review, but based on the site topography, there is a chance for a cut/fill transition across the building pad. If a cut/fill transition exists for the building pad, supplemental recommendations will be needed to mitigate the potential differential settlement that could occur with a cut/fill transition.

Soil Expansion Potential

The results of Atterberg Limits test performed on a sample representative of near surface soils encountered in our exploratory borings indicated a liquid limit (LL) of 62 and a plasticity index (PI) of 35. Based on the test results the near surface soil is judged to be a highly expansive soil. Expansive soils tend to swell with increases in soil moisture and shrink as the soil moisture decreases. The volume changes that the soils undergo in this cyclical pattern can result in post-construction distress to lightly loaded structures/at-grade floor slabs/flatwork founded on these soils and other improvements if precautionary measures are not incorporated into the design and implemented during construction.

Foundations

Due to the light loads of the proposed structure, the anticipated building loads can be supported on conventional spread/strip footings.

Groundwater

Groundwater was encountered at 20½ feet bgs during drilling. The historic high depth to groundwater level according to the Santa Clara Valley Water District is reported to be approximately 10 to 20 feet bgs. Variations in rainfall, temperature, and other factors may affect water levels, and therefore groundwater levels should not be considered constant. Groundwater levels are not anticipated to have an adverse effect on the project.

Settlements

The estimated static settlements for the residences are less than 1-inch with approximately ½-inch of differential settlement.

Seismicity

The San Francisco Bay area is recognized by geologists and seismologists as one of the most seismically active regions in the United States. The significant earthquakes in this area are generally associated with crustal movement along well-defined, active fault zones which regionally trend in a northwesterly direction. Although research on earthquake prediction has greatly increased in recent years, seismologists cannot predict when and where an earthquake will occur. Nevertheless, on the basis of current technology, it is reasonable to assume that the proposed development will be subjected to at least one moderate to severe earthquake during its lifetime. During such an earthquake, the danger from fault offset on the site is low, but strong shaking of the site is likely to occur and, therefore, the project should be designed in accordance with the seismic design provisions of the latest California Building Code. It should be understood that the California Building Code seismic design parameters are not intended to prevent structural damage during an earthquake, but to reduce damage and minimize loss of life.

6.0 RECOMMENDATIONS

Site Preparation and Grading

General Site Preparation

1. The site should be prepared for grading by removing vegetation, debris, and other potentially deleterious materials from areas to receive improvements. Existing fills also encountered during grading should be removed to undisturbed natural ground. Existing utility lines that will not be serving the proposed project should be either removed or abandoned. The appropriate method of utility abandonment will depend upon the type and depth of the utility. Recommendations for abandonment can be made as necessary.

2. Due to the undocumented fill encountered in our exploratory borings, a program of over-excavation and backfilling may be required in portions of the site where undocumented fill is present. Loose, disturbed soil within the area of the proposed improvements should be cleaned out (excavated) to competent, undisturbed soil. Over-excavation of the upper 2 to 3 feet of existing ground may be needed in this area, as established by the Geotechnical Engineer in the field. In other areas, prior to placing fill, the existing subgrade should be scarified, moisture conditioned to a minimum of 3 percent above optimum moisture content and compacted in place to a relative compaction between 88

to 92 percent. The lateral extent of this area should extend at least 5 feet beyond the perimeter of the proposed improvements, as determined in the field by the Geotechnical Engineer during grading operations.

3. Ruts or depressions resulting from the removal of utilities, undocumented fill, tree root systems, and abandoned and/or buried structures, buried debris, and remnants of the former use of the site that are discovered during site grading should be removed and properly cleaned out down to undisturbed native soil. The bottoms of the resulting depressions should be scarified and cross-scarified at least 8 inches in depth, moisture conditioned and recompacted. The depressions should then be backfilled with approved, compacted, moisture conditioned structural fill, as recommended in other sections of this report. If the removal of existing features will result in a cut/fill transition or differential fill condition under structures or pavements, the Geotechnical Engineer should be consulted to provide additional grading recommendations to mitigate these adverse conditions.

4. "Organic" soil or soil contaminated with debris will not be suitable for use as structural fill and should be removed from the site or stockpiled for use in landscape areas.

5. Site clearing and backfilling operations should be conducted under the field observation of the Geotechnical Engineer. The Geotechnical Engineer should be notified at least 48 hours prior to commencement of grading operations.

Compaction Recommendations

1. Prior to placing new fill, the underlying undisturbed native soil should be scarified at least 8 inches, moisture conditioned at least 3 percentage points above optimum moisture, and recompacted to the recommended relative compaction presented below, unless noted otherwise. This scarification operation should be performed at locations designated for proposed structural fill, concrete slabs-on-grade, exterior flatwork, foundations, and pavement areas.

2. Recompacted native soils and fill soils should be compacted to a minimum relative compaction of 88 to 92 percent of maximum dry density at a moisture content at least 3 percentage points above optimum.

3. In areas to be paved, the upper 8 inches of subgrade soil should be compacted between 88 to 92 percent of maximum dry density at a moisture content at least 3 percentage points above optimum. The aggregate base courses should be compacted to a minimum 95 percent of maximum dry density at a moisture content that is slightly over optimum. The subgrade and base should be firm and unyielding when proof-rolled with heavy, rubber-tired equipment prior to paving. The pavement subgrade soils should be periodically moistened as necessary prior to placement of the aggregate base to maintain the soil moisture content over optimum.

Fill Recommendations

1. Structural fill is defined herein as a native or import fill material which, when properly compacted, will support foundations, pavements, and other fills. The on-site native soils that are free of debris, organics and other deleterious material, may be used as structural fill.

2. The at-grade floor slabs should be constructed over a minimum of 12 inches of low-expansive fill and exterior flatwork should be constructed over a minimum of 8 inches of low-expansive fill to minimize the adverse long-term effects of soil expansion/contraction on lightly loaded structures. This low-expansive soil layer thickness does not include the thickness of the capillary break layer. Prior to placement of the low-expansive fill, the top 8 inches of the subgrade, should be scarified to a minimum depth of 8 inches, moisture conditioned to a minimum of 3 percent above optimum moisture content and compacted in place to relative compaction of 88 to 92 percent. Low-expansive imported fill material is not needed in the areas with basement because the soils at that depth are not highly expansive.

3. Imported low-expansive fill soils at the site should meet the following criteria:

   a. Be coarse grained and have a plasticity index of less than 15 and/or an expansion index less than 20;

   b. Be free of organics, debris or other deleterious material;

   c. Have a maximum rock size of 3 inches; and

   d. Contain sufficient clay binder to allow for stable foundation and utility trench excavations.

4. A representative sample of the proposed imported soils should be submitted at least five working days before being transported to the site for evaluation by the Geotechnical Engineer. During importation to the site the material should be further reviewed on an intermittent basis.

Foundations

Spread/Strip Footings

1. The proposed development may be supported by conventional strip/spread footings bearing on the stiff native or engineered fill material. The footings should have minimum depths of 30 inches below the lowest adjacent soil grade into dense native soil in order to penetrate a soil layer with less moisture fluctuation. The footing excavations should be observed by the Geotechnical Engineer prior to placement of formwork or reinforcement.

2. The footings should be designed using a maximum allowable bearing capacity of 2,500 psf dead plus live load. This value may be increased by one-third when transient loads such as wind or seismicity are included.

3. Resistance to lateral loads should be calculated based on a passive equivalent fluid pressure of 300 pcf and a friction factor of 0.30. Passive and frictional resistance can be combined in the calculations without reductions. These values are based on the assumption that backfill adjacent to foundations is properly compacted.

Slab-on-Grade Construction

1. Slabs-on-grade should have a minimum thickness of 5 full inches and be reinforced as directed by the architect/engineer. The garage slab should be constructed independent of the perimeter footings except at door openings. A layer of felt expansion joint material should be placed between the foundation and the floor slab.

2. Due to the high expansion potential of the soil, the slabs-on-grade should be constructed over a minimum of 12 inches of low-expansive fill as described in the Site Preparation and Grading section of this report. Prior to placement of the low-expansive, the subgrade soil should be moistened as described in the previous sections of the report, and the moisture content should be maintained up until the concrete slab is placed on top.

3. In areas where moisture transmitted from the subgrade would be undesirable, or where moisture sensitive materials will be stored directly on the slab, including the at grade and basement portions of the structure, a capillary break system that consists of a vapor retarder and a 4-inch-thick (at-grade portion), clean crushed rock layer should be placed above the pad subgrade to serve as a capillary break.

4. A vapor retarder should be provided above the drain blanket. The vapor retarder should comply with ASTM Standard Specification E 1745-17 and the latest recommendations of ACI Committee 302. The vapor retarder should be installed in accordance with ASTM Standard Practice E 1643-18a. Care should be taken to properly lap and seal the vapor retarder, particularly around utilities, and to protect it from damage during construction.

5. A sand layer over the vapor retarder is optional. If sand, gravel or other permeable material is to be placed over the vapor retarder, the material over the vapor retarder should be only lightly moistened and not saturated prior to casting the slab. Excess water above the vapor retarder would increase the potential for moisture damage to floor coverings. Recent studies, including those by ACI Committee 302, have concluded that excess water above the vapor retarder would increase the potential for moisture damage to floor coverings and could increase the potential for mold growth or other microbial contamination. These studies also concluded that it is preferable to eliminate the sand layer and place the slab in direct contact with the vapor retarder, particularly during wet

weather construction. However, placing the concrete directly on the vapor retarder would require special attention to using the proper vapor retarder, concrete mix design, and finishing and curing techniques.

6. When concrete slabs are in direct contact with vapor retarders, the concrete water to cement (w/c) ratio must be correctly specified to control bleed water and plastic shrinkage and cracking. The concrete w/c ratio for this type of application is typically in the range of 0.45 to 0.50. The concrete should be properly cured to reduce slab curling and plastic shrinkage cracking. Concrete materials, placement, and curing methods should be specified by the architect/engineer.

Exterior Flatwork

1. Exterior concrete flatwork should have a minimum thickness of 4 full inches and should be reinforced as directed by the architect/engineer.

2. Assuming that movement (i.e., 1/4-inch or more) of exterior flatwork beyond the structure is acceptable, the flatwork should be designed to be independent of the building foundations. The flatwork should not be doweled to foundations, and a separator should be placed between the two.

3. Due to the high expansion potential of the soil, the exterior flatwork should be constructed over a minimum of 8 inches of low-expansive fill as described in the Site Preparation and Grading section of this report. Prior to placement of the low-expansive fill, the subgrade soil should be moistened as described in the previous sections of the report, and the moisture content should be maintained up until the exterior flatwork is placed on top.

4. Exterior flatwork adjacent to the structure should be designed to be independent of the foundation. The flatwork should not be doweled to foundations, and a separator should be placed between the two.

5. To reduce shrinkage cracks in concrete, the concrete aggregates should be of appropriate size and proportion, the water/cement ratio should be low, the concrete should be properly placed and finished, contraction joints should be installed, and the concrete should be properly cured. Concrete materials, placement and curing specifications should be at the direction of the architect/engineer; ACI 302.1R-04 and ACI 302.2R-04 are suggested as resources for the architect/engineer in preparing such specifications.

Utility Trench Backfills

1. A select, noncorrosive, granular, easily compacted material should be used as bedding and shading immediately around utility pipes. The site soils may be used for trench backfill above the select material.

2. Trench backfill in the upper 8 inches of subgrade beneath pavement areas should be compacted to a minimum of 92 percent of maximum dry density. Trench backfill in other areas should be compacted to a minimum of 90 percent. Jetting of utility trench backfill should not be allowed.

3. Where utility trenches extend under perimeter foundations, the trenches should be backfilled entirely with approved fill soil compacted to a minimum of 90 percent of maximum dry density. The zone of approved fill soil should extend a minimum distance of 2 feet on both sides of the foundation. If utility pipes pass through sleeves cast into the perimeter foundations, the annulus between the pipes and sleeves should be completely sealed.

4. Parallel trenches excavated in the area under foundations defined by a plane radiating at a 45-degree angle downward from the bottom edge of the footing should be avoided, if possible. Trench backfill within this zone, if necessary, should consist of Controlled Density Fill (Flowable Fill).

Post-Construction Site Drainage Management

1. Unpaved ground surfaces should be finish graded to direct surface runoff away from site improvements at a minimum 5 percent grade for a minimum distance of 10 feet. If this

is not practical due to the terrain or other site features, swales with improved surfaces should be provided to divert drainage away from improvements. The landscaping should be planned and installed to maintain proper surface drainage conditions.

2. Runoff from driveways, roof gutters, downspouts, planter drains and other improvements should discharge in a non-erosive manner away from foundations, pavements, and other improvements. The downspouts may discharge onto splash blocks that direct the flow away from the foundation.

3. Stabilization of surface soils, particularly those disturbed during construction, by vegetation or other means during and following construction is essential to protect the site from erosion damage. Care should be taken to establish and maintain vegetation.

4. Open areas adjacent to exterior flatwork should be irrigated or otherwise maintained so that constant moisture conditions are created throughout the year. Irrigation systems should be controlled to the minimum levels that will sustain the vegetation without saturating the soil.

5. Bio-retention basins and swales located within 10 feet of foundation elements should be lined with a 20-mil pond liner.

Required Geotechnical Observation and Testing

1. It must be recognized that the recommendations contained in this report are based on a limited number of borings and rely on continuity of the subsurface conditions encountered.

2. It is assumed that the Geotechnical Engineer will be retained to provide consultation during the design phase, to interpret this report during construction, and to provide construction monitoring in the form of testing and observation.

3. Unless otherwise stated, the terms "compacted" and "recompacted" refer to soils placed in level lifts not exceeding 8 inches in loose thickness and compacted to a minimum of 90

percent of maximum dry density. The standard tests used to define maximum dry density and field density should be ASTM D 1557-12 and ASTM D 6938-17, respectively, or other methods acceptable to the Geotechnical Engineer and jurisdiction.

4. "Moisture conditioning" refers to adjusting the soil moisture to at least 2 percentage points above optimum moisture content prior to application of compactive effort. If the soils are overly moist so that they become unstable, or if the recommended compaction cannot be readily achieved, drying the soil to optimum moisture content or just above may be necessary. Placement of gravel layers or geotextiles may also be necessary to help stabilize unstable soils. The Geotechnical Engineer should be contacted for recommendations for mitigating unstable soils.

5. At a minimum, the following should be provided by the Geotechnical Engineer:
   - Review of final grading and foundation plans,
   - Professional observation during site preparation, grading, and foundation excavation,
   - Oversight of soil compaction testing during grading,
   - Oversight of soil special inspection during grading.

6. Special inspection of grading should be provided as per Section 1705.6 and 1705.8 and Table 1705.6 and 1705.8 of the CBC; the soils special inspector should be under the direction of the Geotechnical Engineer. In our opinion, the following operations should be subject to *continuous* soils special inspection:
   - Scarification and recompaction,
   - Fill placement and compaction,
   - Over-excavation to the recommended depth.

7. In our opinion, the following operations may be subject to *periodic* soils special inspection; subject to approval by the Building Official:
   - Site preparation,
   - Compaction of utility trench backfill,

- Compaction of subgrade and aggregate base,
- Observation of foundation excavations,
- Building pad moisture conditioning.

8. It will be necessary to develop a program of quality control prior to beginning grading. It is the responsibility of the owner, contractor, or project manager to determine any additional inspection items required by the architect/engineer or the governing jurisdiction.

9. The locations and frequencies of compaction tests should be as per the recommendations of the Geotechnical Engineer at the time of construction. The recommended test locations and frequencies may be subject to modification by the Geotechnical Engineer based upon soil and moisture conditions encountered, the size and type of equipment used by the contractor, the general trend of the compaction test results, and other factors.

10. A preconstruction conference among a representative of the owner, the Geotechnical Engineer, soils special inspector, the architect/engineer, and contractors is recommended to discuss planned construction procedures and quality control requirements. Earth Systems should be notified at least 48 hours prior to beginning grading operations.

7.0 CLOSURE

This report is valid for conditions as they exist at this time for the type of project described herein. Our intent was to perform the investigation in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the locality of this project at this time under similar conditions. No representation, warranty, or guarantee is either expressed or implied. This report is intended for the exclusive use by the client as discussed in the Scope of Services section. Application beyond the stated intent is strictly at the user's risk.

If changes with respect to the project type or location become necessary, if items not addressed in this report are incorporated into plans, or if any of the assumptions stated in this report are not correct, Earth Systems should be notified for modifications to this report. Any items not specifically addressed in this report should comply with the California Building Code and the requirements of the governing jurisdiction.

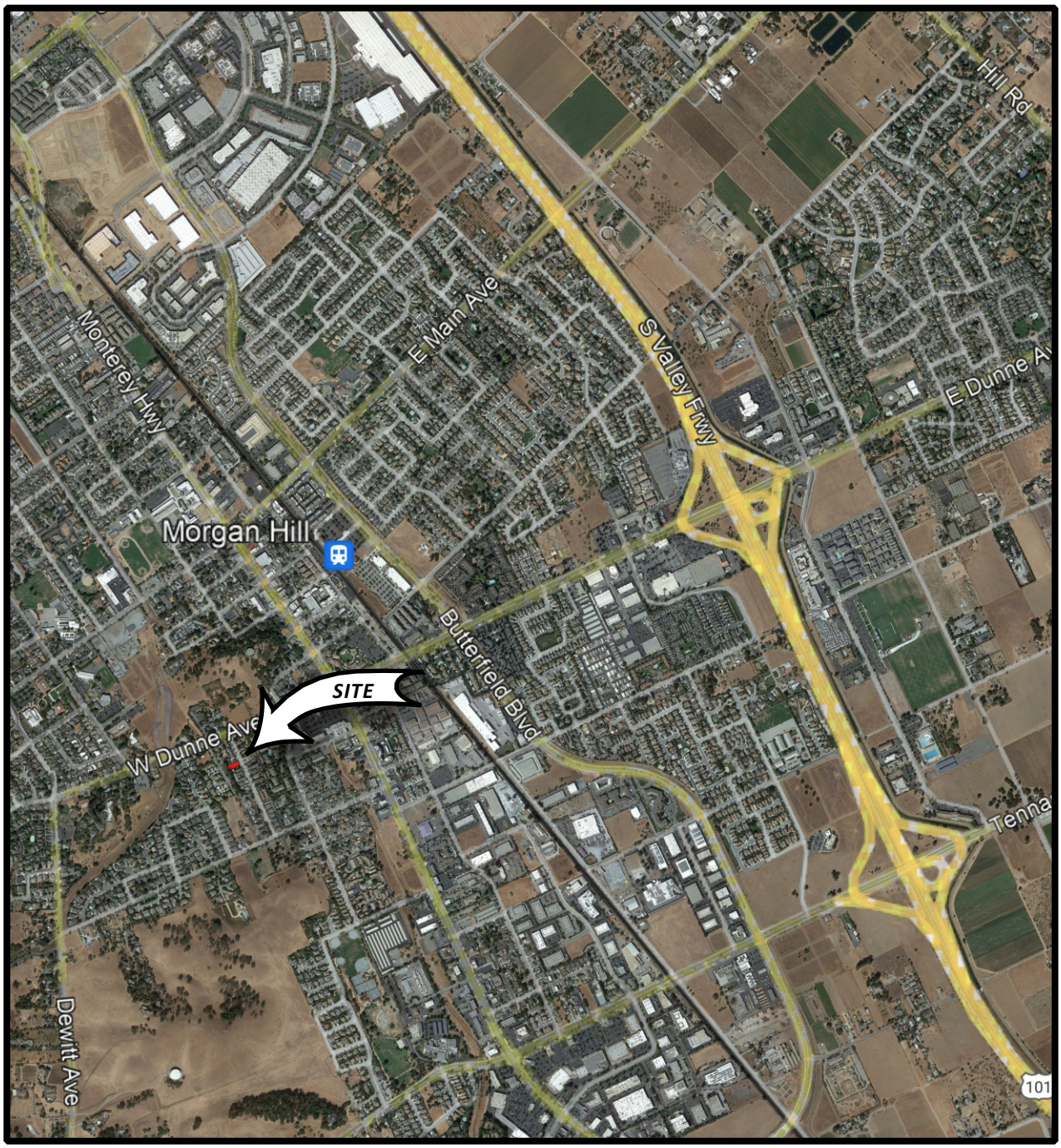
The preliminary recommendations of this report are based upon the geotechnical conditions encountered during the investigation and may be augmented by additional requirements of the architect/engineer, or by additional recommendations provided by this firm based on conditions exposed at the time of construction.

If Earth Systems is not retained to provide construction observation and testing services, it will not be responsible for the interpretation of the information by others or any consequences arising there from.

FIGURES

Figure 1

TN MN 13



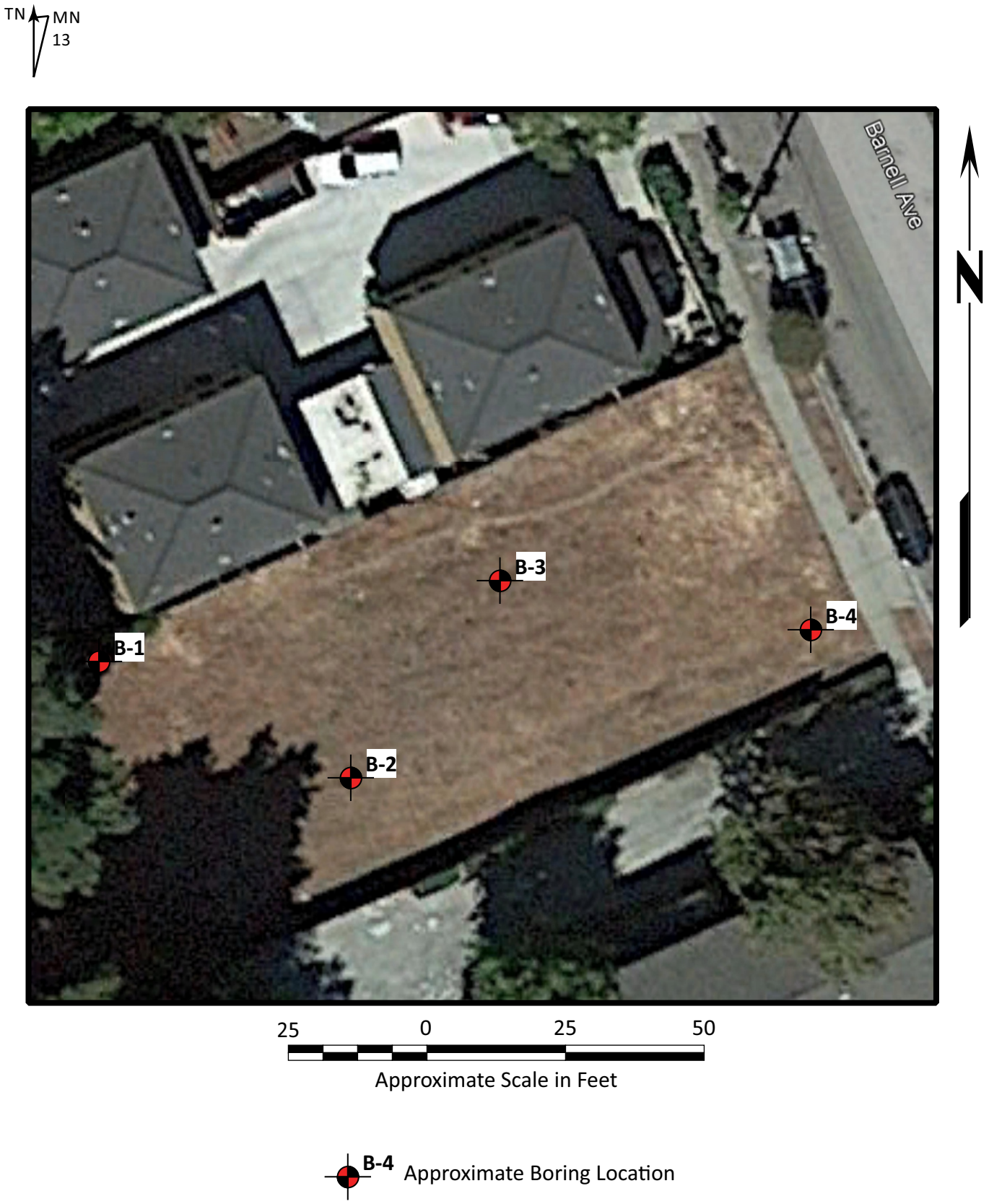
2000 0 2000 4000

Approximate Scale in Feet

Base: Google Earth (2021)

Earth Systems Pacific	Multi-Family Residential Development Barnell Avenue (APN 767-12-012) Morgan Hill, California	**Site Location Map** **305624-001**

Figure 2



Base: Google Earth (2022)

Earth Systems Pacific	Multi-Family Residential Development Barnell Avenue (APN 767-12-012) Morgan Hill, California	Site Plan 305624-001

APPENDIX A

Boring Logs (4)

Earth Systems Pacific

Boring No. 1
PAGE 1 OF 1

LOGGED BY: J. Woodard
DRILL RIG: Mobile B-24
AUGER TYPE: 6" soild Stem

JOB NO.: 305624-001
DATE: September 29, 2022

Multi Family Residential Development
Barnell Avenue
Morgan Hill, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: INTERVAL (feet)	SAMPLE NUMBER	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN.	POCKET PEN (t.s.f)
0	CH		SANDY FAT CLAY; dark brown, moist, fine to coarse sand							
1									11	
									16	
2			- orange-red, coarse angular sand, rootless	2.0 - 2.5	1-1	■			17	
									15	
3				3.5 - 4.0	1-2	■			16	
	SC		CLAYEY SAND; dark orangish brown, dense, moist, medium to coarse sand, trace fine gravel	4.0 - 4.5	1-3	■	111.6	14.5	20	
4									17	
				4.5 - 5.0	1-4	■			25	
5			- increase fine gravel	5.0 - 5.5	1-5	■	114.9	13.2	31	
									16	
6				6.0 - 6.5	1-6	■			20	
	CL		SANDY LEAN CLAY; dark orangish brown, very stiff, moist, fine to coarse sand	6.5 - 7.0	1-7	■			27	>4.5
7										
8										
9									12	
				9.0 - 9.5	1-8	■			15	
10				9.5 - 10.0	1-9	■			28	
11										
12										
13										
									10	
14	CH		FAT CLAY with SAND; brown, moist, very stiff, medium to coarse sand	14.0 - 14.5	1-10	■			13	
				14.5 - 15.0	1-11	■			19	4.0
15			Bottom of boring at 15.0'							
			Groundwater was not encountered							
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										

