CLIMATE ACTION PLAN CONSISTENCY CHECKLIST INTRODUCTION

In December 2015, the City adopted a Climate Action Plan (CAP) that outlines the actions that City will undertake to achieve its proportional share of State greenhouse gas (GHG) emission reductions. The purpose of the Climate Action Plan Consistency Checklist (Checklist) is to, in conjunction with the CAP, provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA).[1]

Analysis of GHG emissions and potential climate change impacts from new development is required under CEQA. The CAP is a plan for the reduction of GHG emissions in accordance with CEQA Guidelines Section 15183.5. Pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of the CAP.

This Checklist is part of the CAP and contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. Implementation of these measures would ensure that new development is consistent with the CAP's assumptions for relevant CAP strategies toward achieving the identified GHG reduction targets. Projects that are consistent with the CAP as determined through the use of this Checklist may rely on the CAP for the cumulative impacts analysis of GHG emissions. Projects that are not consistent with the CAP must prepare a comprehensive project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions and incorporation of the measures in this Checklist to the extent feasible. Cumulative GHG impacts would be significant for any project that is not consistent with the CAP.

The Checklist may be updated to incorporate new GHG reduction techniques or to comply with later amendments to the CAP or local, State, or federal law.

[1] Certain projects seeking ministerial approval may be required to complete the Checklist. For example, projects in a Community Plan Implementation Overlay Zone may be required to use the Checklist to qualify for ministerial level review. See Supplemental Development Regulations in the project's community plan to determine applicability.

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CAP CONSISTENCY CHECKLIST SUBMITTAL APPLICATION

- The Checklist is required only for projects subject to CEQA review.[2]
- If required, the Checklist must be included in the project submittal package. Application submittal procedures can be found in Chapter 11: Land Development Procedures of the City's Municipal Code.
- The requirements in the Checklist will be included in the project's conditions of approval.
- The applicant must provide an explanation of how the proposed project will implement the requirements described herein to the satisfaction of the Planning Department.

Application Information

Contact Information

Project No./Name: 5828826 / Kramer CDP/SDP/TM

Property Address: 803 Law Street. San Diego, CA 92109

Applicant Name/Co.: Kelly Kramer - Steelbolt Properties, LLC

Contact Phone: 858-752-2322 Contact Email: kellymichaelkramer@yahoo.com

Was a consultant retained to complete this checklist? ■ Yes ☐ No If Yes, complete the following

Consultant Name: Jennifer Bolyn Contact Phone: 858-459-0575

Company Name: Eos Architecture Contact Email: jen@eosarc.com

Project Information

1. What is the size of the project (acres)? 0.14 acres

2. Identify all applicable proposed land uses:
   - ■ Residential (indicate # of single-family units): 2 single family untis
   - ☐ Residential (indicate # of multi-family units):
   - ☐ Commercial (total square footage):
   - ☐ Industrial (total square footage):
   - ☐ Other (describe):

3. Is the project or a portion of the project located in a Transit Priority Area? ☐ Yes ■ No

4. Provide a brief description of the project proposed:

Subdivision of existing 6,252 SF lot into two single lots, 3,252SF and 3,000SF. Construction of two single family residences. On Southern lot: new two story residence over a full basement, single car garage, adjacent uncovered single parking stall. On northern lot; remodel/addition to existing single story residence to create three story family residence with attached single car garage.

[2] Certain projects seeking ministerial approval may be required to complete the Checklist. For example, projects in a Community Plan Implementation Overlay Zone may be required to use the Checklist to qualify for ministerial level review. See Supplemental Development Regulations in the project's community plan to determine applicability.

CAP CONSISTENCY CHECKLIST QUESTIONS

Step 1: Land Use Consistency

The first step in determining CAP consistency for discretionary development projects is to assess the project's consistency with the growth projections used in the development of the CAP. This section allows the City to determine a project's consistency with the land use assumptions used in the CAP.

Step 1: Land Use Consistency		
Checklist Item (Check the appropriate box and provide explanation and supporting documentation for your answer)	Yes	No
A. Is the proposed project consistent with the existing General Plan and Community Plan land use and zoning designations?;[3] OR, B. If the proposed project is not consistent with the existing land use plan and zoning designations, and includes a land use plan and/or zoning designation amendment, would the proposed amendment result in an increased density within a Transit Priority Area (TPA)[4] and implement CAP Strategy 3 actions, as determined in Step 3 to the satisfaction of the Development Services Department?; OR, C. If the proposed project is not consistent with the existing land use plan and zoning designations, does the project include a land use plan and/or zoning designation amendment that would result in an equivalent or less GHG-intensive project when compared to the existing designations?	☑	☐

If "***Yes***," proceed to Step 2 of the Checklist. For question B above, complete Step 3. For question C above, provide estimated project emissions under both existing and proposed designation(s) for comparison. Compare the maximum buildout of the existing designation and the maximum buildout of the proposed designation.

If "***No***," in accordance with the City's Significance Determination Thresholds, the project's GHG impact is significant. The project must nonetheless incorporate each of the measures identified in Step 2 to mitigate cumulative GHG emissions impacts unless the decision maker finds that a measure is infeasible in accordance with CEQA Guidelines Section 15091. Proceed and complete Step 2 of the Checklist.

The project is consistent with the land use designations in the City's General Plan - Residential and the Pacific Beach Community Plan. The project consist of a lot subdivision and the construction of two single family residences in a developed residential neighborhood.

[3] This question may also be answered in the affirmative if the project is consistent with SANDAG Series 12 growth projections, which were used to determine the CAP projections, as determined by the Planning Department.

[4] This category applies to all projects that answered in the affirmative to question 3 on the previous page: Is the project or a portion of the project located in a transit priority area.

Step 2: CAP Strategies Consistency

The second step of the CAP consistency review is to review and evaluate a project's consistency with the applicable strategies and actions of the CAP. Step 2 only applies to development projects that involve permits that would require a certificate of occupancy from the Building Official or projects comprised of one and two family dwellings or townhouses as defined in the California Residential Code and their accessory structures.[5] All other development projects that would not require a certificate of occupancy from the Building Official shall implement Best Management Practices for construction activities as set forth in the Greenbook (for public projects).

Step 2: CAP Strategies Consistency			
Checklist Item (Check the appropriate box and provide explanation for your answer)	Yes	No	N/A
Strategy 1: Energy & Water Efficient Buildings			
1. *Cool/Green Roofs*. • Would the project include roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified in the voluntary measures under California Green Building Standards Code (Attachment A)?; OR • Would the project roof construction have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot as specified in the voluntary measures under California Green Building Standards Code?; OR • Would the project include a combination of the above two options? Check "N/A" only if the project does not include a roof component. The proposed project will include roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified on the Voluntary Measures under the California Green Building Standards Code.	☑	☐	☐

[5] Actions that are not subject to Step 2 would include, for example: 1) discretionary map actions that do not propose specific development, 2) permits allowing wireless communication facilities, 3) special events permits, 4) use permits or other permits that do not result in the expansion or enlargement of a building (e.g., decks, garages, etc.), and 5) non-building infrastructure projects such as roads and pipelines. Because such actions would not result in new occupancy buildings from which GHG emissions reductions could be achieved, the items contained in Step 2 would not be applicable.

2. *Plumbing fixtures and fittings* With respect to plumbing fixtures or fittings provided as part of the project, would those low-flow fixtures/appliances be consistent with each of the following: Residential buildings: • Kitchen faucets: maximum flow rate not to exceed 1.5 gallons per minute at 60 psi; • Standard dishwashers: 4.25 gallons per cycle; • Compact dishwashers: 3.5 gallons per cycle; and • Clothes washers: water factor of 6 gallons per cubic feet of drum capacity? Nonresidential buildings: • Plumbing fixtures and fittings that do not exceed the maximum flow rate specified in Table A5.303.2.3.1 (voluntary measures) of the California Green Building Standards Code (See Attachment A); and • Appliances and fixtures for commercial applications that meet the provisions of Section A5.303.3 (voluntary measures) of the California Green Building Standards Code (See Attachment A)? Check "N/A" only if the project does not include any plumbing fixtures or fittings. The proposed project will use low-flow fixtures to be consistent with the following: - Kitchen faucets: max flow rate not to exceed 1.5 gallons per minute at 60psi, - Standard dishwasher: 4.25 gallons per cycle, - Clothes washers: 6 gallons per cubic feet if drum capacity.	☑	☐	☐

Strategy 3: Bicycling, Walking, Transit & Land Use			
3. *Electric Vehicle Charging* • Multiple-family projects of 17 dwelling units or less: Would 3% of the total parking spaces required, or a minimum of one space, whichever is greater, be provided with a listed cabinet, box or enclosure connected to a conduit linking the parking spaces with the electrical service, in a manner approved by the building and safety official, to allow for the future installation of electric vehicle supply equipment to provide electric vehicle charging stations at such time as it is needed for use by residents? • Multiple-family projects of more than 17 dwelling units: Of the total required listed cabinets, boxes or enclosures, would 50% have the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use by residents? • Non-residential projects: Of the total required listed cabinets, boxes or enclosures, would 50% have the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use? Check "N/A" only if the project is a single-family project or would not require the provision of listed cabinets, boxes, or enclosures connected to a conduit linking the parking spaces with electrical service, e.g., projects requiring fewer than 10 parking spaces. The required parking serving for each of the proposed single family residences (1 minimum) will be equipped with the electrical service to allow for future installation of electric vehicle supply equipment to provide a EV charging station.	☑	☐	☐

Strategy 3: Bicycling, Walking, Transit & Land Use (Complete this section if project includes non-residential or mixed uses)			
4. *Bicycle Parking Spaces* Would the project provide more short- and long-term bicycle parking spaces than required in the City's Municipal Code (Chapter 14, Article 2, Division 5)?[6] Check "N/A" only if the project is a residential project. 2 unit residential does not apply.	☐	☐	☑

[6] Non-portable bicycle corrals within 600 feet of project frontage can be counted towards the project's bicycle parking requirements.

5. *Shower facilities*

If the project includes nonresidential development that would accommodate over 10 tenant occupants (employees), would the project include changing/shower facilities in accordance with the voluntary measures under the California Green Building Standards Code as shown in the table below?

Number of Tenant Occupants (Employees)	Shower/Changing Facilities Required	Two-Tier (12" X 15" X 72") Personal Effects Lockers Required
0-10	0	0
11-50	1 shower stall	2
51-100	1 shower stall	3
101-200	1 shower stall	4
Over 200	1 shower stall plus 1 additional shower stall for each 200 additional tenant-occupants	1 two-tier locker plus 1 two-tier locker for each 50 additional tenant-occupants

Check "N/A" only if the project is a residential project, or if it does not include nonresidential development that would accommodate over 10 tenant occupants (employees).

Residential development does not apply.

☐	☐	☑

6. *Designated Parking Spaces*

If the project includes a nonresidential use in a TPA, would the project provide designated parking for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles in accordance with the following table?

Number of Required Parking Spaces	Number of Designated Parking Spaces
0-9	0
10-25	2
26-50	4
51-75	6
76-100	9
101-150	11
151-200	18
201 and over	At least 10% of total

This measure does not cover electric vehicles. See Question 4 for electric vehicle parking requirements.

Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces. The required designated parking spaces are to be provided within the overall minimum parking requirement, not in addition to it.

Check "N/A" only if the project is a residential project, or if it does not include nonresidential use in a TPA.

This is a residential use, does not apply.

☐	☐	☑

7. *Transportation Demand Management Program* If the project would accommodate over 50 tenant-occupants (employees), would it include a transportation demand management program that would be applicable to existing tenants and future tenants that includes: At least one of the following components: • Parking cash out program • Parking management plan that includes charging employees market-rate for single-occupancy vehicle parking and providing reserved, discounted, or free spaces for registered carpools or vanpools • Unbundled parking whereby parking spaces would be leased or sold separately from the rental or purchase fees for the development for the life of the development And at least three of the following components: • Commitment to maintaining an employer network in the SANDAG iCommute program and promoting its RideMatcher service to tenants/employees • On-site carsharing vehicle(s) or bikesharing • Flexible or alternative work hours • Telework program • Transit, carpool, and vanpool subsidies • Pre-tax deduction for transit or vanpool fares and bicycle commute costs • Access to services that reduce the need to drive, such as cafes, commercial stores, banks, post offices, restaurants, gyms, or childcare, either onsite or within 1,320 feet (1/4 mile) of the structure/use? Check "N/A" only if the project is a residential project or if it would not accommodate over 50 tenant-occupants (employees). < 50 occupants, therefore under threshold.	☐	☐	☑

Step 3: Project CAP Conformance Evaluation (if applicable)

The third step of the CAP consistency review only applies if Step 1 is answered in the affirmative under option B. The purpose of this step is to determine whether a project that is located in a TPA but that includes a land use plan and/or zoning designation amendment is nevertheless consistent with the assumptions in the CAP because it would implement CAP Strategy 3 actions. In general, a project that would result in a reduction in density inside a TPA would not be consistent with Strategy 3.The following questions must each be answered in the affirmative and fully explained.

1. **Would the proposed project implement the General Plan's City of Villages strategy in an identified Transit Priority Area (TPA) that will result in an increase in the capacity for transit-supportive residential and/or employment densities?**
   Considerations for this question:
   - Does the proposed land use and zoning designation associated with the project provide capacity for transit-supportive residential densities within the TPA?
   - Is the project site suitable to accommodate mixed-use village development, as defined in the General Plan, within the TPA?
   - Does the land use and zoning associated with the project increase the capacity for transit-supportive employment intensities within the TPA?

2. **Would the proposed project implement the General Plan's Mobility Element in Transit Priority Areas to increase the use of transit?**
   Considerations for this question:
   - Does the proposed project support/incorporate identified transit routes and stops/stations?
   - Does the project include transit priority measures?

3. **Would the proposed project implement pedestrian improvements in Transit Priority Areas to increase walking opportunities?**
   Considerations for this question:
   - Does the proposed project circulation system provide multiple and direct pedestrian connections and accessibility to local activity centers (such as transit stations, schools, shopping centers, and libraries)?
   - Does the proposed project urban design include features for walkability to promote a transit supportive environment?

4. **Would the proposed project implement the City of San Diego's Bicycle Master Plan to increase bicycling opportunities?**
   Considerations for this question:
   - Does the proposed project circulation system include bicycle improvements consistent with the Bicycle Master Plan?
   - Does the overall project circulation system provide a balanced, multimodal, "complete streets" approach to accommodate mobility needs of all users?

5. **Would the proposed project incorporate implementation mechanisms that support Transit Oriented Development?**
   Considerations for this question:
   - Does the proposed project include new or expanded urban public spaces such as plazas, pocket parks, or urban greens in the TPA?
   - Does the land use and zoning associated with the proposed project increase the potential for jobs within the TPA?
   - Do the zoning/implementing regulations associated with the proposed project support the efficient use of parking through mechanisms such as: shared parking, parking districts, unbundled parking, reduced parking, paid or time-limited parking, etc.?

6. **Would the proposed project implement the Urban Forest Management Plan to increase urban tree canopy coverage?**
   Considerations for this question:
   - Does the proposed project provide at least three different species for the primary, secondary and accent trees in order to accommodate varying parkway widths?
   - Does the proposed project include policies or strategies for preserving existing trees?
   - Does the proposed project incorporate tree planting that will contribute to the City's 20% urban canopy tree coverage goal?

CLIMATE ACTION PLAN CONSISTENCY CHECKLIST
ATTACHMENT A

This attachment provides performance standards for applicable Climate Action Pan (CAP) Consistency Checklist measures.

Table 1 Roof Design Values for Question 1: Cool/Green Roofs supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan

Land Use Type	Roof Slope	Minimum 3-Year Aged Solar Reflectance	Thermal Emittance	Solar Reflective Index
Low-Rise Residential	≤ 2:12	0.55	0.75	64
	> 2:12	0.20	0.75	16
High-Rise Residential Buildings, Hotels and Motels	≤ 2:12	0.55	0.75	64
	> 2:12	0.20	0.75	16
Non-Residential	≤ 2:12	0.55	0.75	64
	> 2:12	0.20	0.75	16

Source: Adapted from the California Green Building Standards Code (CALGreen) Tier 1 residential and non-residential voluntary measures shown in Tables A4.106.5.1 and A5.106.11.2.2, respectively. Roof installation and verification shall occur in accordance with the CALGreen Code.