LEGEND: ■ 2.5" Mod Cal Sample ▭ Shelby ● SPT ○ Bulk Sample ▽ Groundwater

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Earth Systems Pacific

Boring No. 2
PAGE 1 OF 1

LOGGED BY: J. Woodard
DRILL RIG: Mobile B-24
AUGER TYPE: 6" soild Stem

JOB NO.: 305624-001
DATE: September 29, 2022

Multi Family Residential Development
Barnell Avenue
Morgan Hill, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: INTERVAL (feet)	SAMPLE NUMBER	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN.	POCKET PEN (t.s.f)
0	CH		FAT CLAY with SAND; dark brown to black, moist, fine to medium grain sand							
1									9	
			[LL = 62, PI =35]	1.5 - 2.0	2-1	■			8	
2			- very stiff	2.0 - 2.5	2-2	■	105.6	13.9	12	
3										
	CL		SANDY LEAN CLAY; orange brown, very stiff, moist, fine to medium grain sand						12	
4				4.0 - 4.5	2-3	■			13	
				4.5 - 5.0	2-4	■	114.5	13.7	17	
5										
									18	
6			- trace fine gravel	6.0 - 6.5	2-5	■			22	
				6.5 - 7.0	2-6	■			28	4.5
7										
8										
									10	
9			- increase fine gravel	9.0 - 9.5	2-7	■			16	
				9.5 - 10.0	2-8	■			22	4.5
10										
11										
12										
13										
									18	
14			- red-brown, hard, fine to coarse grained sand, trace fine gravel	14.0 - 14.5	2-9	■			21	
				14.5 - 15.0	2-10	■			29	4.5
15										
16										
17										
18										
									22	
19	CL		GRAVELY LEAN CLAY; red-brown, moist, hard, fine to coarse grained sand, trace fine gravel	14.0 - 14.5	2-11	■			24	
				14.5 - 15.0	2-12	■			27	4.5
20			▼							
21										
22										
23										
									21	
24	GC		CLAYEY GRAVEL; red-brown with dark spot, wet, very dense	24.0 - 24.5	2-13	■			25	
				24.5 - 25.0	2-14	■			36	4.5
25										
			Bottom of boring at 25.0 feet							
26			Groundwater was encountered at 20.5 feet							

LEGEND: ■ 2.5" Mod Cal Sample ▭ Shelby ● SPT ○ Bulk Sample ▼ Groundwater

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Earth Systems Pacific

Boring No. 3
PAGE 1 OF 1

LOGGED BY: J. Woodard
DRILL RIG: Mobile B-24
AUGER TYPE: 6" soild Stem

JOB NO.: 305624-001
DATE: September 29, 2022

Multi Family Residential Development
Barnell Avenue
Morgan Hill, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: INTERVAL (feet)	SAMPLE NUMBER	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN.	POCKET PEN (t.s.f)
0	CH		FAT CLAY with SAND; dark brown to black, moist, fine to medium grain sand, trace root						10	
1									10	
2			- very stiff	2.0 - 2.5	3-1	■	109.9	14.8	12	
3										
4				4.0 - 4.5	3-2	■			12 11	
5	CL		SANDY LEAN CLAY; orangish gray with red-brown, very stiff, moist, fine to medium grain sand, trace fine gravel	4.5 - 5.0	3-3	■	117.1	13.5	17	>4.5
6										
7										
8										
9			- red-brown with olive gray, stiff, fine to coarse sand	9.0 - 9.5	3-4	■			9 11	
10				9.5 - 10.0	3-5	■			15	4.5
11										
12										
13										
14			- red-brown with orengish gray, very stiff, fine to coarse grained sand	14.0 - 14.5	3-6	■			10 14	
15				14.5 - 15.0	3-7	■			18	4.5
16			Bottom of boring at 15.0 feet Groundwater was not encountered							
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										

LEGEND: ■ 2.5" Mod Cal Sample ▭ Shelby ● SPT ○ Bulk Sample ▽ Groundwater

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Earth Systems Pacific

Boring No. 4
PAGE 1 OF 1

LOGGED BY: J. Woodard
DRILL RIG: Mobile B-24
AUGER TYPE: 6" soild Stem

JOB NO.: 305624-001
DATE: September 29, 2022

Multi Family Residential Development
Barnell Avenue
Morgan Hill, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: INTERVAL (feet)	SAMPLE NUMBER	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN.	POCKET PEN (t.s.f)
0	CH		SANDY FAT CLAY; dark brown, moist, 1-3 inches subrounded gravel, [fill]						12	
1									13	
2	CH		FAT CLAY with SAND; dark brown to black, very stiff, moist, medium to coarse grain sand, rootless	2.0 - 2.5	4-1	■	109.7	14.0	12	
3									16	
4				4.0 - 4.5	4-2	■			21	
5	CL		SANDY LEAN CLAY; orangish gray with red-brown, hard, moist, fine to coarse grain sand	4.5 - 5.0	4-3	■	126.0	6.6	35	>4.5
6										
7										
8										
9									12	
10				9.0 - 9.5	4-4	■			21	
11				9.5 - 10.0	4-5	■			32	
12										
13										
14			- red-brown, medium to coarse grained sand, some plasticity						12	
15				14.0 - 14.5	4-6	■			16	
16			Bottom of boring at 15.0 feet Groundwater was not encountered	14.5 - 15.0	4-7	■			24	
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										

LEGEND: ■ 2.5" Mod Cal Sample ▭ Shelby ● SPT ○ Bulk Sample ▽ Groundwater

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

APPENDIX B

Laboratory Test Results

Multi-Family Residential Dev GER, Barnell Ave, Morgan Hill 305624-001
Phillip Penrose

BULK DENSITY TEST RESULTS

ASTM D 2937-17 (modified for ring liners)

September 30, 2022

BORING NO.	DEPTH feet	MOISTURE CONTENT, %	WET DENSITY, pcf	DRY DENSITY, pcf
1-3	3.5 - 4.0	14.5	127.7	111.6
1-5	5.0 - 5.5	13.2	130.1	114.9
2-2	2.0 - 2.5	13.9	120.2	105.6
2-4	4.5 - 5.0	13.7	130.2	114.5
3-1	2.0 - 2.5	14.8	126.2	109.9
3-3	4.5 - 5.0	13.5	132.8	117.1
4-1	2.0 - 2.5	14.0	125.0	109.7
4-3	4.5 - 5.0	6.6	134.3	126.0

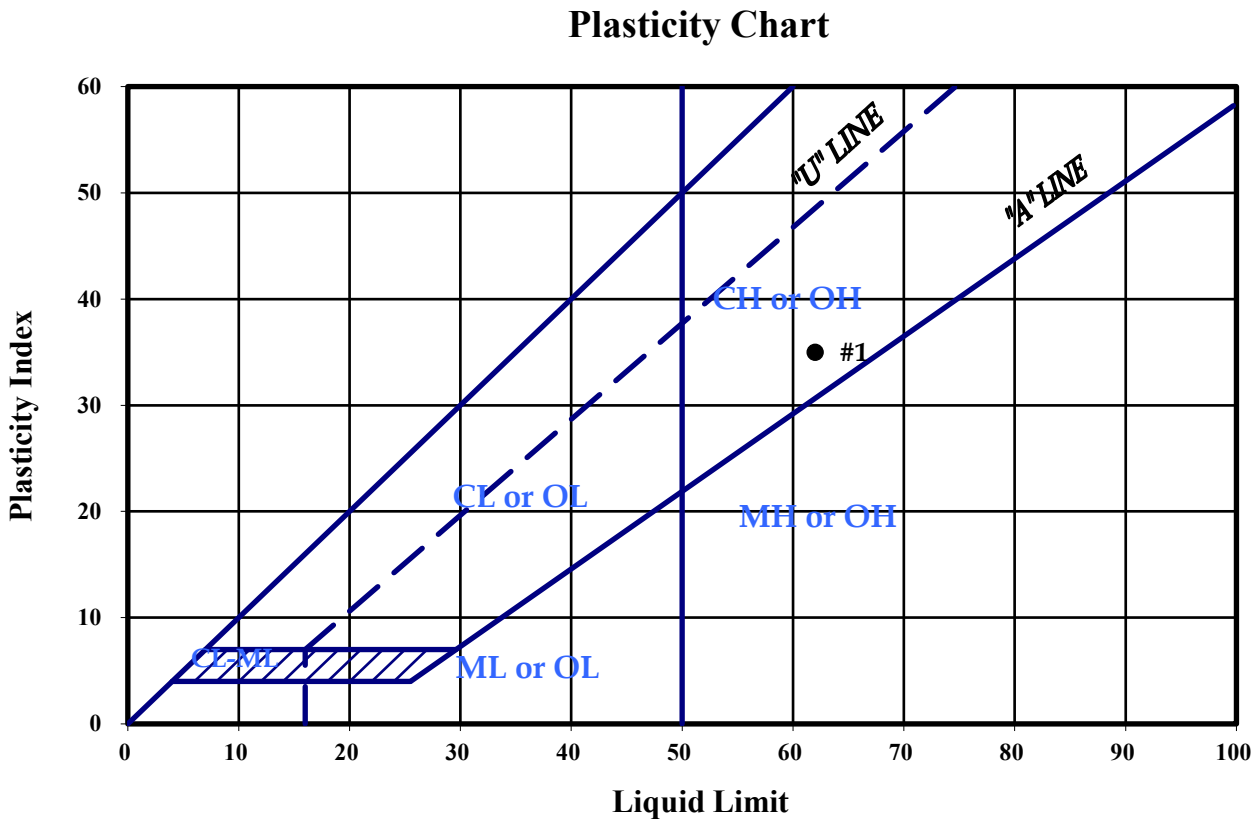
Multi-Family Residential Dev GER, Barnell Ave, Morgan Hill 305624-001

PLASTICITY INDEX

ASTM D 4318-17

September 30, 2022

Test No.:	1	2	3	4	5
Boring No.:	2-1				
Sample Depth:	1.5 - 2.0'				
Liquid Limit:	62				
Plastic Limit:	27				
Plasticity Index:	35				



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Project No. 2022-21
November 30, 2022

Mr. Gabriel Connors
Intero Real Estate Services, Morgan Hill
175 East Main Ave. Suite 130
Morgan Hill California 95037

Subject: Proposed Residential Development
Vacant Lot – Barnell Avenue
APN 767-12-012
Morgan Hill, California 95037
PERCOLATION TEST EVALUATION

Dear Mr. Connors:

At your request, ***GeoSolve, Inc.*** is pleased to present our Percolation Test Evaluation at the above referenced site. The subject property is situated within the southern Santa Clara Valley in the greater Bay Area. The property is a vacant lot situated along Barnell Avenue in Morgan Hill, California, and totals approximately 0.207-acre with Assessor Parcel Number (APN) 767-12-012 and is bounded by Barnell Avenue to the east, a park to the west, and residences to the north and south. This work was requested by the City of Morgan Hill to evaluate the percolation rate.

On November 16, 2022, a ***GeoSolve, Inc.*** field geologist observed Exploration GeoServices, Inc. drill two borings (P-1 and P-2) on the eastern and western portions of the site to approximately 6 feet below ground surface (bgs) using an 8-inch diameter hollow stem-augers. The borings were backfilled with clean water and the following percolation rates were recorded below on Table 1.

Table 1
Percolation Test Rates
Vacant Lot – Barnell Avenue
Morgan Hill, California
November 16, 2022

Percolation Test P-1				
Time	**Depth to Water (feet)**	**Minutes**	**Percolation Rate (inches per minute)**	**Percolation Rate (inches per hour)**
13:10	0.00	0	0	0
13:12	0.35	2	2.1	126
13:15	0.40	5	0.96	57.6
13:20	0.50	10	0.60	36
13:30	0.55	20	0.33	19.8
13:40	0.60	30	0.24	14.4
13:50	0.75	40	0.22	13.5
14:10	1.20	60	0.24	14.4
Percolation Test P-2				
Time	**Depth to Water (feet)**	**Minutes**	**Percolation Rate (inches per minute)**	**Percolation Rate (inches per hour)**
13:26	0.00	0	0	0
13:28	0.30	2	1.80	108
13:31	0.55	5	1.32	79.2
13:36	0.70	10	0.84	50.4
13:46	0.85	20	0.51	30.6
13:56	1.00	30	0.40	24
14:06	1.35	40	0.40	24
14:26	2.00	60	0.40	24

The final percolation rate measured in P-1 was 14.4 inches per hour and the final percolation rate measured in P-2 was 24 inches per hour for an average percolation rate at the site of 0.21 inch per minute and 19.2 inches per hour.

The subject property exhibited a percolation rate exceeding the required 1.0 inch per hour percolation rate required by the City of Morgan Hill.

If you have any questions or need further information regarding this Percolation Test Evaluation, please call us at your convenience at (925) 963-1198.

Sincerely,

GeoSolve, Inc.

Robert D. Campbell, M.S., P.G., C.E.G., Q.S.D.
Principal Engineering Geologist

Earth Systems
500 Park Center Drive, Unit 1 | Hollister, CA 95023 | 831.637.2133 | www.earthsystems.com

December 12, 2022 File No.: 305624-001

Haren Properties LLC
C/O Mr. Gabriel Connors
17045 Hill Road
Morgan Hill, CA 95037

PROJECT: MULTI-FAMILY RESIDENTIAL DEVELOPMENT
BARNELL AVENUE (APN 767-12-012)
MORGAN HILL, CALIFORNIA

SUBJECT: Addendum to Geotechnical Engineering Study

REF.: Geotechnical Engineering Study, Multi-Family Residential Development, Barnell Avenue (APN 767-12-012), Morgan Hill, California, by Earth Systems Pacific, dated November 4, 2022.

Dear Mr. Connors:

Earth Systems Pacific has prepared this addendum of soil corrosion laboratory testing to our geotechnical engineering study for the planned multi-family residential development at the above-referenced site. The laboratory test report is attached, and a brief discussion of the test results is provided below.

Laboratory testing was performed by CERCO Analytical to evaluate the corrosivity of a near surface sample. The sample was collected from a composite of the borings performed at the site at a depth of 0 to 4 feet below ground surface. The result of the resistivity test was 3,900 Ohm-cm, which suggests the soil is mildly corrosive while the pH of 7.13 suggests the soil has a neutral degree of corrosivity. The chloride ion concentrations and the sulfate ion concentrations of the sample were not detected. Based on the chloride and sulfate ion concentrations, the soil is negligibly corrosive. The redox potential is 320 mV, which indicates the soil is strongly aerated and noncorrosive. While no cement type restriction is required, in our opinion, it is generally a good practice to include some sulfate resistance measures and to maintain a relatively low water-cement ratio for concrete.

Earth Systems does not practice corrosion engineering and we recommend that a qualified corrosion engineer be consulted regarding mitigation of the corrosion effects of the site soils on metals.

It has been a pleasure to be of service to you. We trust this letter provides the requested information. If you have any questions or need any additional information, please contact the undersigned.

Sincerely,

Earth Systems Pacific

Phillip Penrose, CE 92946
Project Engineer

Brett Faust, CEG 2386
Senior Geologist

Attachment: CERCO Analytical Report No. 2210012-001

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

Client: Earth Systems Pacific
Client's Project No.: 305624-001
Client's Project Name: Multi. Family Residential Developmnt GER, Morgan Hill
Date Sampled: Not Indicated
Date Received: 7-Oct-22
Matrix: Soil
Authorization: Chain of Custody

Date of Report: 25-Oct-2022

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Conductivity (umhos/cm)*	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
2210012-001	Bag A (Composite, 0-4')	320	7.13	-	3,900	-	N.D.	N.D.

Method:	ASTM D1498	ASTM D4972	ASTM D1125M	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Reporting Limit:	-	-	10	-	50	15	15
Date Analyzed:	24-Oct-2022	24-Oct-2022	-	24-Oct-2022	-	22-Oct-2022	22-Oct-2022

Sherri Moore
Chemist

* Results Reported on "As Received" Basis
N.D. - None Detected

Quality Control Summary - All laboratory quality control parameters were found to be within established limits

EARTH SYSTEMS
500 Park Center Drive, #1 | Hollister, CA 95023 | (831) 637-2133 | www.earthsystems.com

May 23, 2023 File No.: 305624-001

Haren Properties LLC
C/O Mr. Gabriel Connors
17045 Hill Road
Morgan Hill, CA 95037

PROJECT: MULTIFAMILY RESIDENTIAL DEVELOPMENT
BARNELL AVENUE (APN 767-12-012)
MORGAN HILL, CALIFORNIA

SUBJECT: Post-Tensioned Slab Recommendations and Soil Corrosion Test Results

REF.: Geotechnical Engineering Report, Multi-Family Residential Development, Barnell Avenue (APN 767-12-012), Morgan Hill, California, by Earth Systems Pacific, dated November 4, 2022.

Dear Mr. Connors:

This report presents geotechnical design recommendations for post-tensioned slab and the results of corrosion test results performed by Earth Systems for the proposed multi-family residential development at the captioned site in Morgan Hill, California.

Site and Project Description

The site area is currently vacant and is bordered by Barnell Avenue to the northeast, a greenbelt to the southwest and existing residences to the northwest and southeast. At the time of our site investigation, the site was undeveloped and covered in grass and weeds. Site development plans were not provided for our review, but based on communication with the client, we understand the proposed development will consist of a fourplex with an accessory dwelling unit (ADU).

Site History

Earth Systems Pacific performed a geotechnical engineering investigation for the proposed multi-family development at the subject site and the results of this investigation were summarized in our report, dated November 4, 2022 (referenced above). In the report, we recommended that the anticipated building loads can be adequately supported on conventional spread/strip footings with a minimum depth of 30 inches. It is our understanding that you would prefer to use a post-tensioned slab to support the building loads, thus we are presenting these recommendations in the following sections of the report.

Scope of Services

The scope of our services included preparing recommendations for the post-tensioned slab foundations and collection, testing, and presenting the results of soil corrosion potential testing. In order to develop PT slab recommendations, we collected and tested one near surface soil sample from the site and tested it in our laboratory and performed engineering analysis. The analysis and engineering recommendations presented in the following sections of this report are based on our understanding of the proposed development at the subject site and our experience with projects of a similar nature.

Laboratory Testing

One sample was tested in the laboratory for particle size distribution (ASTM D 7928-16). The results of the test performed to measure particle size were used to aid in the design of the post-tensioned slabs. Copies of the laboratory results are attached to this report.

Corrosion Testing

In order to evaluate corrosion potential of near surface soils, one near surface sample was collected and delivered to Cerco Analytical laboratory for testing. The results of the test and a brief summary of the results as described by Cerco Analytical are attached to this report. The corrosion testing was performed just as a screening measure. Earth Systems does not practice corrosion engineering and we recommend that a qualified corrosion engineer be consulted regarding mitigation of the corrosion effects of the site soils on metals.

Post-Tensioned Slab Foundations

1. The post-tensioned slabs should be designed in accordance with the provisions of the current edition of the California Building Code and the recommendations of the Post-Tensioning Institute. Values for Edge Moisture Variation Distance and Estimated Differential Swell were calculated in accordance with the third edition of *Design of Post-Tensioned Slabs-on-Ground* by the Post-Tensioning Institute (2008).

Edge Moisture Variation Distance (e_m)	
Center Lift Condition	9.0 feet
Edge Lift Condition	5.2 feet
Estimated Differential Swell (y_m)	
Center Lift Condition	1.9 inches
Edge Lift Condition	6.3 inches
Allowable Bearing Capacity (dead load)	1,500 psf
Allowable Bearing Capacity (dead + live loads)	2,000 psf
Allowable Bearing Capacity (DL+LL+ wind or seismic)	2,500 psf
Subgrade Friction Factor (slab against subgrade)	0.3
Total settlement (static)	< 1 inch
Differential settlement (static)	< 0.5 inches

2. The building pad should be frequently moisture conditioned as necessary to maintain the soil moisture content at a minimum of 3 percent above optimum until the placement of concrete or vapor retarding membranes. The moisture content of the soil should be tested by the Geotechnical Engineer prior to placement of the concrete or vapor retarding membranes.

3. In areas where moisture transmitted from the subgrade would be undesirable, a vapor retarder underlain by a capillary break consisting of 4 inches of crushed rock should be utilized beneath the floor slab. The vapor retarder should comply with ASTM Standard Specification E 1745-17 and the latest recommendations of ACI Committee 302. The vapor retarder should be installed in accordance with ASTM Standard Practice E 1643-18a. Care should be taken to properly lap and seal the vapor retarder, particularly around utilities, and to protect it from damage during construction. A sand layer above the vapor retarder is optional.

4. If sand, gravel or other permeable material is to be placed over the vapor retarder, the material over the vapor retarder should be only lightly moistened and not saturated prior to casting the slab. Excess water above the vapor retarder would increase the potential for moisture damage to floor coverings. Recent studies, including those by ACI Committee 302, have concluded that excess water above the vapor retarder would increase the potential for moisture damage to floor coverings and could increase the potential for mold growth or other microbial contamination. These studies also concluded that it is preferable to eliminate the sand layer and place the slab in direct

contact with the vapor retarder, particularly during wet weather construction. However, placing the concrete directly on the vapor retarder would require special attention to using the proper vapor retarder, concrete mix design, and finishing and curing techniques.

5. When concrete slabs are in direct contact with vapor retarders, the concrete water to cement (w/c) ratio must be correctly specified to control bleed water and plastic shrinkage and cracking. The concrete w/c ratio for this type of application is typically in the range of 0.45 to 0.50. The concrete should be properly cured to reduce slab curling and plastic shrinkage cracking. Concrete materials, placement, and curing methods should be specified by the architect/engineer.

6. To further protect moisture-sensitive floor coverings, the perimeters of the post-tensioned slabs should be deepened to penetrate a minimum of 4 inches into the subgrade soil. Also, the concrete could be proportioned to reduce its porosity (and its corresponding potential for transmitting moisture) by limiting the w/c ratio to 0.48 or less.

7. Post-tensioned slabs should be constructed and maintained in accordance with the publication *Construction and Maintenance Manual for Post-Tensioned Slab-on-Ground Foundations* by the Post-Tensioning Institute. Particular attention should be paid to the "Property Owner Maintenance" and "Landscaping" sections of the Manual.

If you have any questions or need any additional information, please do not hesitate to contact our office.

Sincerely,

Earth Systems Pacific

Phillip Penrose, CE 92946
Project Engineer

Ajay Singh, GE 3057
Principal Engineer

Attachments: Laboratory Test Results
Corrosivity Analysis

Multi-Family Residential Development, Morgan Hill 305624-001
Phillip Penrose

PARTICLE SIZE ANALYSIS

ASTM D 7928-16

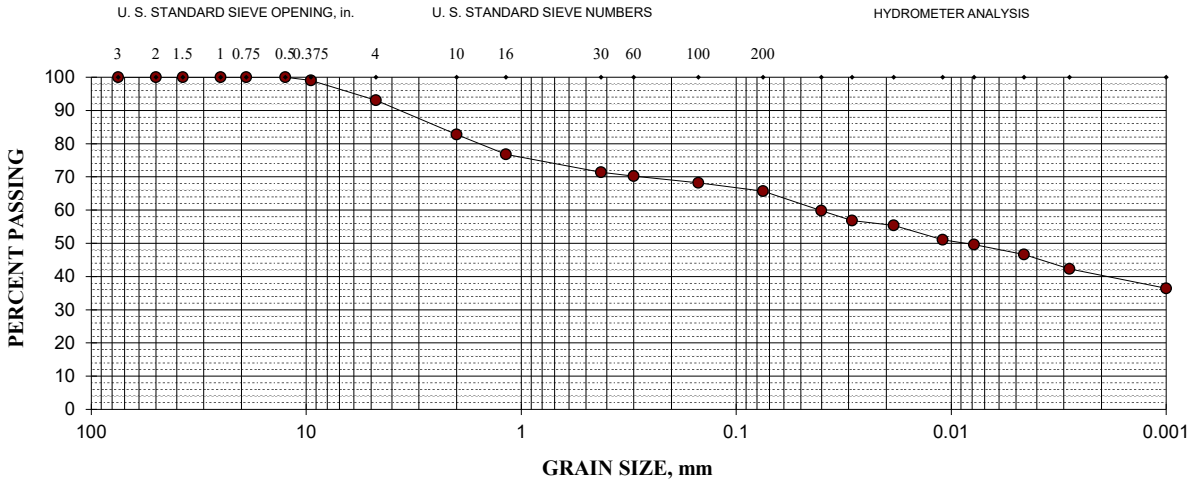
Bag A 4/26/2023

May 9, 2023

Specific Gravity = 2.65 (assumed)

Gravel = 7%; Sand = 27%; Silt = 19%; Clay = 47%

Sieve size	% Retained	% Passing
3" (75.0-mm)	0	100
2" (50.0-mm)	0	100
1-1/2" (37.5-mm)	0	100
1" (25.0-mm)	0	100
3/4" (19.0-mm)	0	100
1/2" (12.5-mm)	0	100
3/8" (9.5-mm)	1	99
#4 (4.75-mm)	7	93
#10 (2.00-mm)	17	83
#16 (1.18-mm)	23	77
#40 (425-µm)	29	71
#50 (300-µm)	30	70
#100 (150-µm)	32	68
#200 (75-µm)	34	66
Hydrometer Analysis		
40-µm		60
29-µm		57
18-µm		55
11-µm		51
8-µm		50
4.6-µm		47
2.8-µm		42
Colloids		36



CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

15 May, 2023

Job No. 2305000
Cust. No. 11221

Mr. Jim Woodard
Earth Systems
4500 Park Center Drive, Suite 1
Hollister, CA 95023

Subject: Project No.: 305624-001
Project Name: Multi-Family Res. Dev. – Morgan Hill
Corrosivity Analysis – ASTM Test Methods

Dear Mr. Woodard:

Pursuant to your request, CERCO Analytical has analyzed the soil sample submitted on May 01, 2023. Based on the analytical results, a brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurement, this sample is classified as "moderately corrosive". All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentration reflects none detected with a reporting limit of 15 mg/kg.

The sulfate ion concentration reflects none detected with a reporting limit of 15 mg/kg.

The sulfide ion concentrations reflect none detected with a detection limit of 50 mg/kg

The pH of the soil is 6.98 which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potential is 330-mV and is indicative of potentially "slightly corrosive" soils resulting from anaerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call *JDH Corrosion Consultants, Inc. at (925) 927-6630.*

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
CERCO ANALYTICAL, INC.

J. Darby Howard, Jr., P.E.
President

JDH/jdl
Enclosure

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

Client: Earth Systems Pacific
Client's Project No.: 305624-001
Client's Project Name: Multi-Family Res. Dev. - Morgan Hill
Date Sampled: 26-Apr-23
Date Received: 1-May-23
Matrix: Soil
Authorization: Chain of Custody

Date of Report: 15-May-2023

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Conductivity (umhos/cm)*	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
2305000-001	HB Bulk Bag A	330	6.98	-	2,300	N.D.	N.D.	N.D.