CALGreen does not include recommended values for low-rise residential buildings with roof slopes of ≤ 2:12 for San Diego's climate zones (7 and 10). Therefore, the values for climate zone 15 that covers Imperial County are adapted here.

Solar Reflectance Index (SRI) equal to or greater than the values specified in this table may be used as an alternative to compliance with the aged solar reflectance values and thermal emittance.

Table 2	Fixture Flow Rates for Non-Residential Buildings related to Question 2: Plumbing Fixtures and Fittings supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan
Fixture Type	**Maximum Flow Rate**
Showerheads	1.8 gpm @ 80 psi
Lavatory Faucets	0.35 gpm @60 psi
Kitchen Faucets	1.6 gpm @ 60 psi
Wash Fountains	1.6 [rim space(in.)/20 gpm @ 60 psi]
Metering Faucets	0.18 gallons/cycle
Metering Faucets for Wash Fountains	0.18 [rim space(in.)/20 gpm @ 60 psi]
Gravity Tank-type Water Closets	1.12 gallons/flush
Flushometer Tank Water Closets	1.12 gallons/flush
Flushometer Valve Water Closets	1.12 gallons/flush
Electromechanical Hydraulic Water Closets	1.12 gallons/flush
Urinals	0.5 gallons/flush

Source: Adapted from the California Green Building Standards Code (CALGreen) Tier 1 non-residential voluntary measures shown in Tables A5.303.2.3.1 and A5.106.11.2.2, respectively. See the California Plumbing Code for definitions of each fixture type.

Where complying faucets are unavailable, aerators rated at 0.35 gpm or other means may be used to achieve reduction.

Acronyms:
gpm = gallons per minute
psi = pounds per square inch (unit of pressure)
in. = inch

Table 3	**Standards for Appliances and Fixtures for Commercial Application related to Question 2: Plumbing Fixtures and Fittings supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan**	
Appliance/Fixture Type	**Standard**	
Clothes Washers	Maximum Water Factor (WF) that will reduce the use of water by 10 percent below the California Energy Commissions' WF standards for commercial clothes washers located in Title 20 of the *California Code of Regulations*.	
Conveyor-type Dishwashers	0.70 maximum gallons per rack (2.6 L) (High-Temperature)	0.62 maximum gallons per rack (4.4 L) (Chemical)
Door-type Dishwashers	0.95 maximum gallons per rack (3.6 L) (High-Temperature)	1.16 maximum gallons per rack (2.6 L) (Chemical)
Undercounter-type Dishwashers	0.90 maximum gallons per rack (3.4 L) (High-Temperature)	0.98 maximum gallons per rack (3.7 L) (Chemical)
Combination Ovens	Consume no more than 10 gallons per hour (38 L/h) in the full operational mode.	
Commercial Pre-rinse Spray Valves (manufactured on or after January 1, 2006)	Function at equal to or less than 1.6 gallons per minute (0.10 L/s) at 60 psi (414 kPa) and • Be capable of cleaning 60 plates in an average time of not more than 30 seconds per plate. • Be equipped with an integral automatic shutoff. • Operate at static pressure of at least 30 psi (207 kPa) when designed for a flow rate of 1.3 gallons per minute (0.08 L/s) or less.	

Source: Adapted from the California Green Building Standards Code (CALGreen) Tier 1 non-residential voluntary measures shown in Section A5.303.3. See the California Plumbing Code for definitions of each appliance/fixture type.

Acronyms:
L = liter
L/h = liters per hour
L/s = liters per second
psi = pounds per square inch (unit of pressure)
kPa = kilopascal (unit of pressure)

Project Number: 528826

Title: Kramer CDP/SDP/TM

Project Manager: Mendoza, Francisco

CAP Consistency Checklist
Strategy Step 2

Strategy 1: Energy & Water Efficient Buildings

1. *Cool/Green Roofs*.

The proposed project will include roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to California Green Building Standards Code.

2. *Plumbing fixtures and fittings*

The proposed project will use low-flow fixtures to be consistent with the following:

- Kitchen faucets: max flow rate not to exceed 1.5 gallons per minute at 60psi,
- Standard dishwasher: 4.25 gallons per cycle,
- Clothes washers: 6 gallons per cubic feet if drum capacity.

Strategy 2: Clean & Renewable Energy

3. *Energy Performance Standard / Renewable Energy*

The project has been designed to have a 10%+ energy improvement when compared to the Title-24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the California Energy Commission. See attached for design features to support demand reduction.

Strategy 3: Bicycling, Walking, Transit & Land Use

4. *Electric Vehicle Charging*

The required parking serving for each of the proposed single family residences will be equipped with the electrical service to allow for future installation of electric vehicle supply equipment to provide an EV charging station.

Strategy 3: Bicycling, Walking, Transit & Land Use

(Complete this section if project includes non-residential or mixed uses)

5. *Bicycle Parking Spaces*

N/A for single family residential projects per City of San Diego CAP checklist

6. *Shower facilities*

N/A for single family residential projects per City of San Diego CAP checklist

7. *Designated Parking Spaces*
N/A for single family residential projects per City of San Diego CAP checklist

8. *Transportation Demand Management Program*
N/A for single family residential projects per City of San Diego CAP checklist

Project Number: 528826

Title: Kramer CDP/SDP/TM

Project Manager: Francisco Mendoza

Cap Consistency Checklist
Attachment A

Sustainable Features

1. Home will exceed Title-24 by a minim of 15% and will includes Sustainable features throughout as outlined below.
2. Home to be prewired for future install of solar photo voltaic system.
3. Exterior includes Sustainable Fiber Cement siding
4. Energy efficient thermal exterior wall insulation to reduce heating and cooling load as well as insulation for all interior floor and wall assemblies as well.
5. Dual-pane Low-E glass panels on windows and doors
6. Architectural design includes extensive use of passive solar heating and natural ventilation techniques, to reduce the heating and cooling load of the buildings.
7. High efficiency building and ductwork sealing to prevent air loss
8. Ultra-high efficiency heating and cooling units
9. Installation of Energy Star rated appliances thought both homes.
10. Use of tankless energy efficient hot water heating systems.
11. High efficiency lighting and occupancy sensors
12. Use of low VOC paint
13. Use of low emitting adhesives, coating, and carpets.
14. Farming to Use sustainable manufactured lumber where possible.

RNS ACOUSTICS

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La Jolla, CA 92037
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Traffic Noise Study

Analysis Date: 28th April 2017
Performed By: Ryan Sema
Performed For: Kelly Kramer
Project Number: 528826
Tests Performed: Traffic Noise Assessment

The following equipment was used for all recordings and calibrated to 94dB immediately before and after measurements:

Measuring Equipment (ANSI and IEC Class I)	Serial Number	Calibration Level	Calibration Date
Iprecision Microphone	CQ10121	94dB	11/07/16
Calibrator (94dB @1kHz)	N745162	94dB	10/26/16

Summary of Findings:

A noise level study was performed by RNS Acoustics at the request of Kelly Kramer for a new residence construction located at 803 Law St. San Diego, CA 92109. A noise assessment was performed to determine the Community Noise Equivalent Level (CNEL) of traffic along Mission Blvd. Mission Blvd. had an Average Daily Traffic (ADT) of 10,900 in 2013 and is forecast to be 10,700 in 2035. These values indicate exterior traffic noise may exceed the 65 dBA limit of the General Plan Noise Element of the City of San Diego. The 24 hour CNEL was measured to be 62.8 dBA on the 25th of April 2017. This level exceeds the limits in Table NE-3 of the Noise Element for compatibility. The remainder of this report will outline recommendations to ensure that the noise levels in outdoor areas of the residence remain below 60 dBA. If this requirement is met, the the interior noise level limit of 45 dBA should be met with standard construction detail.

Description of the Existing Noise Environment:

Figure 1. below shows the measurement location on the property of 803 Law St. There is an existing 6' wooden fence with 5” wide slats spaced 1/2” apart. The height of the measurement was at 3.5'.

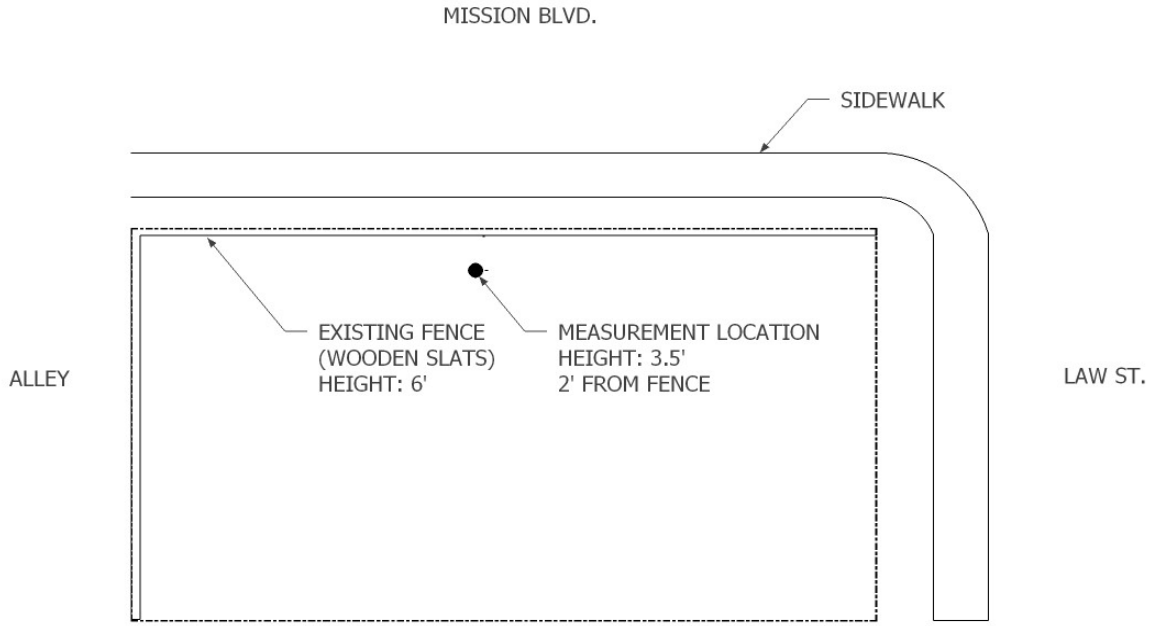


Figure 1. Measurement Location

The measurement location was chosen to represent the worst-case scenario of noise levels from traffic along Mission Blvd.

This is also representative of the outdoor areas along the property line of the proposed residences. The following table lists the measured CNEL in dB(A) as well as the compatible noise levels for single family residences in the City of San Diego.

Measured CNEL vs Noise Element Limits (dBA)			
Measured Level	Compatible	Conditionally Compatible	Incompatible
62.8	60	65	70

Table 1. Measured CNEL vs Limits.

As shown above the conditions on the property fall within the conditionally compatible limits. Mitigation measures need to be implemented to ensure that the level is below the compatible limits. These measures will be outlined later in the report.

Future Acoustical Considerations:

Since the primary concern of noise on this property is traffic, the ADT is used to predict the future acoustic noise environment. It is forecast that the ADT will drop to 10,700 in 2035, therefore if measures are taken to reduce the current noise level then the future noise level will also be within the appropriate limits of the Noise Element.

Impact:

During construction of the mitigation measures described herein, Section 59.5.0404 “Construction Noise” of the City of San Diego Municipal Code should be adhered to:

§59.5.0404 Construction Noise

(a) It shall be unlawful for any person, between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays as specified in Section 21.04 of the San Diego Municipal Code, with exception of Columbus Day and Washington’s Birthday, or on Sundays, to erect, construct, demolish, excavate for, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator. In granting such permit, the Administrator shall consider whether the construction noise in the vicinity of the proposed work site would be less objectionable at night than during the daytime because of different population densities or different neighboring activities; whether obstruction and interference with traffic particularly on streets of major importance, would be less objectionable at night than during the daytime; whether the type of work to be performed emits noises at such a low level as to not cause significant disturbances in the vicinity of the work site; the character and nature of the neighborhood of the proposed work site; whether great economic hardship would occur if the work were spread over a longer time; whether proposed night work is in the general public interest; and he shall prescribe such conditions, working times, types of construction equipment to be used, and permissible noise levels as he deems to be required in the public interest.

(b) Except as provided in subsection C. hereof, it shall be unlawful for any person, including The City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12– hour period from 7:00 a.m. to 7:00 p.m.

(c) The provisions of subsection B. of this section shall not apply to construction equipment used in connection with emergency work, provided the Administrator is notified within 48 hours after commencement of work

Mitigation Measures:

Outdoor Areas:
There currently exists a wooden fence on the property that was in between the measurement location and the traffic noise along Mission Blvd. The fence is constructed of wooden slats that are 6' tall which have a 1/2in gap between each slat. These air gaps allow 10% of the sound to pass without any attenuation that results in a reduction of 8 dBA compared to a solid wooden fence of the same height. If this fence did not have any air gaps the resulting CNEL would be 54.2. Therefore it is recommended that a solid wooden fence of at least 6' be constructed with no air gaps between slats. This fence should run along with western property line that runs parallel to Mission Blvd. This will ensure that the compatible limit listed in the Noise Element is not exceeded. Tongue and groove slats are a good example of an airtight seal but other methods can be used.

Indoor:
If a wooden fence is built per the specifications above, then wall and window types that meet the current building code will attenuate the CNEL noise level to below 45dBA. Windows assemblies should be used throughout the home that have STC ratings of at least 20. A mechanical ventilation system (Air Conditioning) is recommended to prevent the need to have the windows open which may violate the indoor noise level requirements.

The following table shows the predicted CNEL if the mitigation measures above are followed.

CNEL dB(A)					
Current Noise Levels		Noise Levels with Mitigation Measures		Compatible Limit	
Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor
62.8	45	54	28.2	60	45

Table 2. Current CNEL vs CNEL with appropriate mitigation measures.

As shown in Table 2. above, if the recommended mitigation measures are included in the construction then the limits set forth in the San Diego Noise Element for single family residences will not be exceeded both now and in the future.

Post Project Assessment:

In order to determine the effectiveness of the proposed mitigation measures, a noise assessment should be performed after construction is completed. This should be identical to the assessment outlined in this document regarding microphone position and type (CNEL). This will ensure that the property meets all applicable limits and regulations regarding noise.

RNS ACOUSTICS

9134 Regents Rd-C
La Jolla, CA 92037
Ph: 228 218 6999
RNSACOUSTICS.COM

Traffic Noise Study

Analysis Date: 28th April 2017
Performed By: Ryan Sema
Performed For: Kelly Kramer
Project Number: 528826
Tests Performed: Traffic Noise Assessment

The following equipment was used for all recordings and calibrated to 94dB immediately before and after measurements:

Measuring Equipment (ANSI and IEC Class I)	Serial Number	Calibration Level	Calibration Date
Iprecision Microphone	CQ10121	94dB	11/07/16
Calibrator (94dB @1kHz)	N745162	94dB	10/26/16

Summary of Findings:

A noise level study was performed by RNS Acoustics at the request of Kelly Kramer for a new residence construction located at 803 Law St. San Diego, CA 92109. A noise assessment was performed to determine the Community Noise Equivalent Level (CNEL) of traffic along Mission Blvd. Mission Blvd. had an Average Daily Traffic (ADT) of 10,900 in 2013 and is forecast to be 10,700 in 2035. These values indicate exterior traffic noise may exceed the 65 dBA limit of the General Plan Noise Element of the City of San Diego. The 24 hour CNEL was measured to be 62.8 dBA on the 25th of April 2017. This level exceeds the limits in Table NE-3 of the Noise Element for compatibility. The remainder of this report will outline recommendations to ensure that the noise levels in outdoor areas of the residence remain below 60 dBA. If this requirement is met, the the interior noise level limit of 45 dBA should be met with standard construction detail.

Description of the Existing Noise Environment:

Figure 1. below shows the measurement location on the property of 803 Law St. There is an existing 6' wooden fence with 5” wide slats spaced 1/2” apart. The height of the measurement was at 3.5'.