Method:	ASTM D1498	ASTM D4972	ASTM D1125M	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Reporting Limit:	-	-	10	-	50	15	15
Date Analyzed:	4-May-2023	5-May-2023	-	9-May-2023	10-May-2023	2-Mar-2023	2-Mar-2023

Cheri McMillen
Chemist

* Results Reported on "As Received" Basis
N.D. - None Detected

Quality Control Summary - All laboratory quality control parameters were found to be within established limits

RECORDING REQUESTED BY:

CITY OF MORGAN HILL

WHEN RECORDED MAIL DOCUMENT TO:

CITY CLERK
CITY OF MORGAN HILL
17575 PEAK AVENUE
MORGAN HILL, CA 95037

RECORD AT NO FEE PER GOVERNMENT CODE SECTIONS 6103 & 27383

(ENTER APN OR LEAVE BLANK)

SPACE ABOVE THIS LINE FOR RECORDER'S USE

STORMWATER BEST MANAGEMENT PRACTICES, OPERATION, AND MAINTENANCE AGREEMENT

Upon completion of your review of this document, please initial the lines below to indicate that you understand its contents, including the following:

_____ I understand that my property is subject to ongoing water quality regulations and that my property may have stormwater treatment areas and facilities.

_____ I understand that there may be areas on my property that are reserved for stormwater treatment and which cannot be significantly altered, improved, or built upon.

_____ I understand that I will be responsible for having the stormwater treatment areas and facilities inspected regularly by a Qualified Stormwater Practitioner (QSP), in compliance with City and State regulations.

_____ I understand that I will be responsible for ensuring that all stormwater treatment areas and facilities continue to function satisfactorily, and I will have maintenance completed, as needed, based on inspection findings.

_____ I understand that there is an annual fee I will need to pay for the City's administration of this program.

_____ I understand that the fee for City administration of this program does not include inspections, and I will be expected to hire and pay my chosen QSP.

_____ I understand that some of the stormwater treatment facilities serving my property may be on a nearby property and that I may have a proportional responsibility for their inspection, operation, and maintenance.

THIS STORMWATER BEST MANAGEMENT PRACTICES OPERATION, AND MAINTENANCE AGREEMENT ("AGREEMENT") is made and entered into this _____ day of _____, **ENTER YEA)**, by **(ENTER OWNER/HOA)**, (hereinafter referred to as "COVENANTOR") and the City of Morgan Hill ("CITY"). CITY and COVENANTOR may be referred to individually as a "Party" or collectively as the "Parties" throughout this AGREEMENT.

RECITALS:

This AGREEMENT is made and entered into with reference to the following facts:

A. CITY is authorized and required to regulate and control the disposition of storm and surface waters as set forth in CITY's National Pollutant Discharge Elimination System permit.

B. COVENANTOR is the owner of a certain tract or parcel of land more particularly described in Exhibit "A" attached hereto and incorporated herein by this reference (the "PROPERTY").

C. COVENANTOR desires to construct certain improvements of the kind or nature described in Morgan Hill Municipal Code Chapter 18.140 (the "ORDINANCE") on the PROPERTY that may alter existing stormwater conditions on both the PROPERTY and adjacent lands.

D. To minimize adverse impacts due to these anticipated changes in existing storm and surface water flow conditions, COVENANTOR is required by CITY to implement Best Management Practices ("BMPs") and to build and maintain, at COVENANTOR's expense, stormwater management facilities ("FACILITIES"), more particularly described and shown in the **(ENTER NAME OF STORMWATER MAINTENANCE PLAN)** prepared by **(ENTER CIVIL ENGINEER COMPANAY)** and dated **(ENTER DATE OF PLAN)**, which plans and any amendments thereto, are on file with CITY's Development Services Department, and are hereby incorporated by this reference.

E. CITY has reviewed and approved the Stormwater Runoff Management Plan (the "PLAN") subject to the execution of this AGREEMENT.

NOW, THEREFORE, in consideration of the benefit received and to be received by COVENANTOR, its successors, and assigns, as a result of CITY's approval of the Stormwater Runoff Management Plan, COVENANTOR, hereby covenants and agrees with CITY as follows:

1. Covenants Running with the Land; Property Subject to Agreement: All of the real property described in Exhibit "A" shall be subject to this AGREEMENT. It is intended and determined that the provisions of this AGREEMENT shall run with the land and shall be binding on all parties having or acquiring any right, title, or interest in the real PROPERTY or any portion thereof and shall be for the benefit of each owner of any of said parcels or any portion of said PROPERTY and shall inure to the benefit of and be binding upon each successor in interest of the owners thereof. Each and all of the limitations, easements, obligations, covenants, conditions, and restrictions contained herein shall be deemed to be, and shall be construed as, equitable servitudes, enforceable by any of the owners of any of the PROPERTY subject to this AGREEMENT against any other owner, tenant or occupant of the said PROPERTY, or any portion thereof.

2. Responsibility for Installation, Operation, and Maintenance: At its sole expense, COVENANTOR, its successors, and assigns, shall construct, operate, and perpetually maintain the FACILITIES in strict accordance with the PLAN and any amendments thereto that have been approved by CITY or required by the ORDINANCE. COVENANTORS with structural FACILITIES serving their property shall conduct inspections on the property in accordance with Exhibit "B."

3. Facility Modifications: At its sole expense, COVENANTOR, its successors, and assigns, shall make such changes or modifications to the FACILITIES as may be determined as reasonably necessary by CITY to ensure that the FACILITIES are properly maintained and continue to operate as originally designed and approved. COVENATOR agrees that it shall not modify the BMPs and shall not allow BMP maintenance activities to alter the designed function of the FACILITIES from its original design unless approved by CITY prior to the commencement of the proposed modification or maintenance activity.

4. Facility Inspections by City: At reasonable times and in a reasonable manner as provided in the ORDINANCE, CITY, its agents, employees, and contractors shall have the right of ingress and egress to the FACILITIES and the right to inspect the FACILITIES in order to ensure that the FACILITIES are being properly maintained, are continuing to perform in an adequate manner, and are in compliance with the ORDINANCE, the PLAN and any amendments thereto approved by CITY.

5. Failure to Perform Required Facility Repairs or Modifications: Should either COVENANTOR or its successors and assigns fail to implement the BMPs, maintain the FACILITIES, or correct any defects in the FACILITIES in accordance with the approved design standards and/or the PLAN, and in accordance with the law and applicable regulations of the ORDINANCE, after thirty (30) days from the date of the written notice from CITY, CITY shall have the right to enter the PROPERTY to perform remedial work, for which CITY will collect reimbursement for such work from COVENANTOR. Additionally, conditions from failure to implement the BMPs or to maintain or correct the FACILITIES shall be deemed a nuisance subject to abatement of such conditions as provided in Chapter 1.18 of the Morgan Hill Municipal Code. In addition, CITY may pursue other such remedies as provided by law, including, but not limited to, such civil and criminal remedies set forth in the ORDINANCE.

6. Indemnity: COVENANTOR, its successors, and assigns, shall defend, indemnify, and hold CITY harmless of and from any and all claims, liabilities, actions, causes of action, and damages for personal injury and property damage, including, without limitation, reasonable attorneys' fees, arbitration fees, or costs and court costs, arising out of or related to COVENANTOR's, its successors', and/or assigns' construction, operation, or maintenance of the FACILITIES except claims, liabilities, actions, causes of action, and damages that arise out of CITY's sole negligence or willful misconduct or the sole negligence or willful misconduct of any of CITY'S employees, agents, representatives, contractors, vendors, or consultants.

7. Obligations and Responsibilities of Covenantor: Initially, COVENANTOR is solely responsible for the performance of the obligations required hereunder and, to the extent permitted under applicable law, the payment of any and all fees, fines, and penalties associated with such performance or failure to perform under this AGREEMENT. Notwithstanding any provisions of this AGREEMENT to the contrary, upon the recordation of a deed or other instrument of sale, transfer or other conveyance of fee simple title to the PROPERTY or any portion thereof (a "Transfer") to a third party (the "Transferee"), COVENANTOR shall be released of all of its obligations and responsibilities under this AGREEMENT accruing after the date of such Transfer to the extent such obligations and responsibilities are applicable to that portion of the PROPERTY included in such Transfer, but such release shall be expressly conditioned upon the Transferee assuming such obligations and responsibilities by recorded written agreement for the benefit of CITY. Such written agreement may be included in the Transfer deed or instrument, provided that the Transferee joins in the execution of such deed or instrument. A certified copy of such deed, instrument, or agreement shall be provided to CITY. The provisions of the preceding

three sentences shall be applicable to the original COVENANTOR and any successor Transferee who has assumed the obligations and responsibilities of COVENANTOR under this AGREEMENT as provided above.

COVENANTOR is responsible for paying to CITY an annual administrative fee as established by City Council to cover costs associated with review of inspection reports, logging inspections as required for compliance with CITY'S Phase II NPDES Permit, reporting to the Regional Water Quality Control Board, and follow-up as needed. City Council shall update fee schedules thereafter as applicable in perpetuity. COVENANTOR will be responsible for paying late fees and other penalties for submitting inspection reports and other documentation required by CITY more than seven days after submission deadlines.

8. Property Transfer: Nothing herein shall be construed to prohibit a transfer by COVENANTOR to subsequent owners and assigns.

9. Attorneys' Fees: In the event that any Party institutes legal action or arbitration against the other to interpret or enforce this AGREEMENT, or to obtain damages for any alleged breach hereof, the prevailing party in such action or arbitration shall be entitled to reasonable attorneys' or arbitrators' fees in addition to all other recoverable costs, expenses, and damages.

10. Further Documents: The Parties covenant and agree that they shall execute such further documents and instructions as shall be necessary to fully effectuate the terms and provisions of this AGREEMENT.

11. Entire Agreement: This AGREEMENT constitutes the entire agreement of the Parties with respect to the subject matter contained herein and supersedes all prior agreements, whether written or oral. There are no representations, agreements, arrangements, or undertakings, oral or written, that are not fully expressed herein.

12. Severability: In the event any part or provision of this AGREEMENT shall be determined to be invalid or unenforceable under the laws of the State of California, the remaining portions of this AGREEMENT that can be separated from the invalid, unenforceable provisions shall, nevertheless, continue in full force and effect.

13. No Waiver: The waiver of any covenant contained herein shall not be deemed to be a continuing waiver of the same or any other covenant contained herein.

14. Amendment: This AGREEMENT may be amended in whole or in part only by mutual written agreement. Any such amendment shall be recorded in Santa Clara County, California. In the event any conflict arises between the provisions of any such amendment and any of the provisions of any earlier document or documents, the most recently duly executed and recorded amendment shall be controlling.

15. Authority to Execute: The persons executing this AGREEMENT on behalf of the parties warrant that they are duly authorized to execute this AGREEMENT.

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16. In the event that CITY shall determine, at its sole discretion, at any future time, that the FACILITIES are no longer required, then at the written request of COVENANTOR, its successors, and/or assigns, CITY shall execute a release of this AGREEMENT which COVENANTOR, its successors, and/or assigns, shall record in the Recorder's Office, at its expense.

Executed the day and year first above written.

COVENANTOR:

By: _____

Name: **(ENTER NAME)**

Title: **(ENTER TITLE)**

CITY OF MORGAN HILL:

By: _____

Name: **SCOTT C. CREER**

Title: **CITY ENGINEER, CITY OF MORGAN HILL**

APPROVED AS TO FORM:

By: _____

Name: **DONALD A. LARKIN**

Title: **CITY ATTORNEY, CITY OF MORGAN HILL**

EXHIBIT “A”

ENTER TITLE

ENTER LEGAL DESCRIPTION;

(ATTACH PLAT AS NEEDED)

EXHIBIT "B"

INSPECTION REQUIREMENTS

Inspections shall occur on a schedule compliant with the requirements imposed by the State of California. At this time, the following requirements are in place:

(a) The COVENANTOR shall be responsible for having all stormwater management facilities inspected for condition and function by a certified Qualified Stormwater Practitioner (QSP).

(b) Stormwater facility inspections completed by the QSP shall be completed once in the fall in preparation for the wet season, and once in the spring. Fall inspections shall include a visual inspection only. The spring inspection shall include a visual inspection as well as completion of technical tests and observations required under the CITY'S Phase II National Pollutant Discharge Elimination System (NPDES) Permit. COVENANTOR shall provide the CITY with records of inspections using the City's approved visual inspection report template (fall and spring inspections) and applicable City approved technical field data sheets (spring inspection only). COVENANTOR shall submit to the CITY all inspection documents with completed records of inspections, maintenance, and repair.

COVENANTOR understands that these requirements may be changed in the future as the direct result of changes in the regulations imposed on CITY or COVENANTOR by the State of California. CITY shall provide COVENANTOR with reasonable notice of changes in these requirements.

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of **California**
County of **Santa Clara**

On _____ 20____, before me, _____ a Notary Public in and for said County and State, personally appeared _____ proved to me on the basis of satisfactory evidence to be the person whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____
SIGNATURE OF NOTARY PUBLIC

(ABOVE AREA FOR NOTARY SEAL)

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of **California**
County of **Santa Clara**

On _____ 20____, before me, _____ a Notary Public in and for said County and State, personally appeared _____ proved to me on the basis of satisfactory evidence to be the person whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____
SIGNATURE OF NOTARY PUBLIC

(ABOVE AREA FOR NOTARY SEAL)

MH engineering Co.

Contract/ Proposal for Professional Services

Date: _____ **Job #**: 222100

This agreement is entered into by and between MH engineering Co. and

Client:

Harren Properties, LLC

C/O Gabriel Conners

17045 Hill Road Morgan Hill, CA 95037
gconnors@interorealestate.com
408-960-9113

Project: LJ Commons

Scope of Work: Post construction storm water BMP inspections and annual certification.

Inspection/Certification requirements:
as outlined in the City approved storm water runoff management plan

Deliverables:

a.) **Storm water treatment control (BMP) inspection: Pre-Rainy season before Sept. 15th and Post-Rainy season before May 1st every year.**
b.) **Storm water treatment control (BMP) Annual Inspection Certification before Sept. 30th each year.**

Fee for services: The fee for the proposed professional services shall be on a T&M basis @ $190/hour. Inspection and reporting to the City is estimated to take approximately 6-8 hours each occurrence. Client to be billed as the work accrues on a monthly basis with any remainder due upon issuance of deliverables. Payment is overdue after 30 days. Accounts past due will are subject to a 1-1/2% per month finance charge. All change orders shall be presented to the Client for review and authorization prior to any work being performed. Fees for all change orders shall be agreed in advance of work. Time and Material change orders shall be billed at the hourly rates shown on the attached MH Billing Rate Sheet Exhibit "B". This proposal is subject to change if not accepted within 60 days of the date above.

Hourly Fee Schedule: See attached Exhibit B.

Reimbursable Expenses: The above fee does not include reproduced plots and prints. Blueprinting, copies, and other reproducible expenses shall be invoiced at their actual cost and shall be included in the final invoice.

Termination: Termination of this contract may be invoked by either party and must be in written form. Payment for services completed through the termination date will be due and payable at that time. Payment for contracts that are not time and materials, i.e. fixed fee, will be charged at the actual time spent times the hourly rate, not to exceed the fixed fee price.

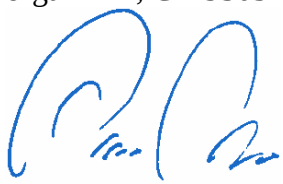
MH engineering Co.

Schedule: MH engineering Co. will diligently proceed to complete the professional services as described in this agreement in a timely manner. However it is expressly agreed that MH engineering Co. shall not be held responsible for delays in performance occasioned by factors beyond MH engineering Co's control.

Limits of Liability: Client agrees to limit the liability of MH engineering Co, it's principals, agents, employees, officers, directors, shareholders, and consultants, to client and to all contractors and subcontractors on the project, for any claim or action arising in any action at law whether in tort or contract and damages therefrom, or any suit in equity or other proceedings, and from any claimed error, omission or other professional negligence in regard to this project to the sum of five thousand dollars ($5,000) or the fee to be paid by the client, whichever is greater.

I have read and understand the above contract including the limitation of liability provision and acknowledge this act by signing below:

MH engineering Co.
16075 Vineyard Blvd.
Morgan Hill, CA 95037



By: Arman Nazemi, PE , PLS

Date: June 22, 2023

Client:

MH engineering Co.
16075 Vineyard Blvd. Morgan Hill, CA 95037-408) 779-7381

Storm Water Treatment Control Operation & Maintenance Plans

I. BMP-1. Site Housekeeping

1 Objective:

1.1 to reduce impacts from storm water runoff by developing and implementing good housekeeping practices.

2 General Housekeeping

2.1 Keep parking areas, material storage and staging areas clean and orderly.

2.2 Establish a daily checklist to confirm cleanliness and adherence to proper storage and security. Where feasible, individual employees should be assigned specific inspection responsibilities and given the authority to remedy any problems found.

2.3 Provide an adequate number of trash and recycling receptacles.

2.4 Post "No Littering" signs and enforce anti-littering laws.

2.5 Dispose of wash water properly. Wash water shall not be allowed to flow to the storm drain system.

2.6 Sediment and sweeping debris shall be properly disposed.

3 Mechanical Sweeping

3.1 Mechanical sweeping shall be performed on a scheduled basis. The frequency of mechanical sweeping shall be based on visual observation of waste accumulation.

3.2 Mechanical sweeping equipment shall only be used by personnel trained in using mechanical sweeping equipment.

3.3 Mechanical sweeping of all outside equipment staging areas, materials storage areas and parking areas will be performed at least once prior to the onset of the wet season (September 15).

3.4 Mechanical sweeping will be coordinated with maintenance activities on other storm water treatment measures located on the site (i.e. stormceptors, CDS units, drain inlet filters).

3.5 Dispose of debris properly.

4 Manual Sweeping

4.1 Manual sweeping will be used in areas where mechanical sweeping cannot be effectively implemented.

4.2 Manual sweeping will be coordinated with maintenance activities on other storm water treatment measures located on the site.

4.3 Dispose of debris properly.

5 Surface Cleaning

5.1 Surface cleaning shall be used in areas where heavy oil deposits are encountered.

5.2 Dry cleaning methods (e.g. application of absorbent followed by sweeping and vacuuming) shall be employed first to prevent the discharge of pollutants to the storm drain system.

5.3 If wet cleaning is required to effectively remove pollutants, all wash water shall be collected and disposed to landscape or the sanitary sewer, as appropriate. If discharge to the sanitary sewer is necessary, prior approval from City of Morgan Hill is required.

5.4 Dispose of debris properly.

6 Vector Control

6.1 Ensure that there are no areas of standing water on site. Areas of standing water shall be drained or cleared as soon as they are located,

6.2 Vector Control District: The Santa Clara County Vector Control District (SCCVCD) will be contacted as needed for assistance should any mosquito issues arise. Mosquito larvicides should be applied only when absolutely necessary as indicated by the SCCVCD, and then only be a licensed professional or contractor. The contact information for SCCVCD follows:

Santa Clara County Vector Control District
1580 Berger Dr.
San Jose, Ca 95112
Phone: (408) 918-4770

7 Pesticide Reduction Plan and Measures

7.1 Objectives: to reduce or eliminate the use of chemicals necessary to prevent pests of the landscape and to reduce the potential for pesticides to runoff the landscape.

7.2 Employ non-chemical controls (biological, physical and cultural controls) before using chemicals to treat a pest problem.

7.3 Use geotextiles and apply 2-4 inches of mulch to exposed soils to prevent weed growth.

7.4 Replace problem plants with locally adapted, pest resistant plants. Do not plant invasive species.

7.5 Prune plants properly and at the appropriate time of year.

7.6 Limit fertilizer use unless soil testing indicates a deficiency. Slow-release or organic fertilizer is preferable.

7.7 Provide adequate irrigation for landscape plants. Do not over water.

7.8 Sweep up spilled fertilizer and pesticides. Do not wash away or bury such spills.

7.9 If chemical controls are necessary, use least-toxic pesticide first. Avoid the use of broad-spectrum pesticides.

7.10 Do not over apply pesticide. Spray only where the infestation exists. Follow the manufacturer's instructions for mixing and applying materials.

7.11 Only licensed, trained pesticide applicators shall apply pesticides.

7.12 Apply pesticides at the appropriate time to maximize their effectiveness and minimize the likelihood of discharging pesticides into runoff. With the exception of pre-emergent pesticides, avoid application if rain is expected.

7.13 Unwanted/unused pesticides shall be disposed as hazardous waste.

7.14 Correspondence: Correspondence regarding operations, inspections and maintenance of the storm water treatment measures shall be provided to the City of Morgan Hill, Public Works, Engineering as required and according to the schedule outlined in this SWRMP.

NOTE: Best Management Practices delineated in this Operations & Maintenance Agreement are minimum requirements. More stringent requirements may apply to specific projects as environmental mitigation measures under the California Environmental Quality Act, and/or as conditions of approval for a development project (such as a map, a planned district, a zoning administrator permit, a conditional use permit, or other permit or project approval by the City).

II. BMP – Inlet sumps:

1. Objectives:

1.1. Site runoffs from roof and pavement area are to be captured into the inlet sumps for pretreatment. The inlet sumps as part of pre-treatment located prior to Storm Tech SC-740 will remove the sediments, debris and trash before entering the underground structure for infiltration and draining into public storm drain structures. Therefore, most maintenance efforts should be directed to pre- treatment structures to ensure they are functioning properly.

2. Monitoring Inlet sumps:

2.1. The inlet sumps are acting as pre-treatment measures capturing trash and sediments. It is crucial to check the condition of the inlet on a regular basis. The inlets grates, sump area are the most susceptible area of structure that will cause system to fail when they are not maintained properly due to accumulation of trash and sediments. Typically, inlet sumps must be monitored for sediment deposit and removal of such to ensure sediment free flow enter the infiltration chambers. The monitoring requires visual inspection..

.

3. Maintenance Intervals

3.1. Maintenance Schedules for the Inlet sumps and Underground storage SC-740 must be on a regular basis. A standard maintenance schedule may include quarterly inspections through the first year of use, with yearly inspections thereafter. Flushing and cleaning of the sediments inside the inlet sumps and underground storage tank should be performed if sediment should reach a pre-determined depth suggested by manufacturer.

III. BMP-3: ADS Storm Tech SC-740:

4. Objectives:

4.1. With adequate pre-treatment of storm water before it enters the ADS Storm Tech underground storage, heavy sediments, trash, and other debris will not enter the system. Therefore, most maintenance efforts should be directed at the pre- treatment structures to ensure they are functioning properly. To monitor the accumulation of fine sediments that may enter the detention/retention area, ADS Storm Tech underground storage systems may include a monitoring well, flush ports, or both.

5. Inspection Ports

5.1. 10" Inspection Ports/Cleanouts have been provided above the sump at each start chamber per detail shown on Sheet 10 and manufacturer's recommendations. Secondary rows have Inspection Ports/Cleanouts located near the end of each row to assess sediment build up and clean out any potential sediment that enters the second row of chambers.

6. Flush Ports

6.1. Inlets and risers are used as flush ports. As water is pumped into water will flush down to the bottom of the system to create turbulence, thereby re-suspending accumulated sediments.

6.2. After pumping water into the pipe, flushing is completed by vacuuming sediment laden water out of the system either through the inlet structure or through the flush port. Manufacturer recommends 10" cleanouts/inspection ports for access with a vacuum system to remove any sediment build up.

7. Installing the Maintenance System

7.1. Maintenance inlets and risers will be installed with the initial construction

8. Maintenance Intervals

8.1. Maintenance Schedules for the ADS Storm underground storage system are a function of the contributing area and the type of pre- treatment specified. A standard maintenance schedule may include quarterly inspections through the first year of use, with yearly inspections thereafter. Flushing should be performed if sediment should reach a pre-determined depth or volume of the storage capacity which reduces performance of the system to unacceptable levels.

9. Availability

9.1. All system components, including caps, lids, and valve boxes are available from local suppliers.

Filtration Device

BMP RAM v4.0 Field Observation Datasheet					
Observation Date					
Observer Name					
Remaining Capacity		**Conveyance**			
BMP ID	Depth (ft)	Inlet/Outlet TCD (Y/N)	Functioning as intended?	If **NOT** functioning as intended, indicate type of action required	
				Requires debris removal?	Possible advanced maintenance?
			(Y/N)	(Y/N)	(Y/N)

Notes:

MH engineering Co.

Storm Water Treatment Control
Operation & Inspection Logs, Forms & Checklists

MH engineering Co.

Annual Stormwater BMP Inspection & Maintenance Log

Facility Name _____

Location: _____

Begin Date: _____ End Date: _____

Date	BMP#	BMP Description	Inspected By	Cause for inspection	Exceptions noted	Comments and Actions Taken

Instructions: Instructions: Record all inspections and maintenance for all treatment BMPs on this form. Use additional log sheets and/or attach extended comments or documentation as necessary. Submit a copy of the completed log with the annual independent inspectors' report to the City, and start a new log at that time.

- BMP ID# — Always use ID# from the Operation and Maintenance Manual.
- Inspected by — Note all inspections and maintenance on this form, including the required independent annual inspection.
- Cause for inspection — Note if the inspection is routine, pre-rainy-season, post-storm, annual, or in response to a noted problem or complaint.
- Exceptions noted — Note any condition that requires correction or indicates a need for maintenance.
- Comments and actions taken — Describe any maintenance done and need for follow-up.

MH engineering Co.

Storm Water BMP Annual Inspection Certification

This form is to be completed and submitted annually by ***September 30*** to the City of Morgan Hill Public Works Director.

Project Information

Project Name _____

Property Address: _____

Owner/Developer _____

APN # : Date of Inspection: _____

BMP Description and Number: (identify all that apply)

☐ Bioretention Areas	☐ Detention Basin	☐ Vegetated (Bio) Swale
☐ Atlantis Raintank	☐ Filtration Basin	☐ Riparian Buffer
☐ Permeable pavement	☐ Proprietary Devices	☐ Rooftop Runoff/Harvesting
☐ Sand Filter	☐ Stormwater Wetlands	☐ Pump System
☐ Underground Storage/Detention	☐ Other (Describe):	_____

General Information for all BMPs:

Yes	No	N/A	
☐	☐	☐	Has sediment accumulated in the inlet, outlet or forebay?
☐	☐	☐	Are there signs of erosion or any denuded areas?
☐	☐	☐	Is there trash or debris that needs to be removed? (esp. at outlet structures)
☐	☐	☐	Are algae, aquatic weeds or invasive plants (particularly cattails) present?
☐	☐	☐	Is there evidence of cracks, separation or alignment problems with pipes?
☐	☐	☐	Are rip-rap dissipater pads damaged, clogged with vegetation or insufficient?
☐	☐	☐	For dry detention ponds, is there basin holding water longer than 5 days after a storm event?
☐	☐	☐	Is there evidence of muskrat activity?
☐	☐	☐	Are vegetated slopes steeper than 3:1?
☐	☐	☐	Is there evidence of depressions in the soil surface over and around any pipes?
☐	☐	☐	Are records of operation and maintenance available for inspections performed quarterly (include copy)
☐	☐	☐	Other problems not listed above (describe below)

Describe all problems in detail (use additional sheets if necessary):

_____

_____

_____

_____

_____

Describe corrective actions needed (use additional sheets if necessary):

_____

_____

_____

_____

_____

BMP Condition *(check one):*

☐ **FAILED INSPECTION**

Has MAJOR deficiencies and must be repaired in order to function properly and operate as designed. A final inspection and certification must be performed and submitted after repair.