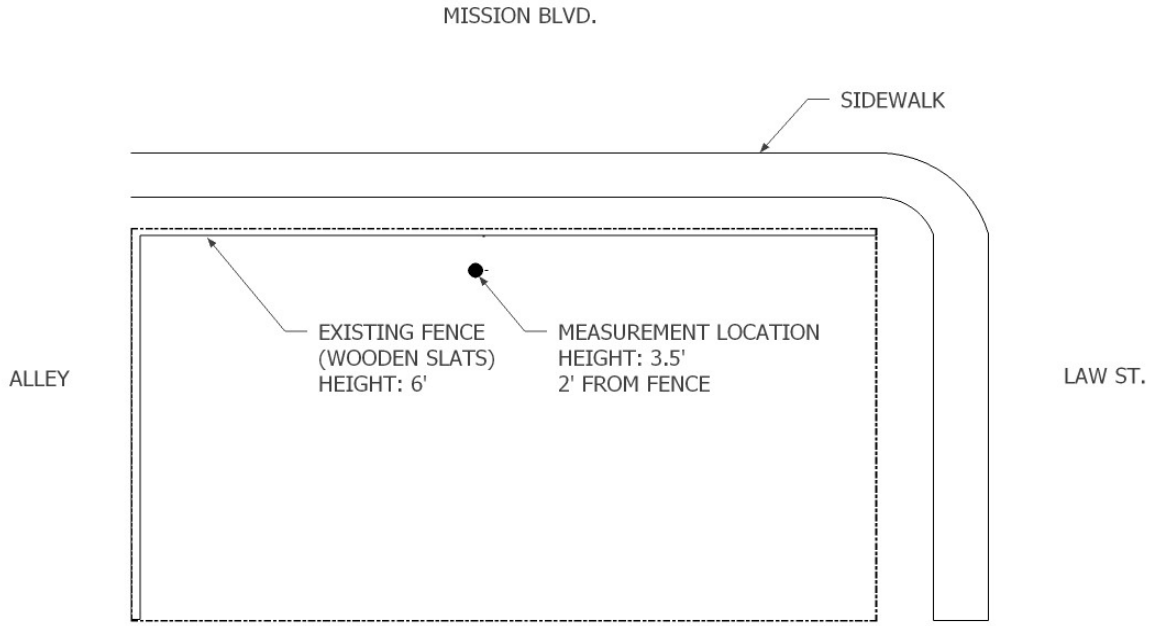


Figure 1. Measurement Location

The measurement location was chosen to represent the worst-case scenario of noise levels from traffic along Mission Blvd.

This is also representative of the outdoor areas along the property line of the proposed residences. The following table lists the measured CNEL in dB(A) as well as the compatible noise levels for single family residences in the City of San Diego.

Measured CNEL vs Noise Element Limits (dBA)			
Measured Level	Compatible	Conditionally Compatible	Incompatible
62.8	60	65	70

Table 1. Measured CNEL vs Limits.

As shown above the conditions on the property fall within the conditionally compatible limits. Mitigation measures need to be implemented to ensure that the level is below the compatible limits. These measures will be outlined later in the report.

Future Acoustical Considerations:

Since the primary concern of noise on this property is traffic, the ADT is used to predict the future acoustic noise environment. It is forecast that the ADT will drop to 10,700 in 2035, therefore if measures are taken to reduce the current noise level then the future noise level will also be within the appropriate limits of the Noise Element.

Impact:

During construction of the mitigation measures described herein, Section 59.5.0404 “Construction Noise” of the City of San Diego Municipal Code should be adhered to:

§59.5.0404 Construction Noise

(a) It shall be unlawful for any person, between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays as specified in Section 21.04 of the San Diego Municipal Code, with exception of Columbus Day and Washington’s Birthday, or on Sundays, to erect, construct, demolish, excavate for, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator. In granting such permit, the Administrator shall consider whether the construction noise in the vicinity of the proposed work site would be less objectionable at night than during the daytime because of different population densities or different neighboring activities; whether obstruction and interference with traffic particularly on streets of major importance, would be less objectionable at night than during the daytime; whether the type of work to be performed emits noises at such a low level as to not cause significant disturbances in the vicinity of the work site; the character and nature of the neighborhood of the proposed work site; whether great economic hardship would occur if the work were spread over a longer time; whether proposed night work is in the general public interest; and he shall prescribe such conditions, working times, types of construction equipment to be used, and permissible noise levels as he deems to be required in the public interest.

(b) Except as provided in subsection C. hereof, it shall be unlawful for any person, including The City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12– hour period from 7:00 a.m. to 7:00 p.m.

(c) The provisions of subsection B. of this section shall not apply to construction equipment used in connection with emergency work, provided the Administrator is notified within 48 hours after commencement of work

Mitigation Measures:

Outdoor Areas:
There currently exists a wooden fence on the property that was in between the measurement location and the traffic noise along Mission Blvd. The fence is constructed of wooden slats that are 6' tall which have a 1/2in gap between each slat. These air gaps allow 10% of the sound to pass without any attenuation that results in a reduction of 8 dBA compared to a solid wooden fence of the same height. If this fence did not have any air gaps the resulting CNEL would be 54.2. Therefore it is recommended that a solid wooden fence of at least 6' be constructed with no air gaps between slats. This fence should run along with western property line that runs parallel to Mission Blvd. This will ensure that the compatible limit listed in the Noise Element is not exceeded. Tongue and groove slats are a good example of an airtight seal but other methods can be used.

Indoor:
If a wooden fence is built per the specifications above, then wall and window types that meet the current building code will attenuate the CNEL noise level to below 45dBA. Windows assemblies should be used throughout the home that have STC ratings of at least 20. A mechanical ventilation system (Air Conditioning) is recommended to prevent the need to have the windows open which may violate the indoor noise level requirements.

The following table shows the predicted CNEL if the mitigation measures above are followed.

CNEL dB(A)					
Current Noise Levels		Noise Levels with Mitigation Measures		Compatible Limit	
Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor
62.8	45	54	28.2	60	45

Table 2. Current CNEL vs CNEL with appropriate mitigation measures.

As shown in Table 2. above, if the recommended mitigation measures are included in the construction then the limits set forth in the San Diego Noise Element for single family residences will not be exceeded both now and in the future.

Post Project Assessment:

In order to determine the effectiveness of the proposed mitigation measures, a noise assessment should be performed after construction is completed. This should be identical to the assessment outlined in this document regarding microphone position and type (CNEL). This will ensure that the property meets all applicable limits and regulations regarding noise.

CITY OF SAN DIEGO
WATER QUALITY STUDY

Prepared by: San Diego Land Surveying and Engineering, INC.
9665 Chesapeake Drive, Suite 445, San Diego, Ca. 92123
Michael L. Smith, Project Engineer, RCE 35471

Date: May 10, 2017

PROJECT SITE LOCATION: **City PTS No.**
The project is located at 803 LAW STREET, San Diego, Ca.
Assessor's Parcel Number 414-462-01

EXISTING PROJECT SITE DESCRIPTION:
The existing area of the site is 6,252 sf. Or 0.1435 acres. The existing site is occupied by a single family home. The site drains to the west and south to Mission Blvd. Mission Blvd drains to the south. The storm runoff from the site sheet flows to the public right-of-way and is not treated.

The impervious area of the existing site is 2,004 square feet or 32.1% of the site.
See Exhibit A at the back of this report.

PROPOSED PROJECT DESCRIPTION:
The disturbed area for this project is 0.1435 acres. The existing single family home is to be remodeled. Earth work will consist of minor grading and compaction of the area underneath the proposed structure. One new home, landscaping, hardscape and a one car garage are proposed. Installation of landscaping will require minor grading on site. Off site work will be limited to the added water service and sewer lateral required for the new house. The new house will take access off of the alley, no new driveway apron will be required. Storm water will be directed to landscape areas for treatment. Storm water will be discharged to the public street gutter and the public concrete alley.

The impervious area of the proposed site is 4,624 square feet or 74.0% of the site.
See Exhibit B at the back of this report

Required Permanent Best Management Practices for Standard Development Projects

Source Control (SC) BMP Requirements:

SC-1: Prevent illicit discharges into the MS4
An illicit discharge is any discharge to the MS4 that is not composed entirely of storm water except discharges pursuant to a National Pollutant Discharge Elimination System permit and discharges resulting from firefighting activities. Projects must effectively eliminate discharges of non-storm water into the MS4. This may involve a suite of housekeeping BMPs which could include effective irrigation, dispersion of non-storm water discharges into landscaping for infiltration, and controlling wash water from vehicle washing.