☐ **CONDITIONAL APPROVAL**

Has MINOR deficiencies but repair is needed in order to ensure system does not fail. Final Certification can be issued with contingent upon corrective measures being addressed.

☐ **FINAL CERTIFICATION**

BMP has no deficiencies and a Final Certification will be issued.

Owner/ Representative Certification:

I have read and understand the findings of this inspection. I understand that I am responsible for correcting all deficiencies identified in this report by ***October 30th*** of this year.

Owner Signature: _____ Date: _____

Owner of Record: _____ Telephone: _____

Address: _____ Fax: Email: _____

Inspector's Certification

As a duly registered Professional in the State of California, I hereby certify that the Stormwater BMP(s) described in this report were inspected under my responsible charge, and this report accurately identifies any deficiencies in the structure and function of the BMP(s).

Inspector Signature: _____ Date: _____

Inspector Name: _____ Telephone: _____

Company: _____ Fax: _____

Address: _____ Email: _____

_____ Credentials: _____

Completed BMP Maintenance & Inspection Certification? Yes___ No___ Certification #:

MH engineering Co.

BMP- Inspection and Maintenance Checklist – Underground ADS Storm Tech SC-740 and stormdrain drain conveyance structures

Property Address: _____

Property Owner: _____

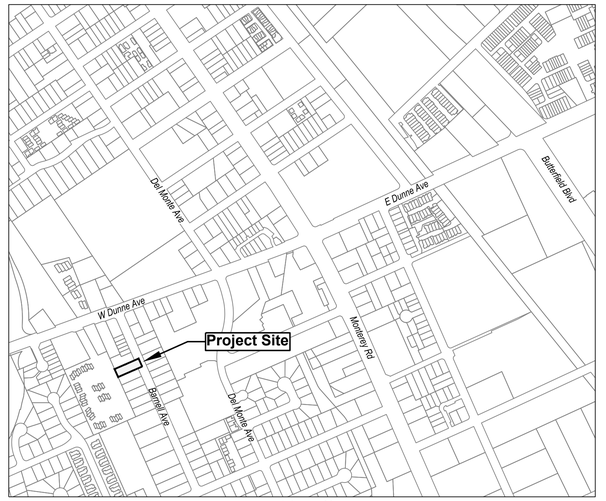
Inspector(s): _____

Type of Inspection: ❑ Pre-Rainy Season *(September 15)* ❑ Post-Rainy Season *(May 1st)* ❑ Monthly ❑ Annual

Treatment Measure No.:_____ Date of Inspection: _____

1) Check if the inlet and out let are free of debris and obstruction, if so the area where poor drainage occurs may need new soil media.
2) Check if there is no standing water or poor vegetation within the swale.
3) Check for any erosion.
4) Check the inspection hand-hole for any debris or sediment within the chambers designated sumps. If so the sumps must be flushed clean.
5) Check for the drainage structure integrity.
6) Check for infiltration functioning as designed.

Vicinity Map



N.T.S.

Applicant/Owner:

Haren Properties, LLC
C/O Gabriel Connors
17045 Hill Road
Morgan Hill, CA 95037
(408) 960-9113

Engineer:

William J. McClintock RCE 24893
MH Engineering
16075 Vineyard Blvd.
Morgan Hill, CA 95037
(408) 779-7381
billm@mhengineering.com

Project Information:

APN:	767-12-012
Present Use:	Residential
Proposed Use:	Residential
Present Zoning:	Residential Attached Low Density (RAL 3,500 or RAL 3,000)
Proposed Zoning:	Residential Attached Low Density (RAL 3,500 or RAL 3,000)
Sanitary Sewer:	City of Morgan Hill
Gas and Electric:	PG&E
Water:	City of Morga Hill
Telephone:	Verizon
Existing Improvements:	As Shown
Area:	9,036 sf.

Building Area.....3395 sf
Pavement Area.....2358 sf
Sidewalk Area.....1563 sf
Patio Area.....164 sf
Landscape Area.....2167 sf

Total.....9647 sf
Total Impervious.....7480 sf
Requires Tier 1 (Site Design) and Tier 2 (Treatment)

Building Coverage	
Unit	**Unit Size**
"A"	1,236 SF.
"B"	867 SF.
"C"	867 SF.
"D"	867 SF.
A.D.U.	998 SF.

Sheet Index	
#	**Sheet Title**
1	Site Development Plan
2	Preliminary Grading Plan
3	Preliminary Grading Cross Sections
4	Preliminary Utility Plan
5	Preliminary Storm Water Control Plan

06/21/2024 11:44am
FOR PLANCHECK ONLY

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. McCLINTOCK
No. 24893
EXP 12-31-2025
STATE OF CALIFORNIA

FOR PLANCHECK ONLY
signature shall be provided upon approval

MH engineering Co.
Morgan Hill, CA 95037
16075 Vineyard Boulevard

LJ Commons

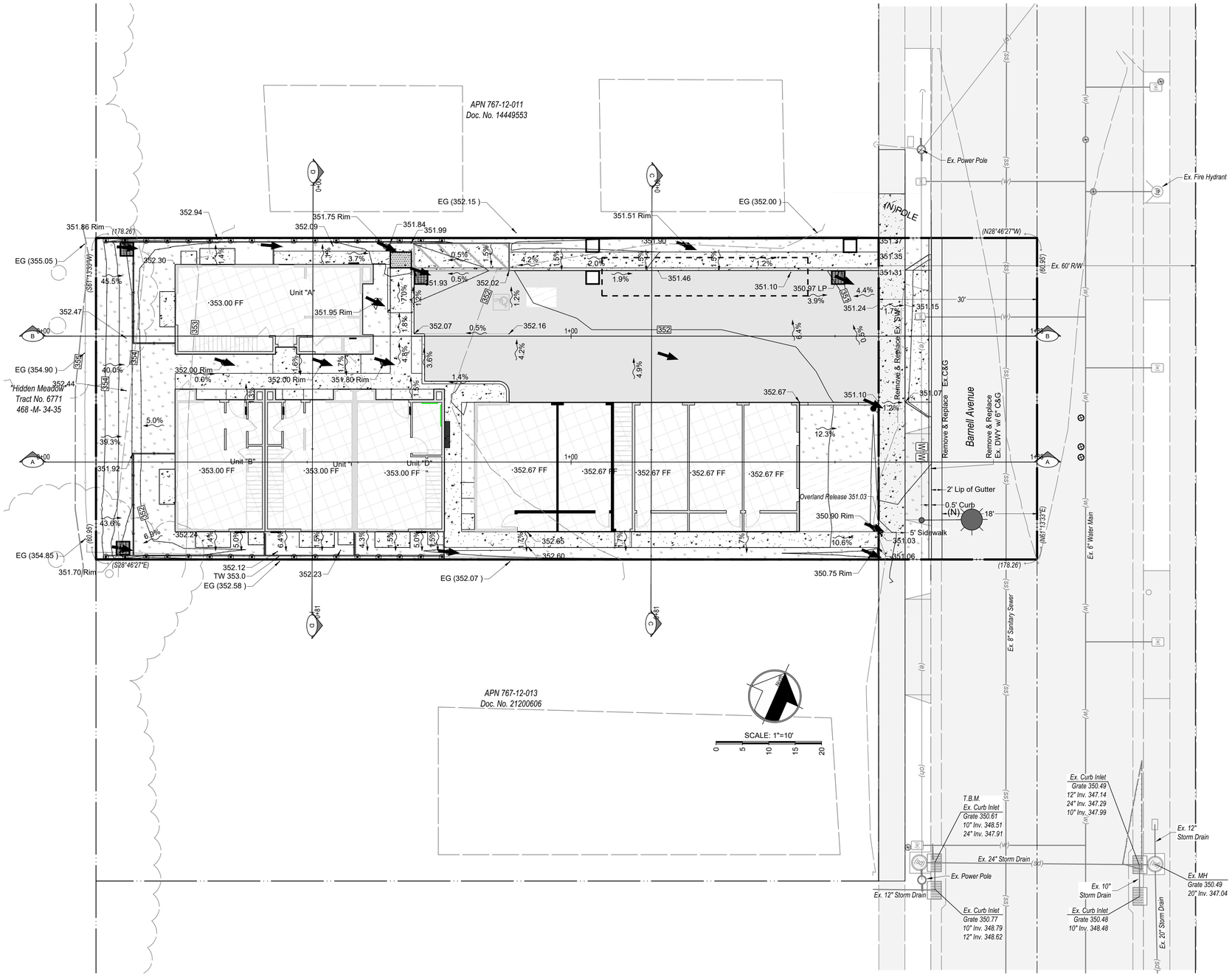
Site Development Plan

Lands of Murray - APN 767-12-012

DATE: 6/21/2024
SCALE: 1" = 10'
DRAWN BY: KOH
CHECKED BY: WJM

JOB NO. 222100

SHEET C1
OF 05



04/19/2024 11:13am
FOR PLANCHECK ONLY

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. McCLINTOCK
No. 24893
EXP 12-31-2025
STATE OF CALIFORNIA

FOR PLANCHECK ONLY
signature shall be provided upon approval

Legend

Asphalt

Portland Cement Concrete

Landscape

Direction of Overland Release

Grading Quantities

Cut.....346 c.y.
Fill.....135 c.y.
Off Haul...211 c.y.

1. TEMPORARY BENCH MARK- BASED ON A CITY APPROVED BENCHMARK AS SHOWN ON THESE PLANS. TEMPORARY BENCH MARK IS THE Top of Curb Elevation at the catch basin located at the southeasterly corner of APN 767-12-13 **Elev.=350.61** as shown on this Sheet C2.

LJ Commons

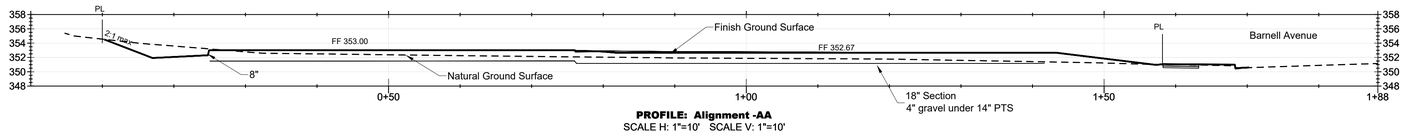
MH engineering Co.
16075 Vineyard Boulevard
Morgan Hill, CA 95037

Preliminary Grading Plan
Lands of Murray - APN 767-12-012

DATE: 6/21/2024
SCALE: 1" = 10'
DRAWN BY: KOH
CHECKED BY: WJM

JOB NO. 222100

SHEET C2
OF 05



PROFILE: Alignment -AA
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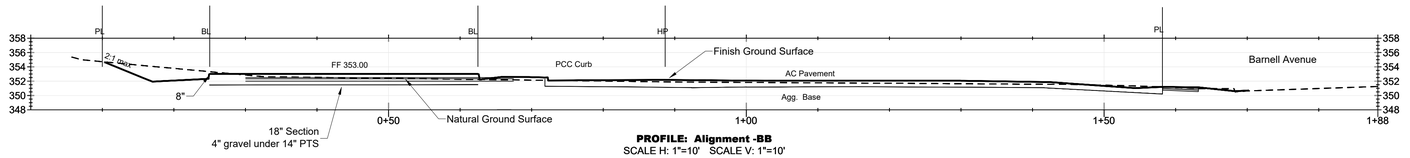

PROFILE: Alignment -BB
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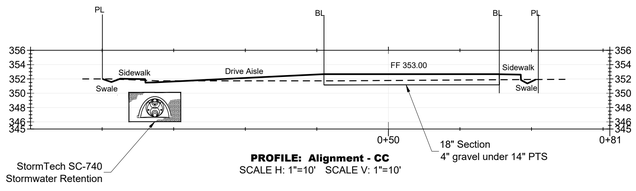

PROFILE: Alignment - CC
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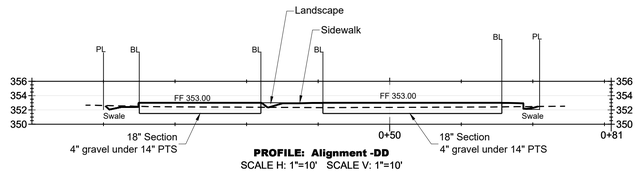


PROFILE: Alignment -DD
SCALE H: 1"=10' SCALE V: 1"=10'

Broadband Standards

CITY OF MORGAN HILL

For Broadband connectivity, a project is required to install conduits in all the public rights-of-way fronting the project site to accommodate multiple broadband providers. The following standards apply:

A. Design Plans

1. The project is required to submit design plans to include an engineering plan and profile of each street showing the location of existing underground utilities in the proposed path of the broadband conduit installation.
2. The design plans shall also include the approximate locations and dimensions for surface restoration.

B. Broadband Conduit

1. Provide a minimum of two (2) conduits each with at least two pull cables. At least one conduit shall remain empty and reserved for use by a potential future broadband service provider.
2. Each conduit shall be a 4" diameter PVC pipe, non-pressure type but has adequate stiffness for direct burial usage without encasement in concrete. The type of pipe shall be consistent with industry standards and be orange in color.
3. Broadband system designers shall field-verify the locations of existing utilities and surface features along and adjacent to the proposed conduit alignment.
4. The preferred horizontal conduit alignment is at centerline of sidewalk or as approved by the City Engineer.
   a. For conduits allowed in the street: Locate new conduit 3' from face of curb. Conduits shall be located parallel to the street centerline, where practicable, and shall not meander along the street. Street crossings shall be perpendicular to the street centerline.
5. Horizontal Clearance:
   a. Minimum 1' horizontal clearance from new conduit to other existing utilities, excluding water mains, gas lines, and electric lines.

   b. Minimum 3' horizontal clearance from new conduit to existing water main.
   c. The applicant is responsible for checking with owners of adjacent non-City utilities (ex. gas and electric lines) to verify their required horizontal separation requirements.
6. All conduits shall be installed underground using directional boring method or open trench.
   a. For Directional Bore Design
      i. Plans shall include a layout plan and profile sheets for directional bores. All existing utilities must be shown to scale on the plan and profile views.
      ii. Vertical Clearance: Provide 3' minimum vertical clearance from all utilities. This includes minor services, such as water services and sewer laterals. For deep crossings, provide a minimum of 5' clearance from utilities and structures. The applicant is responsible for checking with owners of adjacent non-City utilities (ex. gas and electric lines) to verify their required vertical separation requirements.
      iii. Boring and Receiving Pits: Show the length, width, depth, and location of the boring and receiving pits on the plans and profiles. The pits are to be located to minimize the construction impact to the adjacent properties and streets. Pits should not be in front of existing driveways, restaurants, bus stops, fire hydrants, and within street intersections.
      iv. Conflicts with Trees: If trees are in the way of the directional bore, the conduit shall be bored 8' to 12' underneath the tree roots rather than around the tree.
   b. For Trench Design
      i. For open-trench construction in the street: Conduit shall have a minimum cover of 36" above the top of the conduit and allow at least 6" between the top of the conduit and the bottom of the street structural pavement section.
      ii. For a trench outside the street section: Conduit shall have a minimum cover of 30".
      iii. Open trenches deeper than 60" must comply with Cal/OSHA standards, requiring protective systems, such as shoring.

      iv. Vertical Clearance: Provide 12" minimum vertical clearance from all other utility lines and services, including other telecommunication lines.
7. Tracer Wire: The conduits shall be installed with a tracer wire.
   a. Install tracer wire in the trench or bore with all underground conduits. Ensure the tracer wire provides end-to-end electrical continuity for electronically locating the underground conduit system.
   b. In a trenching operation, install the tracer wire no more than 3" above the conduit.
   c. In a boring operation, install the tracer wire in an encasement.
8. Identification Tape: A 6" wide, orange magnetically detectable identification tape shall be installed 12 inches above the entire length of the conduit route. The tape shall be continuously imprinted with "BROADBAND CONDUIT".

C. Pullboxes

1. Indicate locations of all pullboxes, other service boxes and manholes on the design plans.
2. Pullboxes shall be a No. 8 pullbox per City of Morgan Hill Standard E-6.
3. Pullboxes and splice boxes shall be located within the park strip/planter strip or at the back of sidewalk unless the City Engineer approves an alternative location.
4. The maximum distance between any two pull boxes shall not exceed 1,200 feet. Within the 1,200-feet distance, provide pullboxes at locations wherever the cumulative change of direction of the conduit exceeds 180 degrees.
5. The minimum bending radius for conduit shall be 3 feet.
6. Pullboxes shall be located a minimum of 12 inches from all structures.

D. Manholes

1. A detail of the manhole must be shown on the plans.
2. Manholes for broadband conduit shall not be allowed in the street unless an exception is granted by the City Engineer.

3. Manholes allowed to be in the street must have cast iron frames and covers.
4. Manholes that are in sidewalks shall have a concrete polymer frame and cover that matches the color and texture of the sidewalk.
5. Manholes shall not be placed within a driveway approach or within the curb return at intersections.
6. All manholes must be rated for a minimum H-20 wheel load.
7. The name "BROADBAND" shall be permanently cast into or engraved on the manhole covers.

E. Related Work

Refer to the City's Design Standards and Standard Details for Construction for pavement materials, trench limits of restoration, backfill for boring, and backfill for trenching.

MH engineering Co.
Morgan Hill, CA 95037
16075 Vineyard Boulevard

LJ Commons

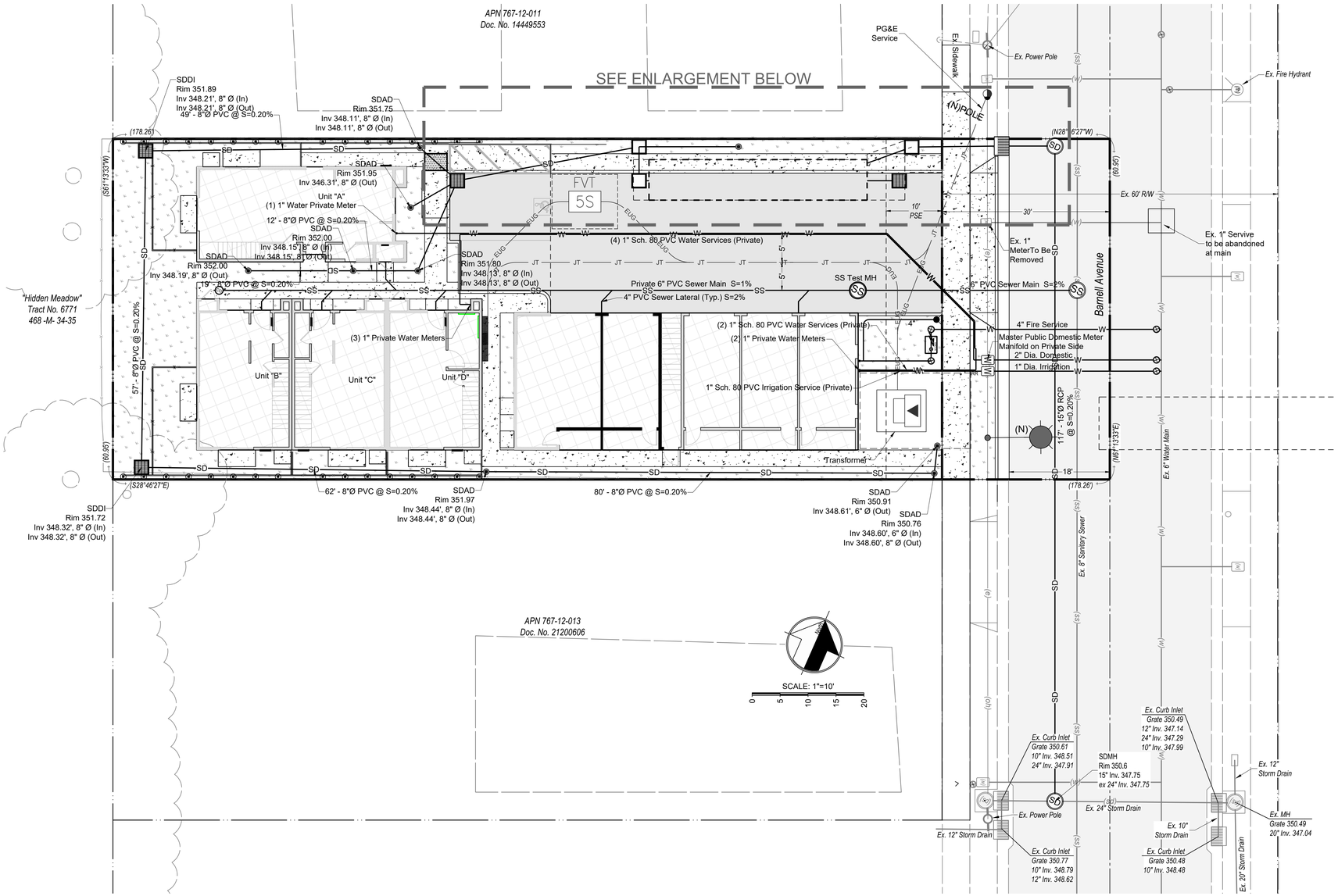
Preliminary Grading Cross Sections

Lands of Murray - APN 767-12-012

DATE: 6/21/2024
SCALE: As Shown
DRAWN BY: KOH
CHECKED BY: WJM

JOB NO. 222100

SHEET C3
OF 05



06/21/2024 11:23am
FOR PLANCHECK ONLY

REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. McCLINTOCK
No. 24893
EXP 12-31-2025
STATE OF CALIFORNIA

FOR PLANCHECK ONLY
signature shall be provided upon approval

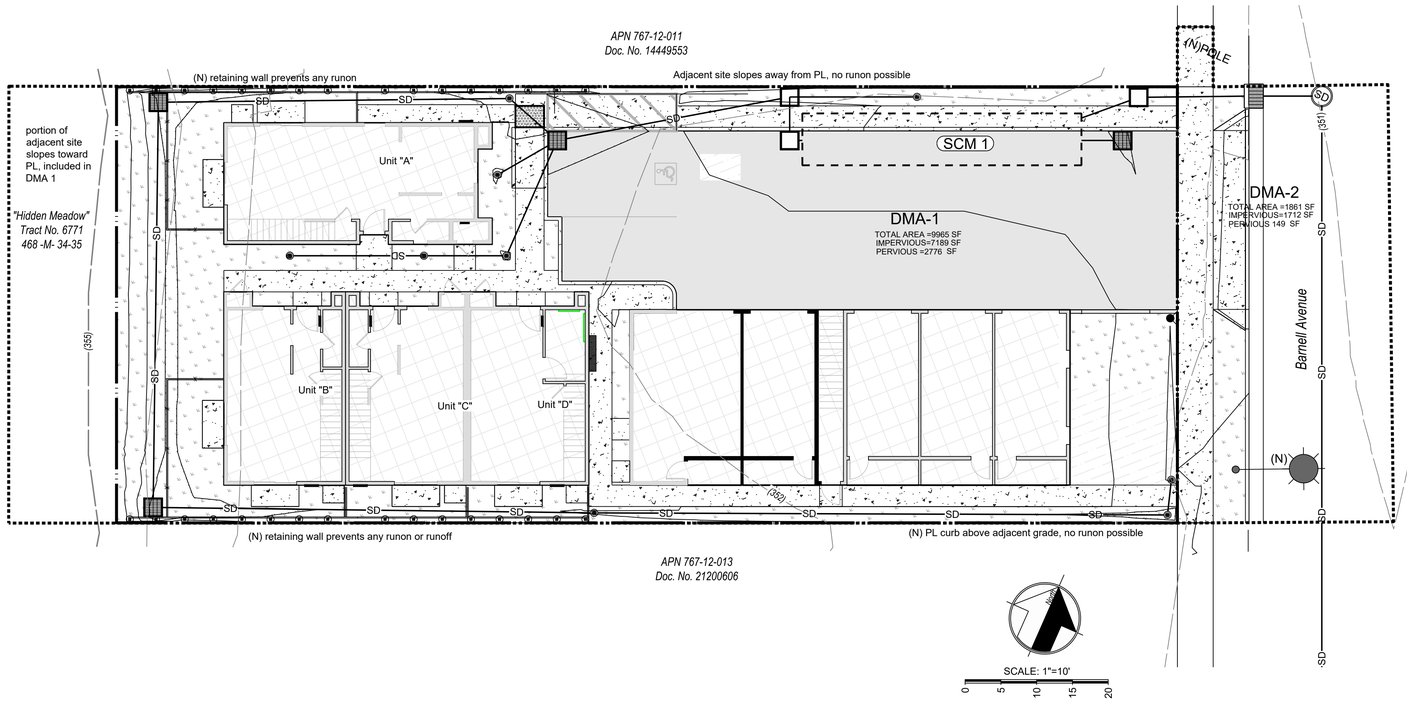
LJ Commons

Preliminary Utility Plan

Lands of Murray - APN 767-12-012

MH engineering Co.
Morgan Hill, CA 95037
16075 Vineyard Boulevard

DATE:	6/21/2024	JOB NO.	222100
SCALE:	As Shown	SHEET	C4
DRAWN BY:	KOH	OF	05
CHECKED BY:	WJM		



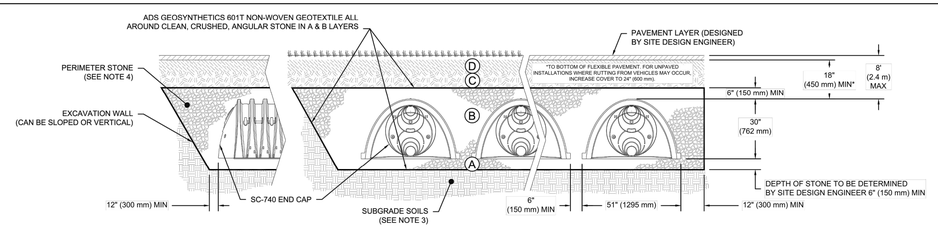
Legend:

- SCM # — Source Control Measure
- DMA Boundary

Storm Drain Protection Note:

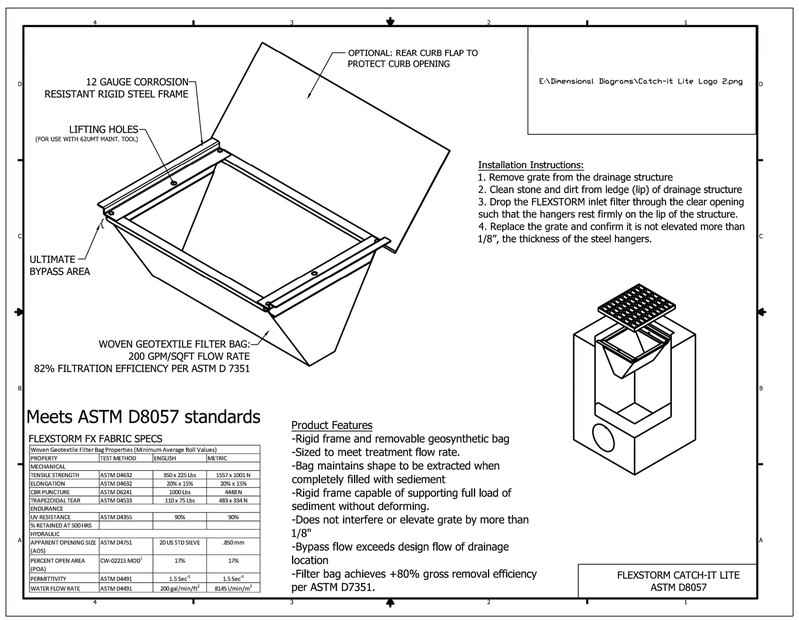
Provide Flexstorm Catch-It Lite drain insert in all SDDIs for water quality treatment.