DISCUSSION:

The proposed irrigation and landscape design is done by a registered professional and will be submitted to the City of San Diego to comply with Municipal Code. It shall include flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines. Any vehicle maintenance conducted by the home owners will follow good housekeeping practices such as not allowing contaminated water to run into the public street. This is accomplished by the utilization of a temporary flow diverter to a landscaped area.

SC-2: Identify the storm drain system using stenciling or signage

Storm drain signs and stencils are visible source controls typically placed adjacent to the inlets. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Stenciling shall be provided for all storm water conveyance system inlets and catch basins within the project area. Inlet stenciling may include concrete stamping, concrete painting, placards, or other methods approved by the local municipality. In addition to storm drain stenciling, projects are encouraged to post signs and prohibitive language (with graphical icons) which prohibit illegal dumping at trailheads, parks, building entrances and public access points along channels and creeks within the project area.

Language associated with the stamping (e.g., "No Dumping-Drains to Ocean") must be satisfactory to the City Engineer. Stamping may also be required in Spanish.

DISCUSSION:

There is no existing storm drain system. The proposed project storm runoff will be directed to landscaped areas and sheet flow the public road or alley. No inlets or channels are proposed for this site, so no stenciling or signage is required.

SC-3: Protect outdoor material storage areas from rainfall, run-on, runoff, and wind dispersal

Materials with the potential to pollute storm water runoff shall be stored in a manner that prevents contact with rainfall and storm water runoff. Contaminated runoff shall be managed for treatment incorporate the following structural or pollutant control BMPs for outdoor material storage areas, as applicable and feasible:

Materials with the potential to contaminate storm water shall be:

• Placed in an enclosure such as, but not limited to, a cabinet, or similar structure, or under a roof or awning that prevents contact with rainfall runoff or spillage to the storm water conveyance system; or
• Protected by secondary containment structures such as berms, dikes, or curbs.
• The storage areas shall be paved and sufficiently impervious to contain leaks and spills, where necessary.
(continued below)
• The storage area shall be sloped towards a sump or another equivalent measure that is effective to contain spills.
• Runoff from downspouts/roofs shall be directed away from storage areas.
• The storage area shall have a roof or awning that extends beyond the storage area to minimize collection of storm water within the secondary containment area. A manufactured storage shed may be used for small containers.

DISCUSSION:

This project is the construction of two single family homes. There are no outdoor material storage areas included in the design.

SC-4: Protect materials stored in outdoor work areas from rainfall, run-on, runoff, and wind dispersal
Outdoor work areas have an elevated potential for pollutant loading and spills. All development projects shall include the following structural or pollutant control BMPs for any outdoor work areas with potential for pollutant generation, as applicable and feasible:

• Create an impermeable surface such as concrete or asphalt, or a prefabricated metal drip pan, depending on the size needed to protect the materials.
• Cover the area with a roof or other acceptable cover.
• Berm the perimeter of the area to prevent water from adjacent areas from flowing on to the surface of the work area.
• Directly connect runoff to sanitary sewer or other specialized containment system(s), as needed and where feasible. This allows the more highly concentrated pollutants from these areas to receive special treatment that removes particular constituents. Approval for this connection must be obtained from the appropriate sanitary sewer agency.
• Locate the work area away from storm drains or catch basins.

DISCUSSION:

This project is the construction of two single family homes. There are no materials stored in outdoor work area included in the design.

SC-5: Protect trash storage areas from rainfall, run-on, runoff, and wind dispersal
Storm water runoff from areas where trash is stored or disposed of can be polluted. In addition, loose trash and debris can be easily transported by water or wind into nearby storm drain inlets, channels, and/or creeks. All development projects shall include the following structural or pollutant control BMPs, as applicable:

• Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This can include berming or grading the waste handling area to prevent run-on of storm water.
• Ensure trash container areas are screened or walled to prevent offsite transport of trash.
• Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
• Locate storm drains away from immediate vicinity of the trash storage area and vice versa.
• Post signs on all dumpsters informing users that hazardous material are not to be disposed.

DISCUSSION:

This project is the construction of two single family homes; the trash storage areas will be limited to the City approved trash containers that will be stored in the garage.

SC-6: Use any additional BMPs determined to be necessary by the Copermittee to minimize pollutant generation at each project site
Appendix E.1 provides guidance on permanent controls and operational BMPs that are applicable at a project site based on potential sources of runoff pollutants at the project site. The project shall implement all applicable and feasible source control BMPs listed in Appendix E.1. In addition to the source control BMPs in Appendix E.1, additional source control requirements apply for the following project types within the City jurisdiction. Guidance for implementing these additional source control requirements are presented in Appendix E.

• **SC-6A: Large Trash Generating Facilities**: Includes but are not limited to restaurants, supermarkets, "big box" retail stores serving food, and pet stores. Refer to Appendix E.20

• **SC-6B: Animal Facilities**: Includes but are not limited to animal shelters, dog daycare centers, veterinary clinics, groomers, pet care stores, and breeding, boarding, and training facilities. Refer to Appendix E.21

• **SC-6C: Plant Nurseries and Garden Centers**: Includes but are not limited to commercial facilities that grow, distribute, sell, or store plants and plant material. Refer to Appendix E.22

• **SC-6D: Automotive-related Uses**: include but are not limited to facilities that perform maintenance or repair of vehicles, vehicle washing facilities, and retail gasoline outlets. Refer to Appendix E.23

DISCUSSION:

This project is the construction of two single family homes, this is not a large trash generation facility, animal facility, plant nursery or for automotive related uses.

Site Design (SD) BMP Requirements:

How to comply: Projects shall comply with this requirement by using all of the site design BMPs listed in this section that are applicable and practicable to their project type and site conditions. Applicability of a given site design BMP shall be determined based on project type, soil conditions, presence of natural features (e.g. streams), and presence of site features (e.g. parking areas). Explanation shall be provided by the applicant when a certain site design BMP is considered to be not applicable or not practicable/feasible. Site plans shall show site design BMPs and provide adequate details necessary for effective implementation of site design BMPs. The "Site Design BMP Checklist for All Development Projects" located in Appendix I-5 shall be used to document compliance with site design BMP requirements.

SD-1: Maintain natural drainage pathways and hydrologic features
Maintain or restore natural storage reservoirs and drainage corridors (including topographic depressions, areas of permeable soils, natural swales, and ephemeral and intermittent streams)
Buffer zones for natural water bodies (where buffer zones are technically infeasible, require project applicant to include other buffers such as trees, access restrictions, etc.)
During the site assessment, natural drainages must be identified along with their connection to creeks and/or streams, if any. Natural drainages offer a benefit to storm water management as the soils and habitat already function as a natural filtering/infiltrating swale. When determining the development footprint of the site, altering natural drainages should be avoided. By providing a development envelope set back from natural drainages, the drainage can retain some water quality benefits to the watershed. In some situations, site constraints, regulations, economics, or other factors may not allow avoidance of drainages and sensitive areas. Projects proposing to dredge or fill materials in Waters of the U.S. must obtain Clean Water Act Section 401 Water Quality Certification. Projects proposing to dredge or fill waters of the State must obtain waste discharge requirements. Both the 401 Certification and the Waste Discharge Requirements are administered by the San Diego Water Board. The project applicant shall consult the local jurisdiction for other specific requirements.

Projects can incorporate SD-1 into a project by implementing the following planning and design phase techniques as applicable and practicable:

• Evaluate surface drainage and topography in considering selection of Site Design BMPs that will be most beneficial for a given project site. Where feasible, maintain topographic depressions for infiltration.
• Optimize the site layout and reduce the need for grading. Where possible, conform the site layout along natural landforms, avoid grading and disturbance of vegetation and soils, and replicate the site's natural drainage patterns. Integrating existing drainage patterns into the site plan will help maintain the site's predevelopment hydrologic function.

• Preserve existing drainage paths and depressions, where feasible and applicable, to help
• Structural BMPs cannot be located in buffer zones if a State and/or Federal resource agency (e.g. SDRWQCB, California Department of Fish and Wildlife; U.S. Army Corps of Engineers, etc.) prohibits maintenance or activity in the area.

DISCUSSION:

This project is the construction of two single family homes on a previously developed home site. The existing surface drainage and topography are maintained. The design of the new house conforms to the existing contours.