ADS StormTech Chamber System



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT/% AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.



Meets ASTM D8057 standards

FLEXSTORM FX FABRIC SPECS

Woven Geotextile Filter Bag Properties (Minimum Average Roll Values)			
PROPERTY	TEST METHOD	ENGLISH	METRIC
MECHANICAL			
TENSILE STRENGTH	ASTM D4632	350 x 225 Lbs	1557 x 1001 N
ELONGATION	ASTM D4632	20% x 15%	20% x 15%
CBR PUNCTURE	ASTM D6241	1000 Lbs	4448 N
TRAPEZOIDAL TEAR	ASTM D4533	110 x 75 Lbs	483 x 334 N
ENDURANCE			
UV RESISTANCE	ASTM D4355	90%	90%
% RETAINED AT 500 HRS			
HYDRAULIC			
APPARENT OPENING SIZE (AOS)	ASTM D4751	20 US STD SIEVE	.850 mm
PERCENT OPEN AREA (POA)	CW-02215 MOD[1]	17%	17%
PERMITTIVITY	ASTM D4491	1.5 Sec^{-1}	1.5 Sec^{-1}
WATER FLOW RATE	ASTM D4491	200 gal/min/ft^2	8140 l/min/m^2

Product Features
-Rigid frame and removable geosynthetic bag
-Sized to meet treatment flow rate.
-Bag maintains shape to be extracted when completely filled with sediement
-Rigid frame capable of supporting full load of sediment without deforming.
-Does not interfere or elevate grate by more than 1/8"
-Bypass flow exceeds design flow of drainage location
-Filter bag achieves +80% gross removal efficiency per ASTM D7351.

Drain Inlet Insert Detail

06/21/2024 12:34pm
FOR PLANCHECK ONLY
REGISTERED PROFESSIONAL ENGINEER
WILLIAM J. McCLINCHEY
No. 24893
EXP 12-31-2025
STATE OF CALIFORNIA
FOR PLANCHECK ONLY
signature shall be provided upon approval

MHengineering Co.
16075 Vineyard Boulevard
Morgan Hill, CA 95037

LJ Commons

Preliminary Stormwater Control Plan

Lands of Murray - APN 767-12-012

DATE: 6/21/2024
SCALE: 1" = 10'
DRAWN BY: KOH
CHECKED BY: WJM

JOB NO. 222100

SHEET C5
OF 05

City of Morgan Hill Post Construction Storm Water Pollution Prevention

City Municipal Code - Chapter 18.71

Chapter 18.71 POST CONSTRUCTION STORMWATER POLLUTION PREVENTION

Sections:

18.71.010 Purpose and intent.

The purpose of this chapter is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing in watersheds in compliance with applicable provisions of the Federal Clean Water Act and any National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permits issued to the City of Morgan Hill, through the following objectives:

A. Minimize increases in stormwater runoff from any development in order to reduce flooding, siltation and streambank erosion and maintain the integrity of stream channels;

B. increases in nonpoint source pollution caused by stormwater runoff from development which would otherwise degrade local water quality

C. Minimize the total annual volume of surface water runoff which flows from any specific site during and following development to not exceed the pre-development hydrologic regime to the maximum extent practicable.

D. Reduce stormwater runoff rates and volumes, soil erosion and nonpoint source pollution, wherever possible, through stormwater management controls and to ensure that these management controls are properly maintained and pose no threat to public safety.

The above objectives shall be met through adoption and implementation of best management practices (BMPs) in design, construction and maintenance. These BMPs shall be incorporated into permanent site design features, which shall remain functioning throughout the life of the development.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.020 Definitions.

The terms used in this chapter shall have the following meanings:

A. "One hundred thousand square foot commercial development" means any commercial development that creates at least one hundred thousand square feet of impermeable surface, including parking areas.

B. "Automotive repair shop" means a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539.

C. "Authorized enforcement officer" means the City of Morgan Hill Chief Engineer and those individuals designated by the chief engineer to enforce the provisions of this chapter, including the code enforcement officer(s) of the City of Morgan Hill's community development department.

D. "Best management practices" or "BMP" means activities, practices, and procedures as specified in Section 18.71.110 to prevent or reduce the discharge of pollutants directly or indirectly to the municipal storm drain system and waters of the United States. Best management practices (BMPs) include but are not limited to: treatment facilities and methods to remove pollutants from storm water; operating and maintenance procedures; facility management practices to control runoff, spillage or leaks of non-storm water, waste disposal, and drainage from materials storage; erosion and sediment control practices; and the prohibition of specific activities, practices, and procedures and such other provisions as the city determines appropriate for the control of pollutants.

E. "Clean Water Act" means the federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

F. "Commercial development" means any development on private land that is not heavy industrial or residential. The category includes, but is not limited to: hospitals, laboratories and other medical facilities, educational institutions, recreational facilities, plant nurseries, multi-apartment buildings, car wash facilities, mini-malls and other business complexes, shopping malls, hotels, office buildings, public warehouses and other light industrial complexes.

G. "Development" means land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and improvements related to land subdivision; any activity that moves soils or substantially alters the pre-existing vegetated or man-made cover of any land. This includes, but is not limited to, grading, digging, cutting, scraping, stockpiling or excavating of soil, placement of fill materials, paving, pavement removal, exterior construction, substantial removal of vegetation where soils are disturbed including but not limited to removal by clearing or grubbing, or any activity which bares soil or rock or involves streambed alterations or the diversion or piping of any watercourse. Development does not

include routine maintenance to maintain original line and grade, hydraulic capacity, or the original purpose of the facility, nor does it include emergency construction activities (i.e., land disturbances) required to protect public health and safety.

H. "Authorized enforcement officer" means the chief engineer and his or her designee, including authorized enforcement officer.

I. "Hillside" means property located in an area with known erosive soil conditions, where the development contemplates grading on any natural slope that is twenty-five percent or greater.

J. "Impervious surface" means a surface composed of any material that significantly impedes or prevents the natural infiltration of water into soil. Impervious surfaces include, but are not limited to, rooftops, buildings, streets and roads, and any concrete or asphalt surface.

K. "Industrial General Permit" means a NPDES permit issued by the state water resources control board for the discharge of storm water associated with industrial activity.

L. "National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permits" means general, group, and individual storm water discharge permits which regulate facilities defined in federal NPDES regulations pursuant to the Clean Water Act. The California Regional Water Quality Control Board, Central Coast Region (hereinafter, Regional Board) and the State Water Resources Control Board have adopted general storm water discharge permits, including but not limited to the general construction activity and general industrial activity permits.

M. "Operation and maintenance agreement" means a written agreement entered into pursuant to Section 18.71.160, providing for the long-term operation and maintenance of stormwater management facilities and practices on a site or with respect to a land development project, which when properly recorded in the deed records constitutes a restriction on the title to a site or other land involved in a land development project.

N. "Owner" means the legal or beneficial owner of a site, including but not limited to, a mortgagee or vendee in possession, receiver, executor, trustee, lessee or other person, firm or corporation in control of the site.

O. "Parking lot" means land area or facility for the temporary parking or storage of motor vehicles used personally, for business or for commerce with a lot size of five thousand square feet or more, or with twenty-five or more parking spaces.

P. "Receiving waters" means any natural stream, river, creek, ditch, channel, canal, waterway, gully, ravine or wash, in and including any adjacent area that is subject to inundation from overflow or flood water.

Q. "Redevelopment" means, on an already developed site, the creation or addition of at least five thousand square feet of impervious surface, or the expansion of a building footprint or addition of a structure; structural development including an increase in gross floor area and/ or exterior construction or remodeling; and land disturbing activities related with structural or impervious surfaces that results in an increase of fifty percent of the impervious surface of a previously existing development.

R. "Restaurant" means a stand-alone facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption. (SIC code 5812).

S. "Retail gasoline outlet" means any facility engaged in selling gasoline and lubricating oils.

T. "Site" means any tract, lot or parcel of land or combination of tracts, lots, or parcels of land, which are in one ownership, or are contiguous and in diverse ownership where a development is to be performed as part of a unit, subdivision, or project.

U. "Storm drain" means any pipe, conduit or sewer of the city designed or used for the disposal of storm and surface waters and drainage including unpolluted cooling water and unpolluted industrial process water, but excluding any community sanitary sewer system.

V. "Stormwater management" means the collection, conveyance, storage, treatment and disposal of stormwater runoff to enhance and promote the public health, safety and general welfare.

W. "Stormwater runoff management plan" means a document required pursuant to Section 18.71.120, describing how existing runoff characteristics will be affected by a land development project and containing measures for complying with the provisions of this ordinance.

X. "Stormwater runoff" means water from rain, landscape irrigation, or other sources that flows over the land surface without entering the soil.

Y. "Treatment control BMP" means any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media adsorption or any other physical, biological, or chemical process.

Z. "Watercourse" means any natural or artificial stream, river, creek, ditch, channel, canal, conduit, culvert, drain, waterway, gully, ravine or wash, in and including any adjacent area that is subject to inundation from overflow or flood water.

AA. "Water quality impact" means any deleterious effect on waters or wetlands, including their quality, quantity, surface area, species composition, aesthetics or usefulness for human or natural uses that are or may potentially be harmful or injurious to human health, welfare, safety or property, to biological productivity, diversity, or stability or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.030 Applicability: Permanent storm water pollution prevention measures required.

A. The provisions of this chapter shall apply to development or redevelopment of the following:

1. One hundred thousand square feet commercial development.
2. Automotive repair shops.
3. Retail gasoline outlets.
4. Restaurants.
5. Hillside residential.
6. Parking lots residential with ten or more units or greater than five thousand square feet of impervious area.
7. Projects requiring a general NPDES permit for stormwater discharges associated with industrial activities.
8. Impervious surfaces ten thousand or more square feet.
9. Impervious surfaces within one hundred feet of receiving waters.
10. Vehicle or equipment fueling, washing, or maintenance area.
11. Commercial or industrial waste handling or storage, excluding typical office or household waste.
12. Development or redevelopment projects disturbing greater than or equal to one acre.

B. No final building or occupancy permit shall be issued without the written certification of the chief engineer or designee that the requirements of this chapter have been satisfied.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.110 Design standards and selection of best management practices.

Projects meeting the criteria of Section 18.71.030A, must meet the requirements of the following design standards and selection of best management practices:

A. Stormwater best management practices shall be selected and designed to the satisfaction of the chief engineer or designee in accordance with the requirements contained in the most recent versions of the following documents:

1. City of Morgan Hill stormwater post construction best management practices development standards for new development and redevelopment;

2. California Storm Water Quality Association Best Management Practice Handbooks;

3. City of Gilroy, City of Morgan Hill and County of Santa Clara Regional Stormwater Management Plan (SWMP), as approved by the Central Coast Regional Water Quality Control Board;

4. City of Morgan Hill Hydro-modification Management Plan, as approved by the Central Coast Regional Water Quality Control Board;

Any conflict of BMPs from the above documents shall be approved by the chief engineer.

B. Other references which can be used for selection of design BMPs to the satisfaction of the chief engineer or designee are:

1. Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) "Guidance for Implementing Stormwater Regulations for New and Redevelopment Projects;"

2. "Start at the Source Design Guidance Manual developed by the Bay Area Storm Water Management Agencies Association (BASMAA);

3. Bay Area Stormwater Management Agencies Association "Using Site Design Standards to Meet Development Standards for Stormwater Quality - A Companion Document to Start at the Source".

C. Design Standards for Structural or Treatment Control BMPs. The post-construction treatment control BMPs shall incorporate, at a minimum, either a volumetric or flow based treatment control design standard, or both, as identified below to mitigate (infiltrate, filter or treat) storm water runoff.

1. Volumetric Treatment Control BMP - Treatment systems depending on volume capacity, such as detention/retention units or infiltration structures, shall be designed to treat stormwater runoff equal to:

a) The maximized stormwater quality capture volume for the area, based on historical rainfall records, determined using the formula and volume capture coefficients set forth in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998), pages 175-178 (e.i. approximately the eighty-fifth percentile twenty-four-hour storm runoff event); or

b) The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology set forth in Appendix D of the California Stormwater Best Management Practices Handbook for New Development and Redevelopment (2003), using local rainfall data; or

c) The volume of runoff produced from a historical-record based reference twenty-four-hour rainfall criterion for "treatment" that achieves approximately the same reduction in pollutant loads achieved by the eighty-fifth percentile twenty-four-hour runoff event.

2. Flow-Based Treatment Control BMP - Treatment BMPs whose primary mode of action depends on flow capacity, such as swales, sand filters, or wetlands, shall be sized to treat:

a) The flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the area; or

b) The flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above.

D. Design Standards for Peak Storm Water Runoff Discharge Rates. Post-development peak storm water runoff discharge rates shall not exceed the estimated pre development rate for developments where the increased peak storm water discharge rate will result in increased potential for downstream erosion.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.120 Stormwater runoff management plan required.

Projects meeting the criteria of Section 18.71.030A must provide a stormwater runoff management plan. The stormwater runoff management Plan shall detail how runoff and associated water quality impacts resulting from the activity will be controlled or managed by the project's post construction BMP designs.

No building permit shall be issued until the stormwater runoff management plan has been reviewed and approved by the chief engineer or designee.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.130 Stormwater runoff management plan contents.

The stormwater runoff management plan shall include sufficient information to evaluate the environmental characteristics of affected areas, the potential impacts of the proposed development on water resources, and the effectiveness and acceptability of measures proposed for managing stormwater runoff. The minimum information submitted for support of the stormwater management plan shall meet the requirements as outlined in City of Morgan Hill Stormwater Post Construction Best Management Practices Development Standards for New Development and Redevelopment manual.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.140 Preparation of the stormwater runoff management plan.

A. The stormwater runoff management plan shall be prepared under the direction of a professional civil engineer registered in the State of California. The responsible professional civil engineer shall stamp and sign the approved stormwater runoff management plan.

B. The chief engineer or designee may require a developer to provide a signed certification from the civil engineer responsible for preparing the stormwater runoff management plan that all stormwater best management practices have been designed to meet the requirements of this chapter.

C. Each certifying civil engineer shall establish to the city's satisfaction that such person has been trained on the design of stormwater quality best management practices not more than three years prior to the certification signature date.

D. Qualifying training shall be conducted by an organization with stormwater quality management expertise, such as a university, the Bay Area Stormwater Management Agencies Association, the American Society of Civil Engineers, the American Public Works Association, or the California Water Environment Association.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.150 Stormwater BMP operation, maintenance, and replacement responsibility.

A. For the life of projects meeting the criteria of Section 18.71.030A, all on-site stormwater management facilities shall be operated and maintained in good condition and promptly repaired/replaced by the property owner(s), an owners' or homeowners' association or other legal entity approved by the city.

B. Any repairs or restoration/replacement and maintenance shall be in accordance with city-approved plans.

C. The property owner(s) shall develop a maintenance schedule for the life of any stormwater management facility and shall describe the maintenance to be completed, the time period for completion, and who shall perform the maintenance. This maintenance schedule shall be included with the approved stormwater runoff management plan.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.160 Stormwater BMP operation and maintenance agreement.

A. Prior to the issuance of any building permit requiring stormwater management BMPs, the owner(s) of the site shall enter into a formal written stormwater BMP operation and maintenance agreement with the city. The city shall record this agreement, against the property or properties involved, with the County of Santa Clara and it shall be binding on all subsequent owners of land served by the stormwater management treatment BMPs.

B. The stormwater BMP operation and maintenance agreement shall require that the BMPs not be modified and that BMP maintenance activities not alter the designed function of the facility from its original design unless approved by the city prior to the commencement of the proposed modification or maintenance activity.

C. The stormwater BMP operation and maintenance agreement shall provide that in the event that maintenance or repair is neglected, or the stormwater management facility becomes a danger to public health or safety, the city shall have the authority to perform maintenance and/or repair work and to recover the costs from the owner.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.170 Stormwater BMP inspection responsibility.

A. The property owner(s) shall be responsible for having all stormwater management facilities inspected for condition and function by a knowledgeable party.

B. Unless otherwise required by the chief engineer or designee, stormwater facility inspections shall be done at least twice per year, once in fall, in preparation for the wet season, and once in winter. Written records shall be kept of all inspections and shall include, at minimum, the following information:

1. Site address;
2. Date and time of inspection;
3. Name of the person conducting the inspection;
4. List of stormwater facilities inspected;
5. Condition of each stormwater facility inspected;
6. Description of any needed maintenance or repairs; and
7. As applicable, the need for site reinspection.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.180 Records of maintenance and inspection activities.

On or before April 15th of each year, the party responsible for the operation and maintenance of on-site stormwater management facilities under the BMP operation and maintenance agreement shall provide the chief engineer or designee with records of all inspections, maintenance and repairs.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.190 Failure to maintain.

A. If the responsible party fails or refuses to meet the requirements of the stormwater BMP operation and maintenance agreement, the authorized enforcement officer may give a thirty-day written notice to such responsible party under BMP operation and maintenance agreement to correct the failure and breach of contractual obligation.

B. If such responsible party fails to correct such conditions, the city may take such remedies such provided in the BMP operation and maintenance agreement. Additionally, such conditions shall be deemed a nuisance subject to all procedures, abatement of such conditions and remedies as provided in Chapter 1.18 of this code.

C. In the event the city determines that the violation constitutes an immediate danger to public health or public safety, twenty-four hours written notice from the city shall be sufficient in lieu of the thirty-day written notice required under Section 18.71.190A.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.200 Authority to inspect.

Whenever necessary to make an inspection to enforce any provision of this chapter, or whenever the authorized enforcement officer has cause to believe that there exists, or potentially exists, in or upon any premises any condition which constitutes a violation of this chapter, the authorized enforcement officer may enter such premises at all reasonable times to inspect the same and to inspect and copy records related to storm water compliance provided that (i) if such building or premises be occupied, he or she shall first present proper credentials and request entry; and (ii) if such building or premises be unoccupied, he or she shall first make a reasonable effort to locate the owner or other persons having charge or control of the building or premises and request entry. In the event the owner or occupant refuses entry after a request to enter and inspect has been made, the city is hereby empowered to seek assistance from any court of competent jurisdiction in obtaining such entry.

In any circumstance where there appears an immediate threat to the public health or safety, the authorized enforcement officer may enter any structure or premises without the consent of any person or court process.

Routine or area inspections shall be based upon such reasonable selection processes as may be deemed necessary to carry out the objectives of this chapter, including but not limited to random sampling and/or sampling in areas with evidence of storm water contamination, illicit discharges, discharges of non-storm water to the storm water system, or similar factors.

The city shall have the right to establish on any property such devices as are necessary to conduct sampling or metering operations. During any inspection as provided herein, the authorized enforcement officer may take any samples and perform any testing deemed necessary to aid in the pursuit of the inquiry or to record site activities.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.210 Notice of violation.

Whenever the authorized enforcement officer finds that a person has violated a prohibition or failed to meet a requirement of this chapter, the authorized enforcement officer may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:

A. The performance of monitoring, analyses, and reporting;

B. The elimination of illicit connections or discharges;

C. That violating discharges, practices, or operations shall cease and desist;

D. The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property;

E. Payment of a fine to cover administrative and remediation costs; and

F. The implementation of BMP, source control or treatment BMPs;

G. Compliance with the stormwater runoff management plan and the BMP operation and maintenance agreement.

If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by the city or a contractor designated by the authorized enforcement officer and the expense thereof shall be charged to the violator pursuant to Section 18.71.240.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.220 Appeal.

Any person receiving a notice of violation under Section 18.71,210, above may appeal the determination of the authorized enforcement officer to the city manager. The notice of appeal must be received by the city manager within five days from the date of the notice of violation. Hearing on the appeal before the city manager or his/her designee shall take place within fifteen days from the date of city's receipt of the notice of appeal. The decision of the city manager or designee shall be final.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.230 Abatement by city.

If the violation has not been corrected pursuant to the requirements set forth in the notice of violation, or, in the event of an appeal under Section 18.71.220, within ten days of the decision of the city manager upholding the decision of the authorized enforcement officer, then the city or a contractor designated by the authorized enforcement officer may enter upon the subject private property and is authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the city or designated contractor to enter upon the premises for the purposes set forth above.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.240 Charging cost of abatement.

Within 30 days after abatement of the nuisance by city, the authorized enforcement officer shall notify the property owner of the property of the cost of abatement, including administrative costs. The property owner may file a written protest objecting to the amount of the assessment with the city clerk within fifteen

days. The city clerk shall set the matter for public hearing by the city council. The decision of the city council shall be set forth by resolution and shall be final.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.250 Urgency abatement.

The authorized enforcement officer is authorized to require immediate abatement of any violation of this chapter that constitutes an immediate threat to the health, safety or well-being of the public. If any such violation is not abated immediately as directed by the authorized enforcement officer, the city is authorized to enter onto private property and to take any and all measures required to remediate the violation. Any expense related to such remediation undertaken by the city o shall be fully reimbursed by the property owner and/or responsible party. Any relief obtained under this section shall not prevent city from seeking other and further relief authorized under this chapter.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.260 Violations.

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this chapter. A violation of or failure to comply with any of the requirements of this chapter shall constitute a misdemeanor and shall be punished as set forth in Chapter 1.24 of this code.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.270 Compensatory action.

In lieu of enforcement proceedings, penalties, and remedies authorized by this chapter, the authorized enforcement officer may impose upon a violator alternative compensatory actions, such as storm drain stenciling, attendance at compliance workshops, creek cleanup, etc.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.280 Violations deemed a public nuisance.

In addition to the enforcement processes and penalties hereinbefore provided, any condition caused or permitted to exist in violation of any of the provisions of this chapter is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored by the city at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken by the city pursuant to Chapter 1.18 of this code.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.290 Acts potentially resulting in a violation of the Federal Clean Water Act and/or California Porter-Cologne Act.

Any person who violates any provision of this chapter or any provision of any requirement issued pursuant to this chapter may also be in violation of the Clean Water Act and/or the Porter-Cologne Act and may be subject to the sanctions of those acts including civil and criminal penalties. Any enforcement action authorized under this chapter shall also include written notice to the violator of such potential liability.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

18.71.300 Fees set by resolution.

The city council shall establish, by resolution, any fees necessary to carry out the purpose of this chapter.

(Ord. No. 1993 N.S., § 1, 10-6-2010)

Appendix D

Phase I and Phase II Environmental Site Assessments

GeoSolve, Inc.®
Geoscience Solutions rather than Status-Quo

Visit us at www.geosolve-inc.com

PHASE I AND PHASE II ENVIRONMENTAL SITE ASSESSMENTS

On

Vacant Lot
Barnell Avenue
APN 767-12-012
Morgan Hill, California

For

HAREN PROPERTIES, LLC

by

GeoSolve, Inc.

Project No. 2022-21
September 28, 2022

1807 Santa Rita Road, Suite H-165 • Pleasanton, CA 94566
rcampbell@geosolve-inc.com • (925) 963-1198

GeoSolve, Inc.®
Geoscience Solutions rather than Status-Quo

Visit us at www.geosolve-inc.com

Project No. 2022-21
September 28, 2022

Mr. Gabriel Connors
Haren Properties, LLC
17045 Hill Road
Morgan Hill, California 95037

Subject: Vacant Lot – Barnell Avenue
APN 767-12-012
Morgan Hill, California 95037
PHASE I AND PHASE II ENVIRONMENTAL SITE ASSESSMENTS

Dear Mr. Connors:

At your request, ***GeoSolve, Inc.*** has conducted a Phase I Environmental Site Assessment for the above referenced site. The following is a copy of the report, which presents the results of our assessment according to ASTM E1527-2021 standard, and surficial soil testing.

Should you have any questions relating to the contents of this report or require any additional information, please contact our office at your convenience.

Sincerely,
GeoSolve, Inc.

Robert D. Campbell, M.S., P.G., C.E.G., Q.S.D.
Principal Engineering Geologist

Copies: 1 to Haren Properties, LLC

1807 Santa Rita Road, Suite H-165 • Pleasanton, CA 94566
rcampbell@geosolve-inc.com • (925) 963-1198

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

1.0 INTRODUCTION

1.1 Objective

The purpose of conducting this Phase I Environmental Site Assessment (ESA) is to evaluate the property for contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) 42 U.S.C. §9601 and petroleum products, also known as Recognized Environmental Concerns (RECs). As such, this Phase I ESA is intended to permit a user to satisfy one of the requirements to quality for the innocent landowner, continuous landowner, or bona fide prospective purchaser limitations on CERCLA liability or known as "landowner liability protections" through conducting All Appropriate Inquiries (AAI) into the previous ownership and uses of the property consistent with good commercial and customary practice as defined at 42 U.S.C. §9601(35)(B). ***GeoSolve, Inc.*** has conducted detailed assessment of the past use of the property, historical research, site visit, file reviews and/or file searches and interviews with the site managers/property owners as summarized in this Phase I ESA, which complies with ASTM E1527-2021 for real for secondary potential contaminated sites within a 1-mile radius of the property.

The entire property consists of one vacant parcel totaling approximately 0.207-acre along Barnell Avenue in Morgan Hill, California with an Assessor's Parcel Number (APN) 767-12-012.

This Phase I Environmental Site Assessment was prepared for the use of our client, Mr. Gabriel Connors of Haren Properties, who can rely on this report for evaluating the environmental conditions of the property. If the property is not developed by March 28, 2023, then Haren Properties, LLC, or the current property owner must conduct an Updated Phase I ESA.

1.2 User's Responsibilities

The purpose of this section is to describe tasks to be performed by the User. The "All Appropriate Inquiries" Final Rule (40 CFR Part 312) requires that these tasks be performed by or on behalf of a party seeking to qualify for an LLP to CERCLA liability. These tasks were completed by or on behalf of EPA Brownfield Assessment and Characterization grantees.