SD-2: Conserve natural areas, soils and vegetation

• Conserve natural areas within the project footprint including existing trees, other vegetation, and soils

To enhance a site's ability to support source control and reduce runoff, the conservation and restoration of natural areas must be considered in the site design process. By conserving or restoring the natural drainage features, natural processes are able to intercept storm water, thereby reducing the amount of runoff. The upper soil layers of a natural area contain organic material, soil biota, vegetation, and a configuration favorable for storing and slowly conveying storm water and establishing or restoring vegetation to stabilize the site after construction. The canopy of existing native trees and shrubs also provide a water conservation benefit by intercepting rain water before it hits the ground. By minimizing disturbances in these areas, natural processes are able to intercept storm water, providing a water quality benefit. By keeping the development concentrated to the least environmentally sensitive areas of the site and set back from natural areas, storm water runoff is reduced, water quality can be improved, environmental impacts can be decreased, and many of the site's most attractive native landscape features can be retained. In some situations, site constraints, regulations, economics, and/or other factors may not allow avoidance of all sensitive areas on a project site. Project applicant shall consult the local municipality for jurisdictional specific requirements for mitigation of removal of sensitive areas.

Projects can incorporate SD-2 by implementing the following planning and design phase techniques as applicable and practicable:

• Identify areas most suitable for development and areas that should be left undisturbed. Additionally, reduced disturbance can be accomplished by increasing building density and increasing height, if possible.
• Cluster development on least-sensitive portions of a site while leaving the remaining land in a natural undisturbed condition.
• Avoid areas with thick, undisturbed vegetation. Soils in these areas have a much higher capacity to store and infiltrate runoff than disturbed soils, and reestablishment of a mature vegetative community can take decades. Vegetative cover can also provide additional volume storage of rainfall by retaining water on the surfaces of leaves, branches, and trunks of trees during and after storm events.
• Preserve trees, especially native trees and shrubs, and identify locations for planting additional native or drought tolerant trees and large shrubs.
• In areas of disturbance, topsoil should be removed before construction and replaced after the project is completed. When handled carefully, such an approach limits the disturbance to native soils and reduces the need for additional (purchased) topsoil during later phases.
• Avoid sensitive areas, such as wetlands, biological open space areas, biological mitigation sites, streams, floodplains, or particular vegetation communities, such as coastal sage scrub and intact forest. Also, avoid areas that are habitat for sensitive plants and animals, particularly those, State or federally listed as endangered, threatened or rare. Development in these areas is often restricted by federal, state and local laws.

DISCUSSION:

This project is the construction of two single family homes on a previously developed home site. There is minimal natural area or vegetation remaining on the site due to the construction of the existing house. Sone of the existing vegetation will be preserved.

SD-3: Minimize impervious area

• Construct streets, sidewalks or parking lots aisles to the minimum widths necessary, provided public safety is not compromised

• Minimize the impervious footprint of the project

One of the principal causes of environmental impacts by development is the creation of impervious surfaces. Imperviousness links urban land development to degradation of aquatic ecosystems in two ways:

• First, the combination of paved surfaces and piped runoff efficiently collects urban pollutants and transports them, in suspended or dissolved form, to surface waters. These pollutants may originate as airborne dust, be washed from the atmosphere during rains, or may be generated by automobiles and outdoor work activities.

• Second, increased peak flows and runoff durations typically cause erosion of stream banks and beds, transport of fine sediments, and disruption of aquatic habitat. Measures taken to control stream erosion, such as hardening banks with riprap or concrete, may permanently eliminate habitat. Impervious cover can be minimized through identification of the smallest possible land area that can be practically impacted or disturbed during site development. Reducing impervious surfaces retains the permeability of the project site, allowing natural processes to filter and reduce sources of pollution.

Projects can incorporate SD-3 by implementing the following planning and design phase techniques as applicable and practicable:

• Decrease building footprint through (the design of compact and taller structures when allowed by local zoning and design standards and provided public safety is not compromised.
• Construct walkways, trails, patios, overflow parking lots, alleys and other low-traffic areas with permeable surfaces.
• Construct streets, sidewalks and parking lot aisles to the minimum widths necessary, provided that public safety and alternative transportation (e.g. pedestrians, bikes) are not compromised.
• Consider the implementation of shared parking lots and driveways where possible.
• Landscaped area in the center of a cul-de-sac can reduce impervious area depending on configuration. Design of a landscaped cul-de-sac must be coordinated with fire department personnel to accommodate turning radii and other operational needs.
• Design smaller parking lots with fewer stalls, smaller stalls, more efficient lanes.
• Design indoor or underground parking.
• Minimize the use of impervious surfaces in the landscape design.

DISCUSSION:

This project is the construction of two single family homes on a previously developed home site. The proposed project will increase the impervious area by 41.9% or 2,620 square feet, compared to the existing development. To minimize the impervious area of each lot, the housed will be two story.

SD-4: Minimize soil compaction

• Minimize soil compaction in landscaped areas

The upper soil layers contain organic material, soil biota, and a configuration favorable for storing and slowly conveying storm water down gradient. By protecting native soils and vegetation in appropriate areas during the clearing and grading phase of development the site can retain some of its existing beneficial hydrologic function. Soil compaction resulting from the movement of heavy construction equipment can reduce soil infiltration rates. It is important to recognize that areas adjacent to and under building foundations, roads and manufactured slopes must be compacted with minimum soil density requirements in compliance with local building and grading ordinances.

Projects can incorporate SD-4 by implementing the following planning and design phase techniques as applicable and practicable:

• Avoid disturbance in planned green space and proposed landscaped areas where feasible. These areas that are planned for retaining their beneficial hydrological function should be protected during the grading/construction phase so that vehicles and construction equipment do not intrude and inadvertently compact the area.
• In areas planned for landscaping where compaction could not be avoided, re-till the soil surface to allow for better infiltration capacity. Soil amendments are recommended and may be necessary to increase permeability and organic content. Soil stability, density requirements, and other geotechnical considerations associated with soil compaction must be reviewed by a qualified landscape architect or licensed geotechnical, civil or other professional engineer.

DISCUSSION:

The proposed irrigation and landscape design is done by a registered professional and will be submitted to the City of San Diego to comply with Municipal Code. It shall include flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines. Soil will be compacted to maximize the infiltration of storm water.

SD-5: Disperse impervious areas

Disconnect impervious surfaces through disturbed pervious areas

Design and construct landscaped or other pervious areas to effectively receive and infiltrate, retain and/or treat runoff from impervious areas prior to discharging to the MS4

Impervious area dispersion (dispersion) refers to the practice of essentially disconnecting impervious areas from directly draining to the storm drain system by routing runoff from impervious areas such as rooftops, walkways, and driveways onto the surface of adjacent pervious areas. The intent is to slow runoff discharges, and reduce volumes while achieving incidental treatment. Volume reduction from dispersion is dependent on the infiltration characteristics of the pervious area and the amount of impervious area draining to the pervious area. Treatment is achieved through filtration, shallow sedimentation, sorption, infiltration, evapotranspiration, biochemical processes and plant uptake.
The effects of imperviousness can be mitigated by disconnecting impervious areas from the drainage system and by encouraging detention and retention of runoff near the point where it is generated. Detention and retention of runoff reduces peak flows and volumes and allows pollutants to settle out or adhere to soils before they can be transported downstream. Disconnection practices may be applied in almost any location, but impervious surfaces must discharge into a suitable receiving area for the practices to be effective. Information gathered during the site assessment will help determine appropriate receiving areas.
Project designs should direct runoff from impervious areas to adjacent landscaping areas that have higher potential for infiltration and surface water storage. This will limit the amount of runoff generated, and therefore the size of the mitigation BMPs downstream. The design, including consideration of slopes and soils, must reflect a reasonable expectation that runoff will soak into the soil and produce no runoff of the DCV. On hillside sites,

drainage from upper areas may be collected in conventional catch basins and piped to landscaped areas that have higher potential for infiltration. Or use low retaining walls to create terraces that can accommodate BMPs. Projects can incorporate SD-5 by implementing the following planning and design phase techniques as applicable and practicable:

• Implement design criteria and considerations listed in impervious area dispersion fact sheet (SD-5) presented in Appendix E.
• Drain rooftops into adjacent landscape areas.
• Drain impervious parking lots, sidewalks, walkways, trails, and patios into adjacent landscape areas.
• Reduce or eliminate curb and gutters from roadway sections, thus allowing roadway runoff to drain to adjacent pervious areas.
• Replace curbs and gutters with roadside vegetated swales and direct runoff from the paved street or parking areas to adjacent LID facilities. Such an approach for alternative design can reduce the overall capital cost of the site development while improving the storm water quantity and quality issues and the site's aesthetics.
• Plan site layout and grading to allow for runoff from impervious surfaces to be directed into distributed permeable areas such as turf, landscaped or permeable recreational areas, medians, parking islands, planter boxes, etc.
• Detain and retain runoff throughout the site. On flatter sites, landscaped areas can be interspersed among the buildings and pavement areas. On hillside sites, drainage from upper areas may be collected in conventional catch basins and conveyed to landscaped areas in lower areas of the site.
• Pervious area that receives run on from impervious surfaces shall have a minimum width of 10 feet and a maximum slope of 5%.