Review Title and Judicial Records for Environmental Liens and Activity and Use Limitations (AULs): To meet the requirements of 40 CFR 312.20 and 312.25, a search for the existence of environmental liens and AULs that are filed or E1527-2021. Environmental liens and AULs are legally distinct instruments and have very different purposes and both can commonly be found

within recorded land title records (e.g., County Recorder/ Registry of Deeds). The types of title reports that may disclose environmental liens and AULs include Preliminary Title Reports, Title Commitments, Condition of Title, and Title Abstracts. Chain of title reports will not normally disclose environmental liens or AULs. Environmental liens and AULs that are imposed by judicial authorities may be recorded or filed in judicial records only. In jurisdictions where environmental liens or AULs are only recorded or filed in judicial records, the judicial records must be searched for environmental liens and AULs. Any environmental liens and AULs known to Haren Properties, LLC (User) should be reported to ***GeoSolve, Inc.*** Unless added by a change in the scope of work to be performed by ***GeoSolve, Inc.***, this practice does not impose on the environmental professional the responsibility to undertake a review of recorded land title records and judicial records for environmental liens and AULs. The User should either (1) engage a title company, real estate attorney, or title professional to undertake a review of reasonably ascertainable recorded land title records and lien records for environmental liens and AULs currently recorded against or relating to the property, or (2) negotiate such an engagement of a title company, real estate attorney, or title professional as an addition to the scope of work of the environmental professional. The search for environmental liens and AULs in this section is in addition to the environmental professional's search of institutional control and engineering control registries for the property.

Reasonably Ascertainable Title and Judicial Records for Environmental Liens and Activity and Use Limitations: Environmental liens and AULs that are recorded or filed in any place other than recorded land title records are not considered to be reasonably ascertainable unless applicable federal, tribal, state, or local statutes, or regulations specify a place other than recorded land title records for recording or filing of environmental liens and AULs.

Specialized Knowledge or Experience of the Users: Users must consider their specialized knowledge to identify conditions indicative of releases or threatened releases. If the User has any specialized knowledge or experience that is material to recognized environmental conditions in connection with the property, the User should communicate any information based on such specialized knowledge or experience to the environmental professional. The User should do so before the environmental professional conducts the site reconnaissance.

Actual Knowledge of the User: If the User has actual knowledge of any environmental lien or AULs encumbering the property or in connection with the property, the User should communicate such information to the environmental professional. The User should do so before the environmental professional conducts the site reconnaissance.

Reason for Significantly Lower Purchase Price: In a transaction involving the purchase of a parcel of commercial real estate, the User shall consider the relationship of the purchase price of the property to the fair market value of the property if the property was not affected by hazardous

substances or petroleum products. The User should try to identify an explanation for a lower price which does not reasonably reflect fair market value if the property was not contaminated, and make a written record of such explanation. Among the factors to consider will be the information that becomes known to the User pursuant to the Phase I Environmental Site Assessment. This practice does not require that a real estate appraisal be obtained in order to ascertain fair market value of the property. The User should inform the environmental professional if the User believes that the purchase price of the property is lower than the fair market value due to contamination, and the User is not required to disclose the purchase price to the environmental professional.

Commonly Known or Reasonably Ascertainable Information: Commonly known or reasonably ascertainable information within the local community about the property must be considered by the User. If the User is aware of any commonly known or reasonably ascertainable information within the local community about the property that is material to recognized environmental conditions in connection with the property, the User should communicate such information to the environmental professional. The User should do so before the environmental professional conducts the site reconnaissance. The User must gather such information to the extent necessary to identify conditions indicative of releases or threatened releases of hazardous substances or petroleum products.

Degree of Obviousness: The User must consider the degree of obviousness of the presence or likely presence of releases or threatened releases at the property and the ability to detect releases or threatened releases by appropriate investigation including the information collected during this Phase I Environmental Site Assessment.

User shall make known to the environmental professional the reason the User wants to have the Phase I Environmental Site Assessment performed or, if the User does not identify the purpose of the Phase I Environmental Site Assessment, the environmental professional shall assume the purpose is to qualify for an LLP to CERCLA liability and state this in the report.

1.3 Scope

GeoSolve, Inc. was authorized by Mr. Gabriel Connors of Haren Properties, LLC on July 2, 2022, to perform the following:

a) Perform a field reconnaissance of the subject property for significant surficial signs of hazardous waste release, storage of hazardous materials, and surficial indications for the presence of USTs, and water wells;

b) Off-site research into past land use of the property involving, as applicable, telephone and personal interviews with government personnel and the review of historical documents;

c) A review of available aerial photographs for obvious surficial features indicative of past land use with attention to indicators of hazardous materials or waste use, disposal, or storage;

d) An interview with the current property owner(s);

e) A review of fuel leak and chemical release lists and files for soil and groundwater contamination cases within a 1-mile radius from the subject property as made available through the appropriate Federal and State and local regulatory agencies, if available;

f) Documentation of the site with photographs; and

g) Preparation of this report.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Location

The subject property is situated within the southern Santa Clara Valley in the greater Bay Area. The property is a vacant lot situated along Barnell Avenue in Morgan Hill, California, and totals approximately 0.207-acre with Assessor Parcel Number (APN) 767-12-012 and is bounded by Barnell Avenue to the east, a park to the west, and residences to the north and south. The location of the site is shown on Figure 1, Site Vicinity Map and the layout of the property is shown on Figure 2, and Site Plan.

2.2 Topography and Drainage

The local topography is relatively flat at approximately 380 feet above mean sea level (msl), which gradually slopes toward the northeast. An unnamed ephemeral stream is situated approximately 0.25-mile northeast of the site and flows south. Drainage of the property appears to be to the east-northeast along topography.

2.3 Geology/Hydrogeology

Based on published geologic map from Helley et al. (1979), the subject site is underlain by Late Pleistocene alluvium (Qpa), which consists of weakly consolidated, slightly weathered, poorly sorted, irregular interbedded clay, silt, sand, and gravel. The moderately permeable fine-grained sand and silt with occasional thin beds of coarse sand. The Late Pleistocene alluvium was deposed from flowing water in stream channels, on stream terraces, and on alluvial fans. The thickness of the Late Pleistocene alluvium is up to 150 feet, which is underlain by alternating layers of older alluvial deposits to approximately 2 to 3 kilometers (km). The older alluvial deposits are underlain by Cretaceous Great Valley Sequence sedimentary rocks.

The active trace of the Calaveras Fault is situated approximately 4.4-miles east of the site. This fault is considered active by the Alquist-Priolo Earthquake Fault Zoning Act (AP-Zone) of 1994, and is listed as strike-slip fault with right-lateral movement. The subject site is not located within an AP Zone and is not located within a seismic hazard zone

Based on information obtained from the Valley Water, groundwater is approximately 180 feet below ground surface (bgs) and flows toward the southeast (https://s3.us-west-2.amazonaws.com/valleywater.org.if-us-west-2/f2-live/s3fs-public/2020_Annual_Groundwater_Report_web_version.pdf).

2.4 Site Visit

A ***GeoSolve, Inc.*** field geologist visited the site on Wednesday, June 29, 2022, and made the following observations:

- The subject property consists of one 0.207-acre vacant parcel bounded by Barnell Avenue to the east, a park to the west, and residences to the north and south. The property was covered with short grasses. Digital photos of the site are shown on Photos 1A through 2B.

- No visual evidence for the presence of USTs was ascertained from our site visit, and no other visual evidence of hazardous wastes and/or hazardous substances was observed on the subject site. No visual evidence of sumps, wells, drains, or pits were noted at the subject property. No evidence of polychlorinated biphenyls (PCBs) was observed on the subject site. The United States Geological Survey (USGS) considers this a low exposure potential area for radon.

3.0 SITE HISTORY REVIEW

GeoSolve, Inc. examined fourteen (14) aerial photographs, eleven (11) historical topographic maps, and City Directories. No Sanborn Map coverage was available for the subject site. All historical information was provided by Environmental Data Resources, Inc (EDR). Data for the photographs and topographic maps are tabulated below:

AERIAL PHOTOGRAPHS EXAMINED		
Flight Date	**Approximate Scale**	**Identification Number**
1939	1:6000	USDA - 7058647.12
1940	1:6000	USGS - 7058647.12
1948	1:6000	USDA - 7058647.12
1950	1:6000	USDA - 7058647.12
1956	1:6000	USDA - 7058647.12
1963	1:6000	EDR - 7058647.12
1968	1:6000	USDA - 7058647.12
1970	1:6000	USDA - 7058647.12
1982	1:6000	USGS - 7058647.12
1993	1:6000	USGS/DOQQ - 7058647.12
2006	1:6000	USDA/NAIP - 7058647.12
2009	1:6000	USDA/NAIP - 7058647.12
2012	1:6000	USDA/NAIP - 7058647.12
2016	1:6000	USDA/NAIP - 7058647.12

HISTORICAL TOPOGRAPHIC MAPS		
Date	**Scale**	**USGS Topographic Map**
1917	1:62500	15-Minute Morgan Hill Quadrangle
1939	1:62500	15-Minute Morgan Hill Quadrangle
1955	1:24000	7.5-Minute Mt. Madonna Quadrangle
1968	1:24000	7.5-Minute Mt. Madonna Quadrangle
1979	1:24000	7.5-Minute Mt. Madonna Quadrangle
1980	1:24000	7.5-Minute Mt. Madonna Quadrangle
1994	1:24000	7.5-Minute Mt. Madonna Quadrangle
1996	1:24000	7.5-Minute Mt. Madonna Quadrangle
2012	1:24000	7.5-Minute Mt. Madonna Quadrangle
2015	1:24000	7.5-Minute Mt. Madonna Quadrangle

HISTORICAL TOPOGRAPHIC MAPS		
2018	1:24000	7.5-Minute Mt. Madonna Quadrangle

3.1 Regional History

3.11 Regional History

The language family which anthropologists call the Costanoan occupied the region from Monterey up to the San Francisco Bay Area. Costanoan is derived from the Spanish word meaning "coast people." Another general term that is used to designate speakers of the Coastanoan language is Ohlone, which is the most common term used for the San Jose and San Francisco de Asis Indians (http://www.missionscalifornia.com/content/native-americans-san-jose.html).

The number of natives in the San Francisco Bay Area declined steadily after the mission era ended. Most of the Native Americans became laborers on area ranches. In the 1840s, there were a number of multiethnic Indian communities in the area, composed of the people who had lived at the missions; however, decreased in population as the young people moved away. The Indian Scholar Richard Levy reported "the Costanoan languages were probably all extinct by 1935." No official Federal government recognition has ever been given to the Costanoans.

Further land changes took place when Mexico became independent from Spain in 1822. In 1834 all mission land was secularized and became the property of the Mexican government. In 1835, the Mexican Land Grants transferred the land to the property owners who then had control of a few immense ranches.

Prior to the arrival of Spanish expeditions en route from Mexico, peaceful tribes of Native Americans had inhabited the lush Santa Clara Valley for more than 6,000 years. Under Spanish and Mexican jurisdictions, instituted in 1778, a vast region that includes present day Morgan Hill was one of the most substantial Spanish land grants for nearly three quarters of a century.

3.12 Local History

In 1845, Martin Murphy, Sr. acquired 9,000 acres known as the Rancho Ojo de Agua de la Coche. Murphy had been a leader of the first party of pioneers to cross the Sierra Nevada range at Truckee Pass, later to become the route for the Southern Pacific Railroad. The Murphy family made its home in the valley below El Toro Mountain. By 1870 Martin's seven sons and daughters had managed to acquire more than 70,000 acres.

In 1851, the youngest son, Daniel, married Maria Fisher, heiress to the neighboring 19,000-acre Rancho Laguna Seca. In 1882, Diana, their precocious daughter, secretly married Hiram Morgan Hill. When Daniel Murphy died, Diana inherited 4,500 acres of their original rancho in the shadow of El Toro.

Diana and Hiram Morgan Hill built their estate, the Villa Mira Monte, between the railroad and Monterey Road in 1884. When the first Southern Pacific station was built in 1898, the railroad referred to this area as Huntington. Many visitors would request the train stop at "Morgan Hill's Ranch," changing the name to Morgan Hill.

By 1896, the growing community had a population of 250, with a post office, depot, two hotels, a restaurant, and several churches and shops. There was much controversy over the incorporation of the city. The Times printed many editorials supporting the issue, while those opposed were fearful of higher taxes. Nevertheless, the "yes" vote won by a margin of 65-36 and Morgan Hill became incorporated November 10, 1906. By 1909 the population rose to 1,000.

The first school was built in 1894, but was soon outgrown and in 1907 a new elementary school and high school were constructed. Then in 1924 architect William H. Weeks designed and built a new grammar school, selling the old Morgan Hill Grammar School Building to the Morgan Hill Grange Association. By the 1920s, the City was known for its agricultural products including prunes, apricots, peaches, pears, apples, walnuts, and almonds. The region boasted prosperous vineyards until Prohibition demanded that production temporarily cease. Around the 1950s, Morgan Hill experienced an economic transformation from an agricultural center to a suburban residential community. Growth began to accelerate rapidly in the 1970s as Silicon Valley developed and workers were attracted to Morgan Hill's small-town atmosphere, sense of community and reasonable housing prices. On November 3, 1973, the Morgan Hill Civic Center and library were proudly dedicated to the community of 7,000. By 1980 the population increased to approximately 18,000 residents. The 2000 census confirmed that 33,000 citizens called Morgan Hill their home.

Morgan Hill is located in southern Santa Clara Valley, approximately 12 miles south of San Jose, 10 miles north of Gilroy, and 15 miles inland from the Pacific Coast. The Valley is approximately 4 miles wide and is surrounded by the Santa Cruz mountain range to the west, and the Diablo mountain range to the east. Parks and open spaces abound, making Morgan Hill one of the last communities in the region with a charming, small-town atmosphere (http://www.morgan-hill.ca.gov/index.aspx?NID=315).

3.2 Aerial Photographic Site Features

Historical aerial photographs revealed several changes occurring at the subject property over the past 83 years. In 1939, the subject site was vacant and covered with orchards, which continued until 1950, when grading for Barnell Avenue was observed emanating south from Dunne Avenue. By 1979, the residences around the site were developed, but the lot remained vacant. No changes were observed on the subject site through 2016. Copies of the aerial photographs are attached to the appendix.

3.3 Historical Topographic Map Site Features

In 1917, the site was mapped as vacant land and Barnell Avenue was not mapped, while the City of Morgan Hill was mapped further northeast of the site. By 1939, the subject site was mapped as orchards and by 1955, the orchards were not mapped on site, and Barnell Avenue was mapped as a dirt road with a few structures. Increased development was mapped surrounding the site; however, the subject lot remained vacant through 2018. Copies of the historical topographic maps are attached to the appendix.

3.4 Review of Environmental LienSearch™ Report

The property is owned as a Grant Deed and the title is vested in Haren Properties, LLC and title was received from Donald J. Tallerico, a married man, on April 20, 2022, and was recorded on April 22, 2022, under Instrument No. 25288695 for APN 767-12-012. No environmental liens or other activity and use limitations were documented for the parcels. A copy of the EDR Environmental LienSearch™ Report is attached to the appendix.

3.5 Sanborn Map Review

Sanborn Map coverage was not available for the subject site.

3.6 Review of EDR City Directory Abstract

Since the property was never developed, no occupants were listed for the subject site. A copy of the EDR City Directory Abstract is attached to the appendix.

3.7 Review of City and County Records

GeoSolve, Inc. contacted the City of Morgan Hill Building and Planning Departments to ascertain the past use of the property. According to the City of Morgan Hill, the property was never developed. No permits for USTs or wells were documented at the site. In addition, *GeoSolve, Inc.* contacted the Santa Clara County Assessor's Office to ascertain the value of the property. According to the anta Clara County Assessor's Office, the property consists of one approximately 0.207-acre parcel and the value in 2022 was listed as $20,868.00. The site is also zoned as residential with no services (https://www.sccassessor.org/).

3.8 Review of Previous Environmental Reports

No former Phase I ESA reports were documented for the site.

3.9 Interviews with Property Owner

GeoSolve, Inc. contacted the representative for the current property owner, Ms. Kathleen Haren of Haren Properties, LLC via our Owner Interview Questionnaire form, which is attached to the appendix. According to Ms. Haren, Haren Properties, LLC has owned the property since April 22, 2022 and has been a vacant lot and never built. No adverse conditions were reported. She is unaware of any adverse environmental conditions at the site.

4.0 REVIEW OF PUBLIC RECORDS OF REGULATORY AGENCIES

4.1 Primary Contamination Sources

GeoSolve, Inc. conducted a review of files at the County of Santa Clara Department of Environmental Health (CSCDEH), the Morgan Hill Fire Department (MHFD), and the California Regional Water Quality Control Board – Region 2 (RWQCB) using the Geotracker website to ascertain property information for the site. No files were available for review from the CSCDEH, MHFD, or the RWQCB. According to the RWQCB, no files and/or environmental assessment and/or spill or leak investigations and cleanups (SLIC) sites were available for the property (https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Barnell+Avenue%2C+Morgan+Hill%2C+CA).

GeoSolve, Inc. also contacted the California Department of Toxic Substances and Control (DTSC) to ascertain if any files documenting the presence of hazardous wastes and/or hazardous substances were available for the subject site. No SLIC files were identified (https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=barnell+avenue%2C+morgan+hill%2C+ca).

The following is a summary of the potential Hazardous Substances in connection with identified uses:

ACMs and/or LBP

Since no structures were on the property, no ACMs or LBP are suspected to be present on the property.

Radon Gas

According to the EDR Radius Report, the Federal EPA Radon Zone for Santa Clara County is 2 and based on that the indoor radon average level is < 2 pCi/L. Radon gas levels exceeding 4 pCi/L within residential buildings is considered by the EPA to be inhabitable without radon gas mitigation.

Facility Storage Tanks (above or below ground)

No USTs were documented or permitted for the subject site and no visual evidence of USTs was identified during our site visit at the site.

Transformers or Other Electrical Equipment that uses Dielectric Fluid

No transformers were observed on and/or near the property.

Remediation and Site Closures

No remediation or site closures were documented for the subject site.

4.2 Secondary Contamination Source Sites

For the purposes of this investigation, a search was made of 125 State and Federal regulatory agency lists of contaminated or potentially contaminated sites, or properties where transportation,

handling, storage, and/or disposal of hazardous materials occurs or has occurred.

In accordance with recently adopted standards by the American Standard for Testing and Materials (ASTM, 2021), details of the 125 databases which were searched are within the attached EDR, Inc. Report. It should be noted that listings reported without location data were found to be more distant than the standard minimum search distance. In addition, some of the databases consist of lists of handlers, transporters, and generators of toxic materials rather than contaminated sites.

Out of all databases searched, two (2) secondary potential sites were identified within a 0.13-mile radius of the subject site, as discussed below.

- **Monte Vista at Morgan Hill, 16945 Del Monte Avenue, Morgan Hill, California** – this facility is approximately 637 feet east-northeast and cross- and down-gradient from the subject site. This facility was listed on the CUPA Listings database for having a Hazardous Materials Business Plan on file. No other information was available.

- **Kim's Dry-Cleaning Service, 16955 Del Monte Avenue, Morgan Hill, California** – this facility is situated approximately 637 feet east-northeast and cross- and down-gradient from the subject site. This facility was listed on the EDR Hist Cleaner database for this facility being used as a dry-cleaner from 2004 through 2014. No other information was available. .

Additionally, no CA Wells were identified within a 0.25-mile radius of the property. Based on EDR report dated July 19, 2022, the subject property is situated on a FEMA 500-year flood zone.

5.0 DATA GAPS

The following Data Gap was recognized:

- One (1) "orphaned site" was not mapped for the database report. This data gap was filled by reviewing the location of the streets or by physically driving the neighborhood of the subject property to confirm that these orphaned sites were outside the search radius.

This data gap did not alter our findings and/or recommendations for the site.

6.0 SUMMARY OF FINDINGS

GeoSolve, Inc. has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-2021 at a vacant lot along Barnell Avenue in

Morgan Hill, California with APN 767-12-012 in Santa Clara County, California, the property. Any exceptions to, or deletions from, this practice are described in Section 5.0 of this report. This assessment has revealed one (1) Recognized Environmental Condition (REC) associated with the site, namely, 1) possible presence of organochlorine pesticides, arsenic, and lead residues within the surficial soil. No Controlled RECs or significant Data Gaps were documented for the subject properties.

The following summarizes the assessment of the subject site:

- The subject property is situated within the southern Santa Clara Valley in the greater Bay Area. The property is a vacant lot situated along Barnell Avenue in Morgan Hill, California, and totals approximately 0.207-acre with Assessor Parcel Number (APN) 767-12-012 and is bounded by Barnell Avenue to the east, a park to the west, and residences to the north and south. The local topography is relatively flat at approximately 380 feet above msl, which gradually slopes too east-northeast.

- Based on site observations, review of historical aerial photographs and topographic maps, and file review information, the property has been vacant since at least 1917 and was former covered with orchards from 1939 through 1950. No visual evidence to the existence of USTs was identified at the site. No ponds and/or lagoons, archeological findings or noxious odors were noted at the property.

- One (1) REC was identified for the subject property, namely the potential presence of organochlorine pesticide, arsenic, and lead residues with the surficial soil.

- Based on EDR information dated July 21, 2022, two (2) secondary potential site were identified within a 0.13-mile radius of the subject property, but these sites were down- or cross-gradient from the subject property.

7.0 SITE-SPECIFIC RECOMMENDATIONS

In view of the above findings, it is the opinion of ***GeoSolve, Inc.*** additional environmental assessment of the subject property **is warranted**, , and should include the following:

- Collection of at least four (4) randomly located surficial soil samples from the site and two additional soil samples from 3 feet bgs to evaluate background metal concentrations using clean laboratory supplied glass jars, which should be capped, labeled, and placed within a pre-chilled ice chest for temporary storage and delivered under chain-of-custody documentation to

a State-certified hazardous waste testing laboratory for analysis. The 4 surficial soil samples should be analyzed for organochloride pesticides, lead and arsenic and the two background arsenic soil samples should be analyzed for arsenic using Environmental Protection Agency (EPA) Methods SW3550B/SW8081A and EPA Methods SW3050B/SW6020.

8.0 GENERAL RECOMMENDATIONS

In addition, the following recommendations should be considered if any future development of the property is planned:

- During grading activities of the property, soil technicians and operators must be aware of any basements, buried foundations, or reservoir discovered on the property. If any one of these conditions is encountered, then the Soil Engineer must be notified, and the specific condition appropriately remedied in accordance with local, county and state requirements.

- During any grading activities of the property, soil technicians and operators must be aware of any unknown USTs, buried debris, or other potential adverse environmental condition which may be discovered on the property. If any one of these conditions is encountered, then the Soil Engineer must be notified, and the specific condition appropriately remedied in accordance with the local, county, and state and RWQCB requirements.

9.0 PHASE II ENVIRONMENTAL SITE ASSESSMENT

9.1 Fieldwork

On June 29, 2022, a ***GeoSolve, Inc.*** field geologist visited the property in order to randomly collect four (4) surficial soil samples (S-1 through S-4) and two background metal samples (AS-1 and AS-2) using a hand-auger and laboratory supplied glass clean jars in accordance with *Interim Guidance for Sampling Agricultural Properties (Third Revision) California Department of Toxic Substances Control (DTSC) dated August 7, 2008*. The location of soil samples S-1 through S-4, and AS-1 and AS-2 are shown on Figure 2. A hand-auger was used to advance each soil sample approximately 0.5-foot bgs, which was placed into each glass jar. Background arsenic soil samples were collected at 3 feet bgs using a hand-auger. The glass jars were sealed, labeled, and placed within a pre-chilled ice chest for temporary storage. Soil samples S-1 through S-4, AS-1 and AS-2 were delivered under chain-of-custody documentation to McCampbell Analytical, Inc., a State-certified hazardous waste testing laboratory (Certification No. 1644) in Pittsburg, California, for analysis. Soil samples S-1 through S-4 were analyzed for organochloride pesticides using

Environmental Protection Agency (EPA) Methods SW3550B/SW8081A. Soil samples S-1 through S-8, AS-1 and AS-2 were also analyzed for arsenic and lead using EPA Methods SW3050B/SW6020.

9.2 Laboratory Analytical Methods and Results

Laboratory analytical results indicated arsenic concentrations ranging from 1.8 milligrams per kilogram (mg/Kg) to 2.4 mg/Kg and lead concentrations ranged from 19 mg/Kg to 67 mg/Kg within the surficial soil at the site. Organochloride pesticides were mostly not detected (less than 0.001 mg/Kg to less than 0.025 mg/Kg); however, very low concentrations of DDT, DDE, and chlordane, which were below Environmental Screening Levels (ESLs) for residential development (RWQCB, January 2019). The laboratory analytical results are shown on Table 1, Analytical Results of Soil Samples, and a copy of the McCampbell Analytical, Inc. laboratory analytical report and chain-of-custody document are attached to the appendix.

Table 1
Analytical Results of Soil Samples
Vacant Lot – Barnell Avenue
Morgan Hill, California
June 29, 2022

Sample ID	Depth (feet)	DDT (mg/Kg)	DDE (mg/Kg)	DDD (mg/Kg)	Total Chlordane (mg/Kg)	Arsenic (mg/Kg)	Lead (mg/Kg)
S-1	0.5	0.00029	0.00048	<0.00001	0.00679	2.4	34
S-2	0.5	0.00079	0.00079	<0.00001	0.00109	2.0	67
S-3	0.5	0.0011	0.0033	<0.00001	0.00897	1.8	19
S-4	0.5	<0.0001	0.0015	<0.00001	0.00067	3.0	29
AS-1	5	NA	NA	NA	NA	3.1	NA
AS-2	5	NA	NA	NA	NA	2.1	NA
ESLs	---	*1.9*	*1.8*	*2.7*	*0.48*	*0.067**	*82*

mg/Kg = milligrams per kilogram, equivalent to parts per million (ppm).
NA = Not analyzed.
ESLs = Environmental Screening Levels, RWQCB – Region 2, January 2019.
* = RWQCB utilizes background concentrations as cleanup goals for arsenic.

9.21 Potential Natural Arsenic Sources and Background Concentrations

Arsenic occurs in more than 200 minerals and is present mainly in the heavy-mineral fraction of soil as arsenate (As^{+5}) or the oxidized form of arsenic. Arsenic is naturally found in the arsenic-

ore mineral arsenopyrite (FeAsS) and abundant concentrations of arsenic have been detected in the minerals pyrite (up to 77,000 mg/Kg), marcasite (up to 126,000 mg/Kg), ferric oxyhydroxide and hematite (up to 77,000 mg/Kg) as trace elements (Campbell, 2006). Conversely, the lowest levels of arsenic are found in granitic sandy soils (Chang and et. al., 2004). Higher arsenic levels are associated with alluvial soils, rich in organic matter and soils derived from shales and hydrothermally altered bedrock, ancient hot-spring deposits (Campbell, 2006). Based on work conducted by Woolson et al. (1971), arsenic was found to accumulate in soils which had an appreciable amount of calcium, iron, and aluminum, especially in places where the reactive iron concentration of the soils was high.

9.3 Conclusions and Recommendations

Based on the laboratory analytical results of soil samples S-1 through S-4 and AS-1 through AS-4, ***GeoSolve, Inc.*** recommends that further environmental work is **not warranted**.

10.0 LIMITATIONS

This environmental site assessment was performed according to the recommended guidelines established by ASTM designation E1527-2021 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.* This report has been prepared for the specific application to this project in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in this area. This report contains information reported to ***GeoSolve, Inc.,*** by other sources, accordingly, and errors or omissions may be present that ***GeoSolve, Inc.*** cannot be responsible for. The findings of this report apply to the present condition of the subject property only (as of June 29, 2022); the opinions expressed herein are subject to revision in light of new information relevant to the site and/or in its immediate surroundings. Results from Phase I environmental investigations are based on surficial evidence and public records and databases only. Subsurface conditions of the site cannot be properly evaluated without performing a subsurface environmental investigation and actually testing of the soil, and groundwater for potential contaminants.

11.0 INFORMATION SOURCES

ASTM, November 2013. *Standard Practice for .Environmental Site Assessments: Phase I Environmental Site Assessment Process:* ASTM Standards E1527-2021.

City of Morgan Hill Building and Planning Departments.

Environmental Data Resources (EDR) Radius Report dated July 19, 2022.

EDR Aerial Photography Decade Package dated July 20, 2022.

EDR Building Permit Report dated July 19, 2022.

EDR Environmental Lien and AUL Search Report dated July 19, 2022.

EDR Property Tax Map Report dated July 19, 2022.

EDR City Directory Image Report dated July 20, 2022.

EDR Sanborn Map Notice (No Maps Available) dated July 19, 2022.

EDR Historical Topographic Map Report dated July 19, 2022.

Helley, E.J and LaJoie, K.R. *Flatland Deposits of the San Francisco Bay Region, California – Their Geology and Engineering Properties and Their Importance to Comprehensive Planning.* Professional Paper 943, Plate 3.

Morgan Hill Fire Department.

Regional Water Quality Control Board – San Francisco Bay Region

United States Geological Survey, 15-Minute Morgan Hill Quadrangle Topographic Map dated 1917 and 1939, Scale 1:62500.

United States Geological Survey, 7.5-Minute Mt. Madonna Quadrangle Topographic Maps dated 1955, 1968, 1979, 1980, 1994, 1996, 2012, 2015, and 2018.

Online Documents/Resources

https://pubs.usgs.gov/pp/0943/report.pdf

https://s3.us-west-2.amazonaws.com/valleywater.org.if-us-west-2/f2-live/s3fs-public/2020_Annual_Groundwater_Report_web_version.pdf

http://www.missionscalifornia.com/content/native-americans-san-jose.html

http://www.morgan-hill.ca.gov/index.aspx?NID=315

https://www.sccassessor.org/

https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Barnell+Avenue%2C+Morgan+Hill%2C+CA

https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=barnell+avenue%2C+morgan+hill%2C+ca

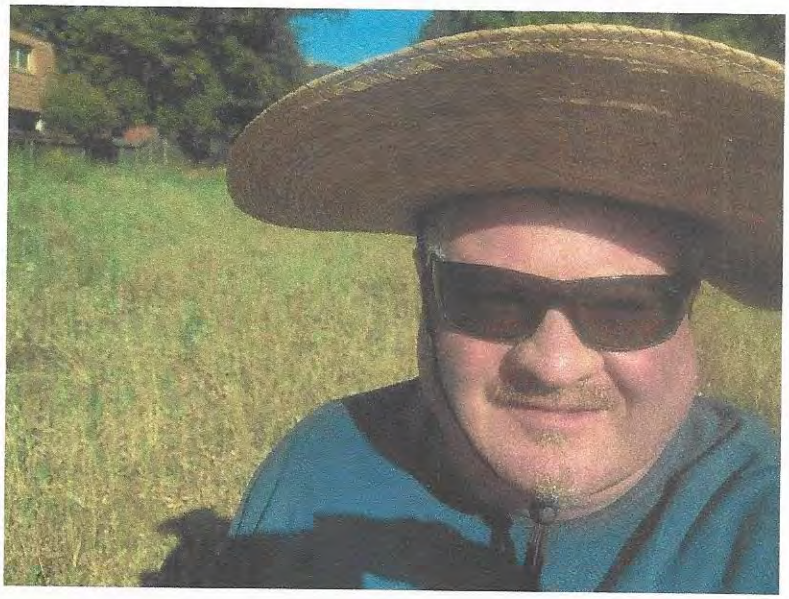
12.0 ENVIRONMENTAL PROFESSIONAL QUALIFICATION

This Phase I Environmental Site Assessment was performed by Mr. Robert D. Campbell, a qualified Environmental Professional as defined in 40 CFR Part 312.10.

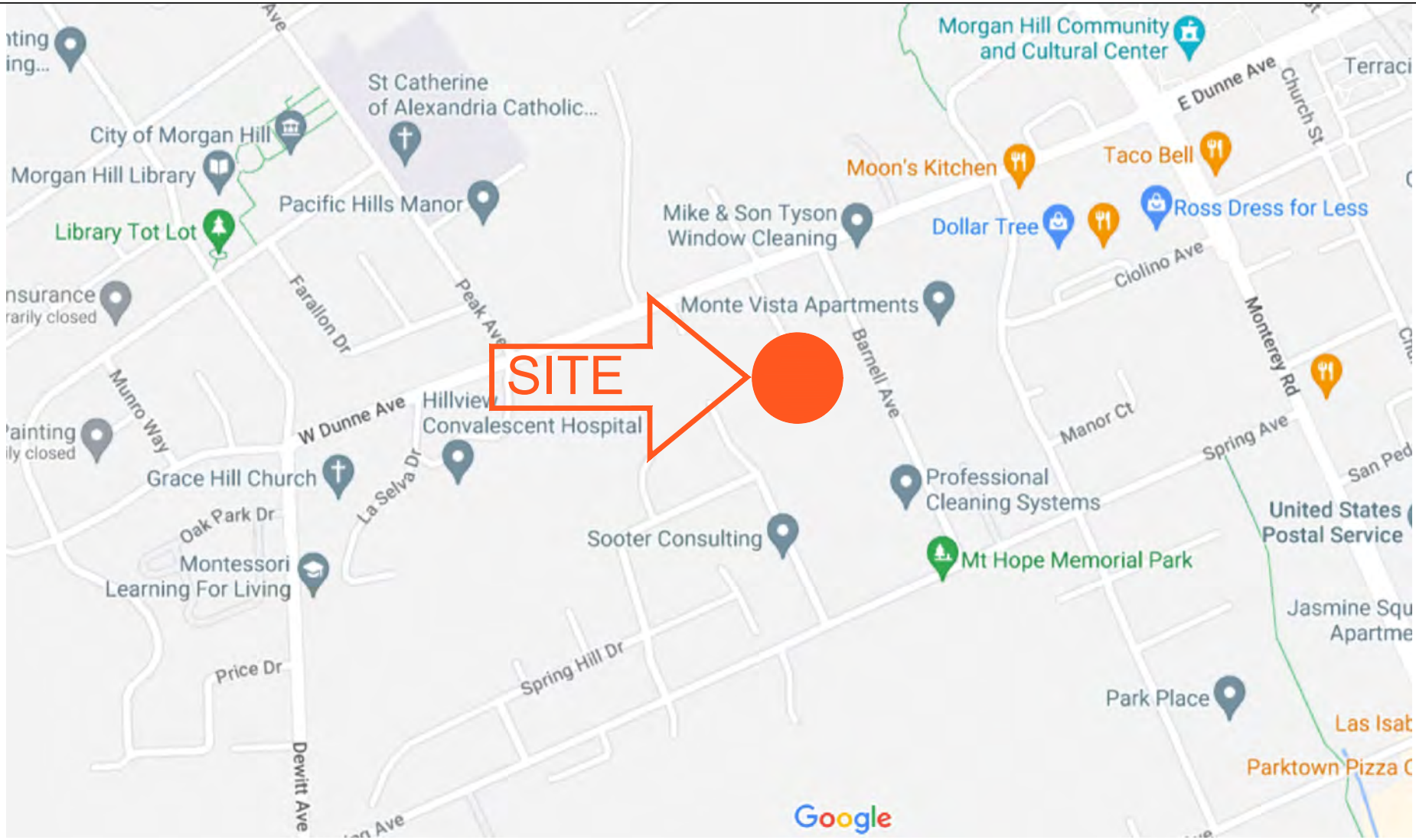
Mr. Campbell holds a Baccalaureate degree from U.C. Davis (an accredited institution of higher education) and a Master of Science degree from C.S.U. East Bay (an accredited institution of higher education) in the discipline of Geology. Mr. Robert D. Campbell holds a valid Professional Geology license in the State of California (6454); a valid Certified Engineering Geology license in the State of California (2089); and a valid Professional Geology license in the State of Arizona.

Mr. Campbell has over 33 years of environmental, geological, and hydrogeological experience, more specifically in environmental assessments including Phase I and Phase II Environmental Site Assessments (ESAs), which exceeds the regulatory requirement of three years of relevant experience.

Mr. Campbell remains current in his field and has received 1.6 Continuing Education Units (CEUs) and 12 Professional Development Hours (PDHs) in the previous 12-month period. He is also compliant with OSHA HAZWOPER 8-hour refresher requirements, including medical surveillance. As required in 40 CFR 312.27, Mr. Campbell directly conducted the Field Visit including the visual inspection of the Site, adjacent properties, and surrounding areas on June 29, 2022, as shown below.



"All Appropriate Inquiry" was also conducted by Mr. Campbell as were all interviews. The record search, historical photo and topographic map search were conducted by EDR, Inc. The findings, opinions and recommendations of this Phase I Environmental Site Assessment are those of ***GeoSolve, Inc.*** as formulated by Mr. Robert D. Campbell.



N

GeoSolve, Inc.
Geoscience solutions rather than Status–Quo
Address: 1807 Santa Rita Rd, Suite H–165
Pleasanton, California 94566
Visit us at www.geosolve-inc.com

VICINITY MAP

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENTS
HAREN PROPERTIES, LLC
VACANT LOT
BARNELL AVENUE
MORGAN HILL, CA

Project No.	Drawn by:
2022-21	GC
Scale:	Date:
NTS	07/2022

Figure No. 1

LEGEND

Property Line

S-1 Surficial Soil Sample Location

AS-1 Arsenic Background Soil Sample Location

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Pleasanton, California 94566
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SITE PLAN

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENTS
HAREN PROPERTIES, LLC
VACANT LOT
BARNELL AVENUE
MORGAN HILL, CA

Project No.	Drawn by:
2022-21	GC
Scale:	Date:
AS SHOWN	07/2022

Figure No. 2

SITE PHOTOGRAPHS

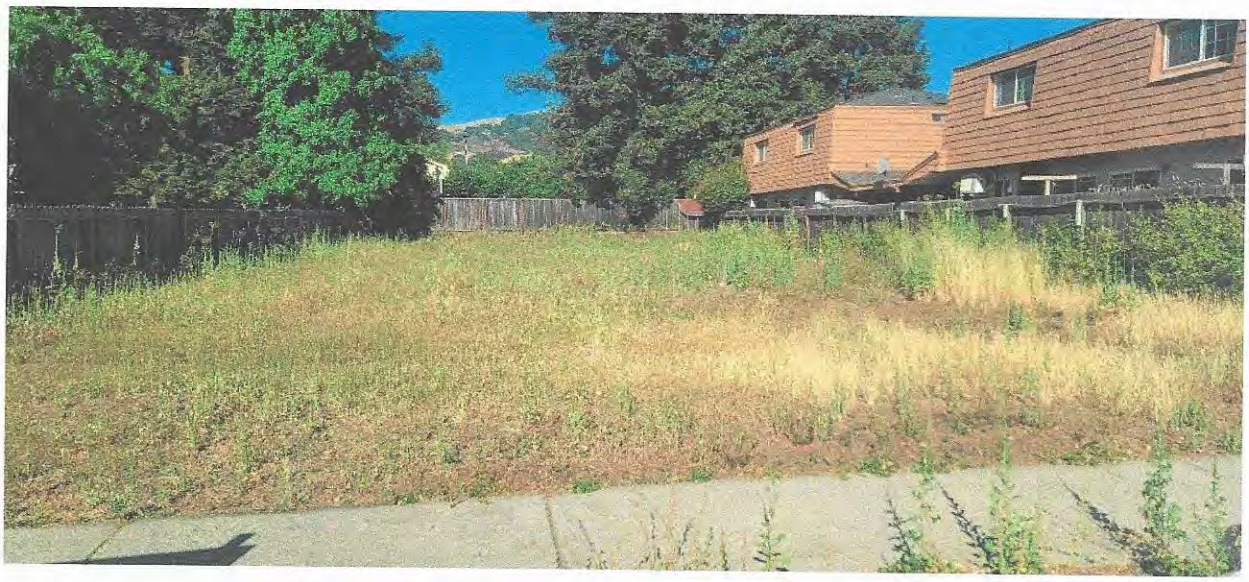

Photo 1A: View of Site from Barnell Avenue (viewing west)

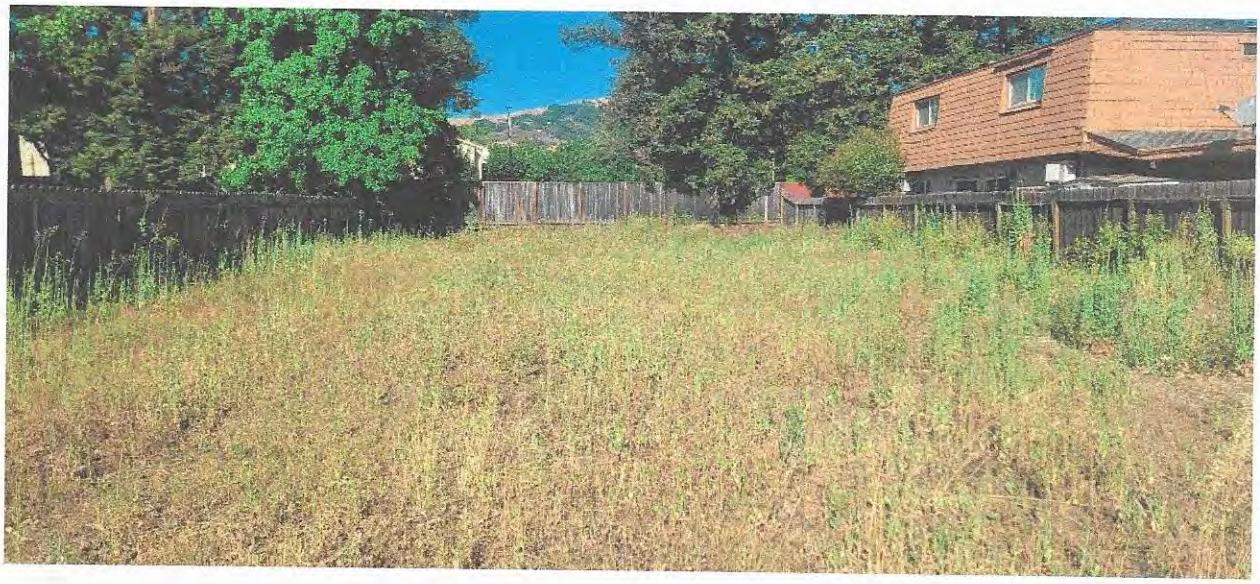

Photo 1B: View of Site from Barnell Avenue (viewing west)

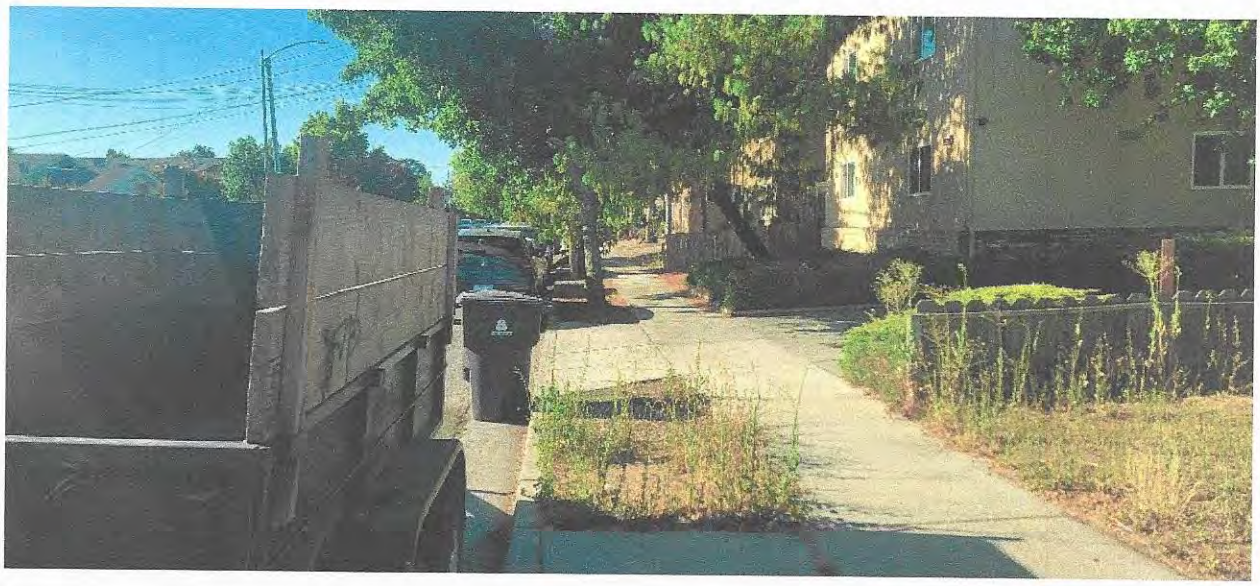

Photo 2A: View along Barnell Avenue (viewing south)

Photo 2B: View of Barnell Avenue from Site (viewing east)

Appendix E

Archeological Resource Management Report

ARCHAEOLOGICAL RESOURCE MANAGEMENT REPORT FOR THE PROPOSED RESIDENTIAL DEVELOPMENT ALONG BARNELL AVENUE, MORGAN HILL, SANTA CLARA COUNTY, CALIFORNIA (APN 767-12-012)

A CULTURAL RESOURCE INVENTORY

PREPARED BY
Andrew Von Pinnon, M.A.

SUBMITTED BY
ARCHAEOLOGICAL RESOURCE SERVICE

SUBMITTED FOR
Gabriel Connors, Intero Real Estate Services,
Care of MH Engineering Co.

December 22, 2022

A.R.S. Project 22-047

Prepared under the authority of the County of Santa Clara

This project is located on the Mt. Madonna, California USGS quadrangle Map(s) and consists of about 0.21 acres

I certify that I am a Registered Professional Archaeologist (RPA certification number 15428) and I am listed by the California Office of Historic Preservation for statewide consulting services.

William G. Roop, M.A., RPA
Consulting Archaeologist
Archaeological Resource Service

TABLE OF CONTENTS

INTRODUCTION

As requested and authorized, Archaeological Resource Service has conducted an archaeological evaluation of the parcel described below. The following tasks were accomplished as part of this project:

1. A check of the information on file with our office and the Regional Office of the California Historical Resources Information System, to determine the presence or absence of previously recorded historic or prehistoric cultural resources,
2. A check of appropriate historic references to determine the potential for historic era archaeological deposits, and;
3. Contact with the Native American Heritage Commission to determine the presence or absence of listed Sacred Lands within the project area;
4. Contact with all appropriate Native American organizations or individuals designated by the Native American Heritage Commission as interested parties for the project area;
5. A surface reconnaissance of all accessible parts of the project area to locate any visible signs of potentially significant historic or prehistoric cultural deposits.
6. Preparation of a report describing the work accomplished, the results of the research, and making appropriate recommendations for further action, if warranted.

PROJECT DESCRIPTION

The following project proposes to construct single-family residence on a 0.21-acre infill parcel (9,275 square feet), although no site plans have been finalized. The archaeological component of this proposed undertaking involves a field reconnaissance of the parcel to determine the presence or absence of potentially significant archaeological resources within the property or in close proximity.

PROJECT LOCATION

The project area is situated within an existing residential neighborhood along Barnell Avenue in Morgan Hill, Santa Clara County, California (APN 767-12-012). The parcel lies in the Mexican era land grant of Ojo de Agua de La Coche within unsectioned of Township 9 South, Range 3 East, Mt. Diablo Base and Meridian, as shown on the USGS 7.5' Mt. Madonna Quadrangle Map (1955; photorevised 1980). The Universal Transverse Mercator Grid coordinates to the approximate center of the project area, as determined by measurement from Google Earth are:

4109330 Meters North,
619530 Meters East,
Zone 10

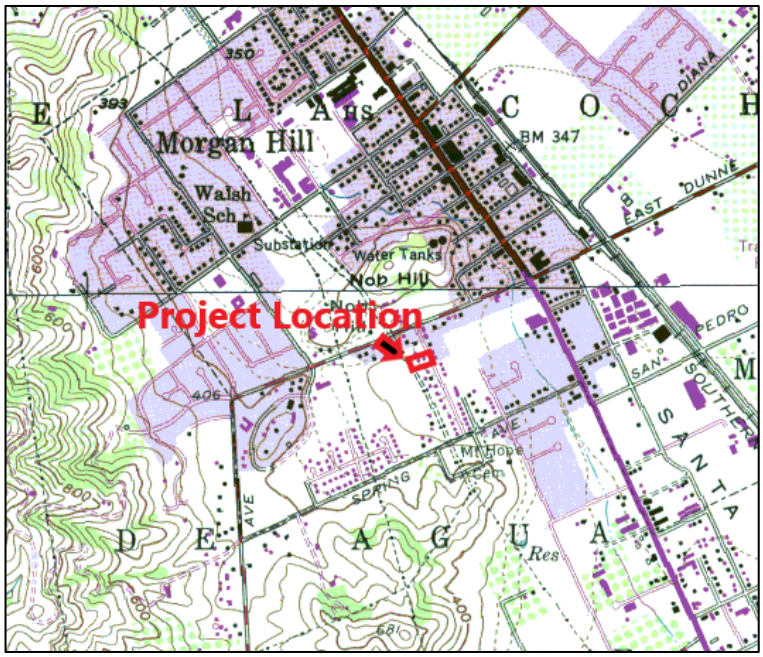

FIGURE 1 -- PROJECT LOCATION

The project site lies within the USGS 7.5' Mt. Madonna Quadrangle.

REGULATORY SETTING

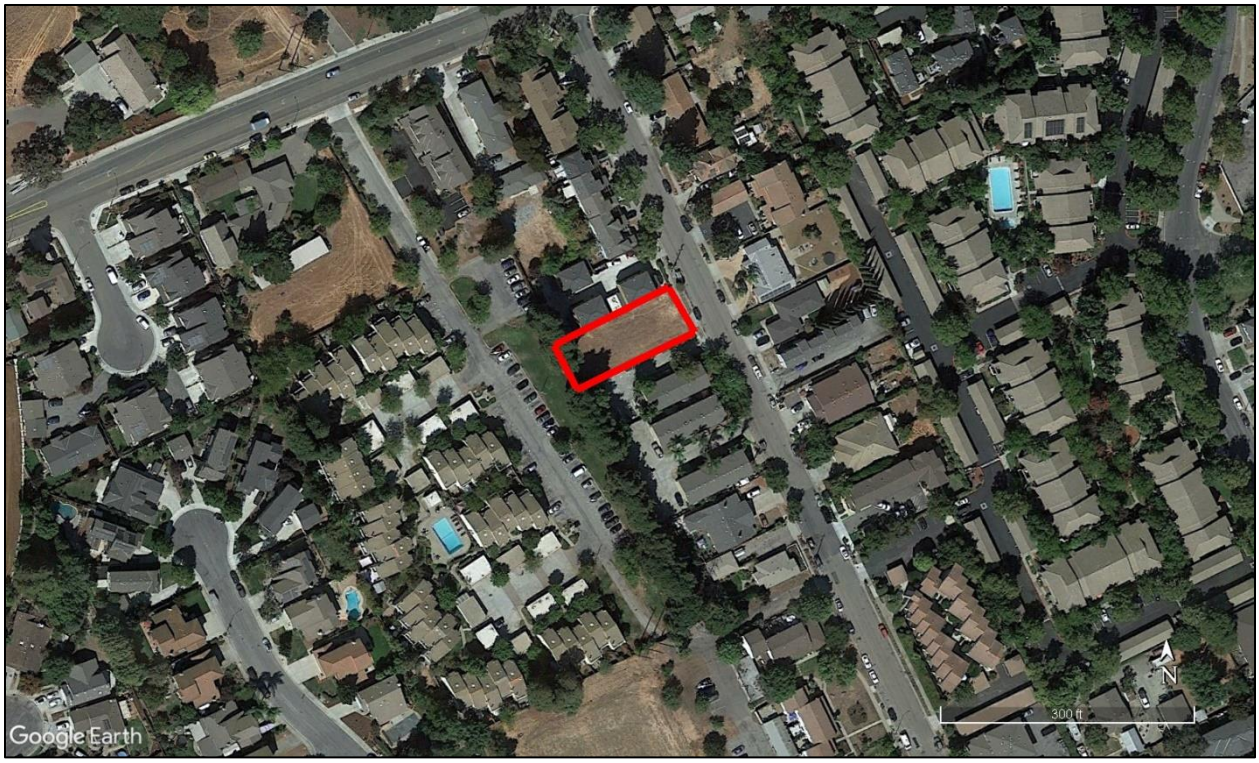

FIGURE 2 -- THE PROJECT PARCEL, WHICH IS OUTLINED IN RED, AS SHOWN THROUGH AERIAL IMAGERY VIA GOOGLE EARTH.

There are no previously recorded prehistoric or historic resources located within the project area. Archaeological resources, once identified, are evaluated using criteria established in the California Environmental Quality Act (CEQA) (14 CCR 15064.5 and PRC 21084.1). Significant historical resources need to be addressed before environmental mitigation guidelines are developed and approved. A "significant historical resource" (including both a prehistoric and historic resource) is one that is found eligible for listing in the California Register of Historical Resources. As per Title 14, California Code of Regulations Section 15064.5, historical resources are those that are:

- Listed in, or eligible for listing in, the California Register of Historic Resources (Public Resources Code 5024.1, Title 14 CCR, Section 4850 et. seq.);
- Listed in, or eligible for listing in, the National Register of Historic Places (CRHR);
- Included in a local register of historical resources, as defined in an historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resource Code; or
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

Additionally, historical resources and historic districts designated or listed as city or county landmarks or historic properties or districts pursuant to any city or county ordinance can also be

listed in the California Register, if the criteria for listing under the ordinance have been determined by the Office of Historic Preservation to be consistent with California Register criteria adopted by the commission (pursuant to Section 5024.1(e) of the PRC).

A resource may be listed as an historical resource in the California Register if it has integrity and meets any of the following National Register of Historic Places criteria:

1) Is associated with events that have made a significant contribution to the broad patterns of our history; or
2) Is associated with the lives of persons important in our past; or
3) Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possesses high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
4) Has yielded, or may be likely to yield, information important in prehistory or history.

CEQA (PRC 21083.2) also distinguishes between two classes of archaeological resources: archaeological sites that meet the definition of a historical resource as above, and "unique archaeological resources." A "unique archaeological resource" has been defined in CEQA as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

Buildings, sites, structures, objects, and districts representative of California and United States history, architecture, archaeology, engineering, and culture convey significance when they also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A resource has integrity if it retains the characteristics that were present during the resource's period of significance. Enough of these characteristics must remain to convey the reasons for its significance.

Tribal cultural resources and Tribal cultural landscapes can be any of a variety of cultural sites as defined by the individual tribe. These resources, once identified, are treated as significant resources under CEQA.

The fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, or included in a local register of historical resources (pursuant to Section 5020.1(k) of the PRC), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the PRC) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC sections 5020.1(j) or 5024.1.

SACRED LANDS INVENTORY / NATIVE AMERICAN CONSULTATION

The California Native American Heritage Commission (NAHC) works to identify, catalogue, and protect places of special religious or social significance, graves, and cemeteries of Native Americans per the authority given the Commission in Public Resources Code 5097.9. ARS initiated a check with the NAHC on November 3rd, 2022 to determine if there are sites listed in the Sacred Lands file located within or near the current project area. A response letter was received on December 1st, indicating the presence of known resources. A list of Native American contacts

was received with this letter, all of whom were contacted directly for further information (Table 1). As of this date, no response has been received from any of these groups. It is therefore recommended that the permitting agency contact these tribes directly.

Table 1 – Tribal Contact List Provided by NAHC

Amah Mutsun Tribal Band Valentin Lopez, Chairperson P.O. Box 5272 Galt, CA, 95632 Phone: (916) 743 - 5833 vlopez@amahmutsun.org Costanoan, Northern Valley Yokut	Amah MutsunTribal Band of Mission San Juan Bautista Irene Zwierlein, Chairperson 3030 Soda Bay Road Lakeport, CA, 95453 Phone: (650) 851 - 7489 Fax: (650) 332-1526 amahmutsuntribal@gmail.com Costanoan	Indian Canyon Mutsun Band of Costanoan Kanyon Sayers-Roods, MLD Contact 1615 Pearson Court San Jose, CA, 95122 Phone: (408) 673 - 0626 kanyon@kanyonkonsulting.com Costanoan
Indian Canyon Mutsun Band of Costanoan Ann Marie Sayers, Chairperson P.O. Box 28 Hollister, CA, 95024 Phone: (831) 637 - 4238 ams@indiancanyons.org Costanoan	Muwekma Ohlone Indian Tribe of the SF Bay Area Monica Arellano, Vice Chairwoman 20885 Redwood Road, Suite 232 Castro Valley, CA, 94546 Phone: (408) 205 - 9714 marellano@muwekma.org Costanoan	The Ohlone Indian Tribe Andrew Galvan, P.O. Box 3388 Fremont, CA, 94539 Phone: (510) 882 - 0527 Fax: (510) 687-9393 chochenyo@AOL.com Bay Miwok, Ohlone, Patwin, Plains Miwok
The Ohlone Indian Tribe Desiree Vigil, THPO 1775 Marco Polo Way, Apt. 21 Burlingame, CA, 94010 Phone: (650) 290 - 0245 dirwin0368@yahoo.com Bay Miwok, Ohlone, Patwin, Plains Miwok	Tamien Nation Johnathan Wasaka Costillas, THPO PO Box 866 Clearlake Oaks, CA, 94523 Phone: (925) 336 - 5359 thpo@tamien.org Costanoan	Tamien Nation Quirina Luna Geary, Chairperson PO Box 8053 San Jose, CA, 95155 Phone: (707) 295 - 4011 qgeary@tamien.org Costanoan
Wuksache Indian Tribe/Eshom Valley Band Kenneth Woodrow, Chairperson 1179 Rock Haven Ct. Salinas, CA, 93906 Phone: (831) 443 - 9702 kwood8934@aol.com Foothill Yokut, Mono		

RESULTS OF LITERATURE CHECK

Prior to performing the fieldwork, the author conducted a literature search to assess the archaeological sensitivity of the project area. The literature search was conducted using information on file at Archaeological Resource Service and the California Historical Resources Inventory Systems office located in Rohnert Park, CA. This record search included checking ethnographic documents, survey reports, and base maps pertaining to the Southern Santa Clara Valley and Morgan Hill in particular.

PREHISTORIC/ETHNOGRAPHIC SETTING

The project area lies within the territory of the Native American people known as the Costanoan or Ohlone. The Costanoan/Ohlone are a group of linguistically related tribes who inhabited the coast of Central California (the San Francisco and Monterey Bay areas), the western edge of the San Joaquin Valley, and as far south as the Sur and Salinas Rivers (Heizer 1974; Levy 1978; Milliken 1991). Linguistically, the Costanoan languages belong to the Penutian language family, which also includes the various Wintun and Patwin, Yokuts, and Maidu languages (Barrett 1908; Kroeber 1904). The linguistic group tha inhabited Morgan Hill were known as the Tamien (Figure 3).

What little is known of Ohlonean culture comes to us from several diverse sources. The first instance of European contact seems to have been initiated in late 1769 when Gaspar de Portola "discovered" the San Francisco Bay, the initiating event of European conquest of the area. With the entry of the Spanish into the area came a concerted effort to convert the Native population to Catholicism that led to the demise of native cultures as well as the extinction of some Native peoples.

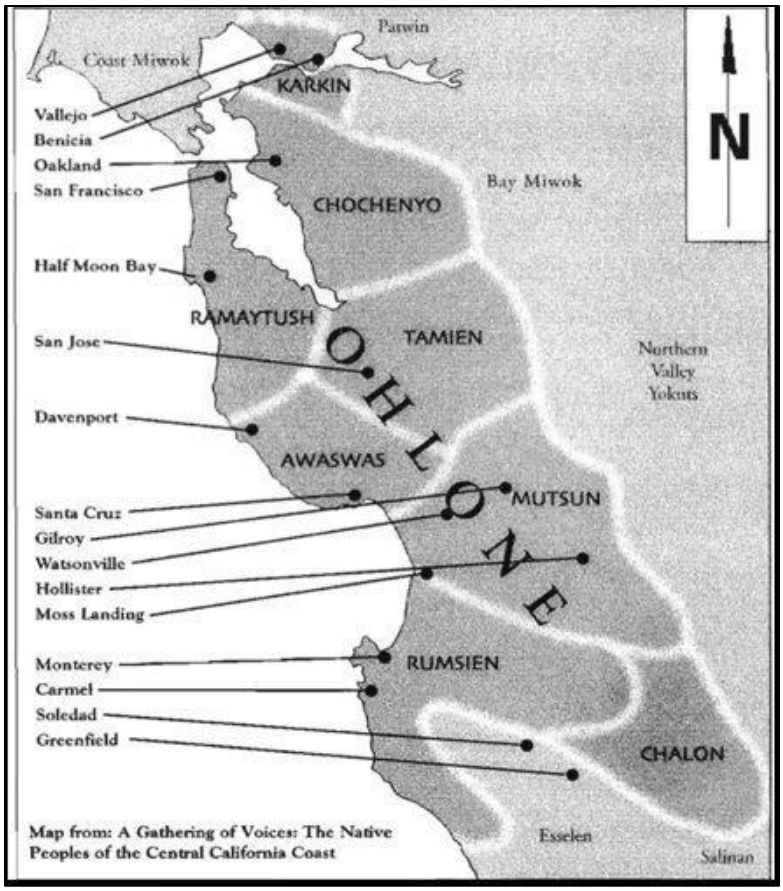

FIGURE 3 -- OHLONE TERRITORY

The project area lies within the lands of the Tamien subgroup.

The early accounts of the material culture of the indigenous peoples of the bay area list many biodegradable products. Goerke et al. (1983) synopsize Father Santa Maria's account of the everyday objects used by the indigenous peoples. These include feathers used as hair adornment and woven into jackets, wooden staves decorated with feathers, feather nets, women's clothing made of deer and other skins, baskets, wooden combs, shell decorated "hairnets", strung shell, bows and arrows, and reed boats (Goerke et al. 1983:4; Galvin 1971:19-31). The use of body paints is indicated, and tattooing may have been practiced: "One alone of the young men had several dark blue lines painted from the lower lip to the waist and from the left shoulder to the right, in such a way as to form a perfect cross" (Galvin 1971:21, 30-31). Certainly tattooing is a known practice of the historically known Costanoan peoples (Levy 1978: 494). Much of the material culture of the area's inhabitants, historic and prehistoric, may not have survived in the archaeological record.

The hills and valleys were home to mammalian species that provided food, clothing, and other products. Mule deer (*Odocoileus* hemionus), elk (*Cervus* canadensis), grizzly bear (*Ursus* chelan) and/or black bear (*Euarctos* americanus), lagomorphs (*Sylvilagus* sp., *Lepus* californicus), mountain lion (*Felis* concolor) and other cats (*Felis* spp.), dog (*Canis* spp.), and rodents (e.g., *Neotoma* spp., *Otospermophilus* spp., *Scirius* spp.) were among the animals hunted. Birds such as the mourning dove (*Zenaida* macroura), robin (*Turdus* migratorius), and California quail (*Lophortyx* californicus) were taken by bone and cord bolas or by trap (Levy 1978: 491), but according to Levy (1978:491) waterfowl were the most important birds in the Costanoan diet. Levy (1978) lists Canada goose (*Branta* canadensis), snow goose (*Chen* caerulescens), white-fronted goose (*Anser* albifrons), American widgeon, pintail, mallard, green-winged teal and shoveler (*Anas* spp.), and American coot (*Fulica* americana) as important prey species which were taken by netting them or luring them with tule or stuffed bird skin decoys.

The bow-and-arrow constituted a part of the hunting technology. Both unbacked and sinew backed bows ranging from 3 to 4½ feet long were used to launch arrows fitted with obsidian or bone points. Other stone tools included obsidian bifaces, hide scrapers, knives, manos and metates, mortars and pestles, net sinkers, anchors and pipes (Levy 1978:493). Levy (1978) says only that a variety of sedimentary and metamorphic rocks were used for non-flaked stone tools without mention of what types of rock were used for specific purposes, but indicates that locally available cherts and obsidian obtained in trade were used for flaked stone tools.

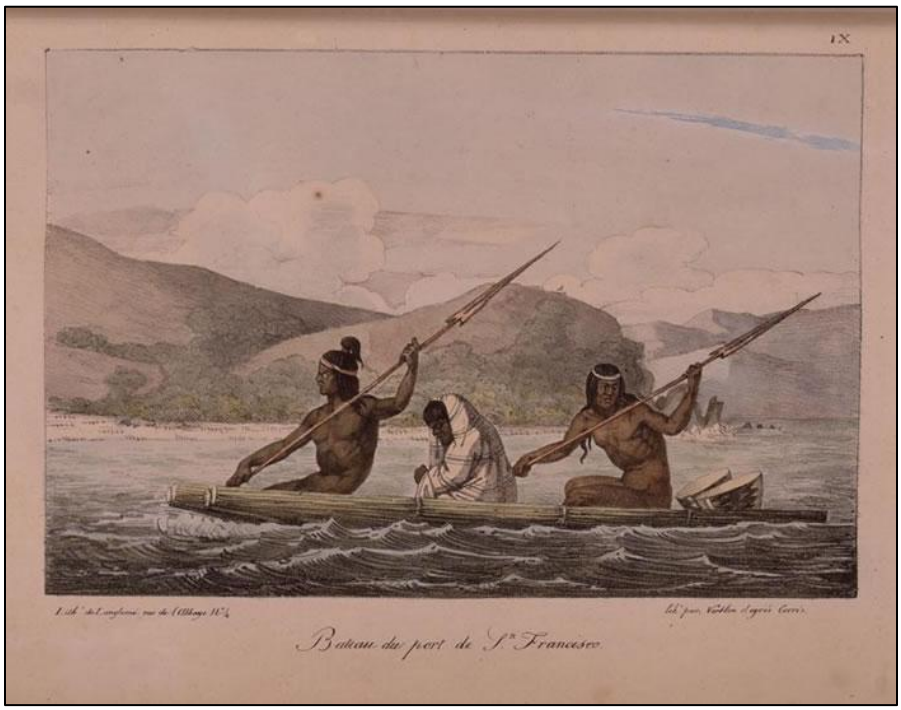

FIGURE 4 -- THREE OHLONES IN A TULE BOAT BY LUIS CHORIS.

Tule balsas were used for fishing in the bay and for transport.

The processing of vegetal foods was important work. Acorns and buckeyes were made edible in much the same way. After removal of the hard exterior the nut meat was pulverized in a mortar (basketry, wood, and stone mortars of various types were used). The resulting meal was then subjected to a leaching process to remove the tannins, rendering the meal edible. Mush or gruel, as well as "bread", could then be prepared. Grass and other seeds could be ground with a mano and metate for use in cooking. The preparation of some seeds involved a roasting process in which the seeds were tossed with live coals in specially made baskets. Greens and laurel nuts were eaten raw or cooked. Berries and other fleshy fruits were collected and eaten raw. Edible roots were known and exploited for food, but it is not clear whether they were cooked or not. All food preparation that required boiling was done in watertight baskets made especially for that purpose. The boiling method involved heating rocks and dropping them into the basket of food to be boiled, e. g., acorn mush, removing the cooled rocks and replacing them with new hot rocks until the food was properly cooked (Broadbent 1972: 60-61; Levy 1978:491, 493).

Economically important plant foods included the fruit of coast live oak (*Quercus* agrifolia), valley oak (*Q*. lobata), California black oak (*Q*. kelloggii), tanbark oak (*Lithocarpus* densiflora), buckeye (*Aesculus* californica) California laurel (*Umbellularia* californica), and hazelnuts (*Corylus* cornuta). Seeds that were roasted before consumption included dock (*Rumex* sp.), tarweed (*Madia* sp.), chia (*Salvia* columbariae), and digger pine (*Pinus* sabiniana). Edible berries that were consumed included blackberries (*Rubus* ursinus), elderberries (*Sambucus* sp.), strawberries (*Fragraria* sp.), manzanita berries (*Arctostaphylos* sp.), gooseberries (*Ribes* sp.), madrone berries (*Arbutus* menziesii), grapes (*Vitis* californica), and toyon berries (*Heteromeles* arbutifolia). Wild onions (*Allium* spp.), cattail roots (*Typha* latifolia), amole (*Chlorogalum* pomeridianum), hog fennel

(*Lomatium* californicum), and wild carrot (*Daucus* pusillus) are some of the roots that were eaten (Levy 1978:491).

The most common type of dwelling was a domed structure thatched with tule, grass, alfalfa, ferns, or carrizon, which was held on a framework of poles with pole binders tied with willow withes (Levy 1978: 492). There was a smoke hole in the center of the roof, and the hearth was placed in the center of the floor. Entry to the structure was through the smoke hole. Some type of vegetal material, described as "rushes", was spread over the floor around the hearth for a sleeping mat (Kroeber 1925:276). There were probably two types of dwelling, one for summer use and one for winter. Construction was generally men's work, but women could, and did, build houses if the men were busy. According to Broadbent (1972:62) houses were also burnt when they became "flea infested." Other types of structures built by the Costanoan peoples include sweathouses, dance houses, menstrual huts, and puberty huts, the latter two being associated exclusively with girls and women. Sweathouses seem to have been variable in size from small ones 6 to 8 feet in diameter with a 1½ foot deep pit to large ones the size of a dance house and 4 to 5 feet deep. Entry was through a roughly 7-foot-long entryway and not through the smoke hole in the roof as was the case with dwellings, probably giving the structure a keyhole-shaped outline. Some sweathouses were individually owned while others appear to have been community facilities (Kelly 1978:417; Levy 1978:492).

FIGURE 5 -- OHLONE MEN AT MISSION SAN JOSE, 1816

This drawing, also by Choris, shows the traditional dance regalia used by Ohlone men.

Many Costanoan groups were quickly absorbed into the Spanish mission system where their numbers drastically declined due to disease and low birth rates. After the breakup of missions in the 1830's, some Natives went to work on nearby ranchos, but very little information is available about this time. Today, descendants of the Costanoan people, who now prefer to use the name Ohlone, live in the San Francisco Bay area.

HISTORIC SETTING

The project area lies in the 9,000-acre Mexican era land grant of *Rancho Ojo del Agua de la Coche*, which was originally bequeathed to Juan María Hernandez by Governor Jose Figueroa in

1835 (Munro-Fraser 1881: 211). The grant was eventually acquired by Martin Murphy in 1845, who had begun an endeavor of purchasing nearby tracts of land during the succeeding decades (Munro-Fraser 1881: 725; McElroy et al. 2006: 25). Through the marriage of his son Daniel to Maria Fisher, daughter of Captain William Fisher, Murphy was able to acquire the neighboring *La Laguna Seca* in 1851 (McElroy et al. 2006: 27). By 1870, Murphy and his family owned more than 70,000 acres within the vicinity (City of Morgan Hill 2022).

The late American Period (1870-1940) brought many changes to the Santa Clara Valley, including the establishment of the Southern Pacific Railroad and the growth of agriculture. The Southern Pacific Railroad helped to transform small villages, such as Gilroy and Morgan Hill, into large population centers. According to King and Hickman,

> *During the period 1870-1880, a major shift in land use occurred which created a new social and economic system, which has dominated the history of the southern Santa Clara Valley to the present time. This was the shift from wheat and cattle to horticulture, which gradually transformed the floor of the valley into a land of orchards and row crops* (King and Hickman 1973).

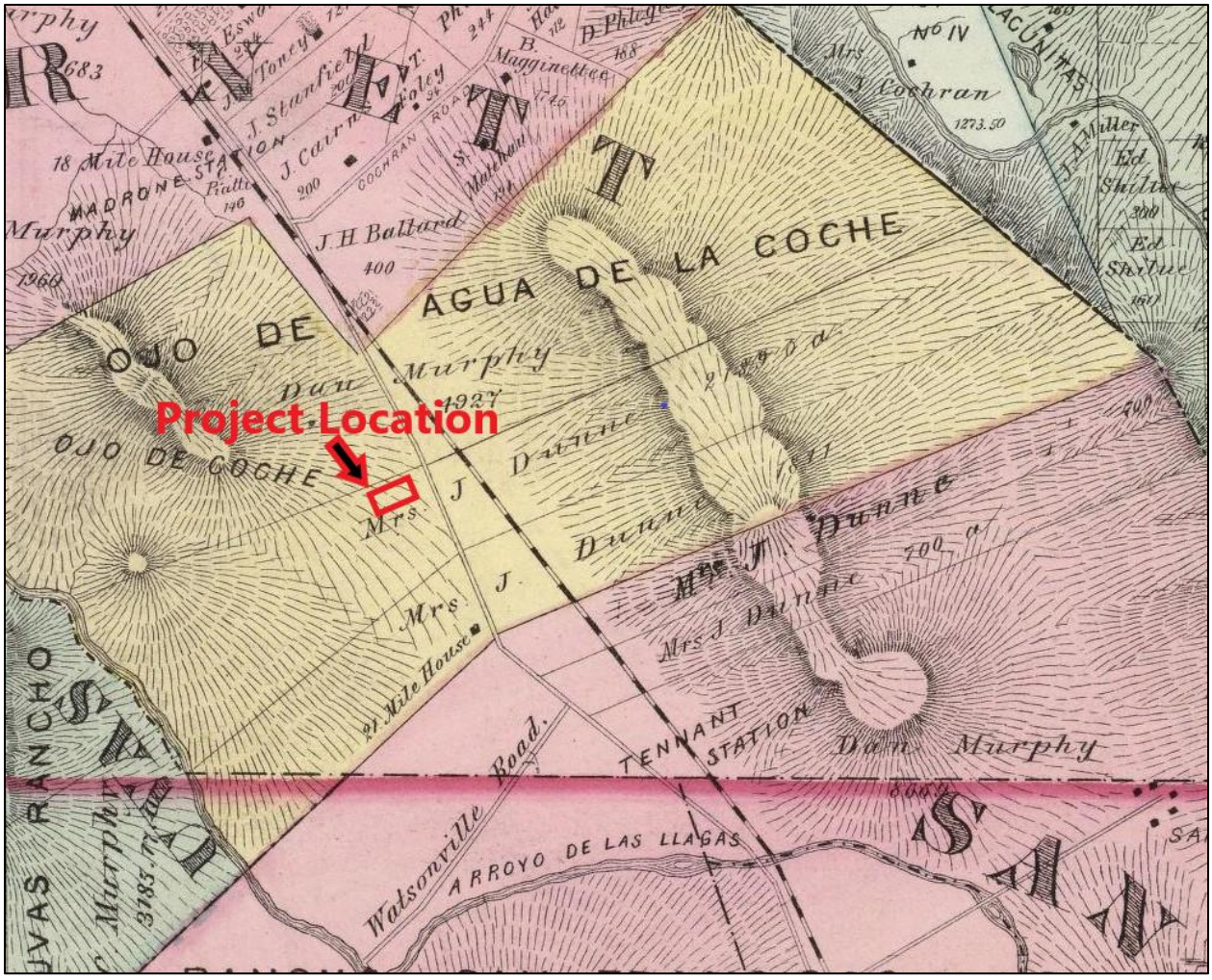

FIGURE 6 -- 1876 THOMPSON & WEST MAP OF SANTA CLARA COUNTY

The project site, as indicated by the red polygon, lies approximately within the property of Mrs. J. Dunne.

Historic resources indicate that the parcel had been associated with agriculture from the time Morgan Hill was initially settled during the mid-19th century. Historically, the project site was part of the property owned by the Dunne Family during the mid- and late 19th century (Thompson & West 1876; Hermann Bros. 1890). However, there is no evidence that suggests there were any prior buildings or structures during this time frame. The only information comes from USGS topographic quadrangles and aerial photos through the 20th century, which indicate that the general vicinity, including the parcel, had been covered by agricultural fields until the 1960s, during which this section of Morgan Hill had begun its transformation into a suburban landscape (United States Geological Survey 1917, 1939, 1955; NETRonline 2022; Regents of the University of California 1939, 1957, and 1965). The project parcel, however, has remained entirely vacant throughout its history, having not been subject to any previous residential development.

PREVIOUS STUDIES

A search of the reports and site records on file at ARS and the NWIC indicates that the project site has never been inspected by an archaeologist before the current evaluation. There are no recorded resources within the parcel, although a fair number of cultural resources surveys have been conducted within the established half-mile research extent (Conger and King 1967; King and Hickman 1973; Flynn 1975, 1986, 1988; Schmucker 1986; Roop 1986; Busby 1996). The nearest recorded site is CA-SCL-000670H, which dates to the historic period (there are no known recorded prehistoric sites within this vicinity). Regarding prehistoric materials and the project site's overall sensitivity for containing such resources, it lies within Quaternary alluvial deposits dating between the Pleistocene and Holocene eras, during which humans inhabited the Santa Clara Valley (Rogers 1966; Wagner et al. 1991). However, decades of ground-disturbing activities such as farming and residential expansion have likely impacted any possible resources (both Native American and historic-era) within the parcel, both above and below the surface. At the current moment, there is no known information on recognized tribal resources within the vicinity.

RESULTS OF SURFACE EXAMINATION

On December 13th, 2022, the author and Brehn Erskine conducted a field survey of the entire parcel via a series of transects spaced roughly 5 meters (16 feet) apart. The parcel is a vacant strip of land showing high levels of disturbance and is covered by low and somewhat dense grass, although ground visibility was by no means hindered. The soil observed was largely a gravelly or sandy clay loam ranging in color between dark or grayish brown and a lighter shade of brown, one that appeared red or yellow. The only cultural materials observed were modern debris, including glass bottle fragments, plastic, aluminum cans, and some unknown machinery that had been discarded.

CONCLUSIONS AND RECOMMENDATIONS

The property does not contain any archaeological resources, nor will the proposed project have any impact upon the known archaeological resources of the area. As such, further archaeological investigation is not warranted at this time. However, if a concentration of artifacts is encountered during earth disturbing activities, work should cease in that area and a qualified archaeologist should be notified and an evaluation performed to assess the material composition, scientific importance, and any possible threat from future residential development.

Artifacts that are typically found associated with prehistoric sites include humanly modified stone, shell, bone or other cultural materials such as charcoal, ash and burned rock indicative of food procurement or processing activities. Prehistoric domestic features include hearths, fire pits, or house floor depressions whereas typical mortuary features are represented by human skeletal remains. Modified cobbles or boulders of schist also might be found in buried contexts. Historic

artifacts and features include all by-products of human land use greater than 50 years of age (outhouse shafts, trash pits, ceramics, glass, nails, etc.).

If human remains are encountered, all work must stop in the immediate vicinity of the discovered remains and the County Coroner and a qualified archaeologist must be notified immediately so that an evaluation can be performed. If the remains are deemed to be Native American and prehistoric, the Native American Heritage Commission should be contacted by the Coroner so that a “Most Likely Descendant” can be designated.

FIGURE 7 -- OVERVIEW OF THE PARCEL FROM THE EASTERN EDGE; LOOKING WEST.

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APPENDIX 1— SIGNIFICANCE AND CULTURAL RESOURCES

To be significant an archaeological site must qualify for registration as an "historic resource" the following criteria must be met for this listing:

> *An archeological site may be considered an historical resource if it is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California (PRC § 5020.1(j)) or if it meets the criteria for listing on the California Register (14 CCR § 4850). CEQA provides somewhat conflicting direction regarding the evaluation and treatment of archeological sites. The most recent amendments to the CEQA Guidelines try to resolve this ambiguity by directing that lead agencies should first evaluate an archeological site to determine if it meets the criteria for listing in the California Register. If an archeological site is an historical resource (i.e., listed or eligible for listing in the California Register) potential adverse impacts to it must be considered, just as for any other historical resource (PRC § 21084.1 and 21083.2(l)). If an archeological site is not an historical resource, but meets the definition of a "unique archeological resource" as defined in PRC § 21083.2, then it should be treated in accordance with the provisions of that section.*

If an archaeological site does not qualify for listing, the directive is clear. The Public Resources Code states:

> *(4) If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.*

APPENDIX 2 – PROFESSIONAL STANDARDS FOR CONSULTANTS

Secretary of the Interior's Standards

The minimum professional qualifications in archeology are a graduate degree in archeology, anthropology, or closely related field plus:

1. At least one year of full-time professional experience or equivalent specialized training in archeological research, administration or management;

2. At least four months of supervised field and analytic experience in general North American archeology; and

3. Demonstrated ability to carry research to completion.

In addition to these minimum qualifications, a professional in prehistoric archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the prehistoric period. A professional in historic archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the historic period.