DISCUSSION:

This project is the construction of two single family homes on a previously developed home site. The proposed project will increase the impervious area by 41.9% or 2,620 square feet, compared to the existing development.

SD-6: Collect runoff

• Use small collection strategies located at, or as close to as possible to the sources (i.e. the point where storm water initially meets the ground) to minimize the transport of runoff and pollutants to the MS4 and receiving waters

• Use permeable material for projects with low traffic areas and appropriate soil conditions

Distributed control of storm water runoff from the site can be accomplished by applying small collection techniques (e.g. green roofs), or integrated management practices, on small sub-catchments or on residential lots. Small collection techniques foster opportunities to maintain the natural hydrology provide a much greater range of control practices. Integration of storm water management into landscape design and natural features of the site, reduce site development and long-term maintenance costs, and provide redundancy if one technique fails. On flatter sites, it typically works best to intersperse landscaped areas and integrate small scale retention practices among the buildings and paving.

Permeable pavements contain small voids that allow water to pass through to a gravel base. They come in a variety of forms; they may be a modular paving system (concrete pavers, grass-pave, or gravel-pave) or poured in place pavement (porous concrete, permeable asphalt). Project applicants should identify locations where permeable pavements could be substituted for impervious concrete or asphalt paving. The O&M of the site must ensure that permeable pavements will not be sealed in the future. In areas where infiltration is not appropriate, permeable paving systems can be fitted with an under drain to allow filtration, storage, and evaporation, prior to drainage into the storm drain system.

Projects can incorporate SD-6 by implementing the following planning and design phase techniques as applicable and practicable:

• Implementing distributed small collection techniques to collect and retain runoff
• Installing permeable pavements (see SD-6B in Appendix E)

DISCUSSION:

This project is the construction of two single family homes on a previously developed home site. The small proposed site does not support bio-retentions or infiltration trenches. Landscaping will be used to treat the storm water before discharging it to the public street.

SD-7: Landscape with native or drought tolerant species

All development projects are required to select a landscape design and plant palette that minimizes required resources (irrigation, fertilizers and pesticides) and pollutants generated from landscape areas. Native plants require less fertilizers and pesticides because they are already adapted to the rainfall patterns and soils conditions. Plants should be selected to be drought tolerant and not require watering after establishment (2 to 3 years). Watering should only be required during prolonged dry periods after plants are established. Final selection of plant material needs to be made by a landscape architect experienced with LID techniques. Microclimates vary significantly throughout the region and consulting local municipal resources will help to select plant material suitable for a specific geographic location.

Projects can incorporate SD-7 by landscaping with native and drought tolerant species. Recommended plant list is included in Appendix E (Fact Sheet PL).

DISCUSSION:

This project will be landscaped with native and drought tolerant species.

SD-8: Harvest and use precipitation

Harvest and use BMPs capture and stores storm water runoff for later use. Harvest and use can be applied at smaller scales (Standard Projects) using rain barrels or at larger scales (PDPs) using cisterns. This harvest and use technique has been successful in reducing runoff discharged to the storm drain system conserving potable water and recharging groundwater.

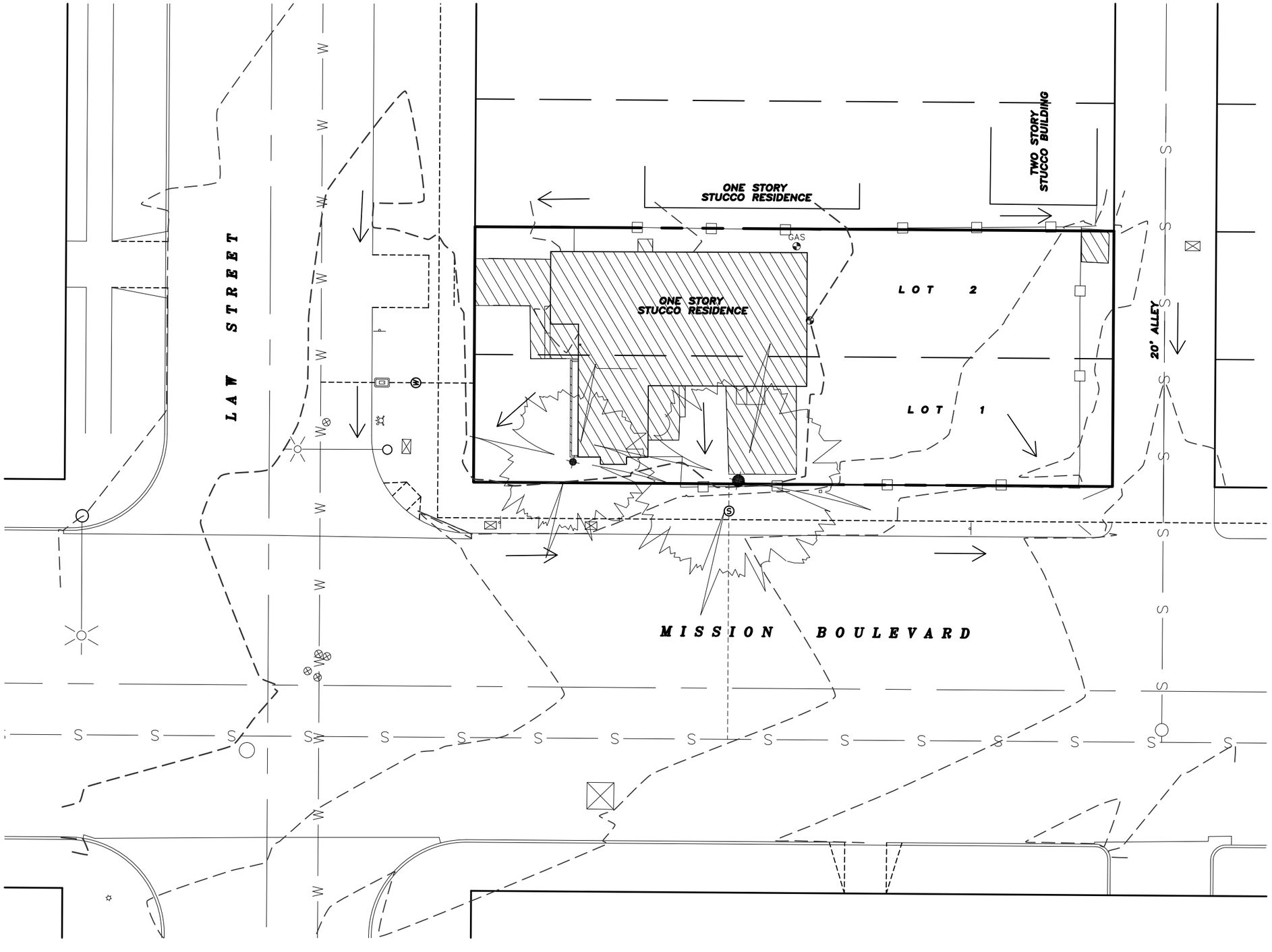
Rain barrels are above ground storage vessels that capture runoff from roof downspouts during rain events and detain that runoff for later reuse for irrigating landscaped areas. The temporary storage of roof runoff reduces the runoff volume from a property and may reduce the peak runoff velocity for small, frequently occurring storms. In addition, by reducing the amount of storm water runoff that flows overland into a storm water conveyance system (storm drain inlets and drain pipes), less pollutants are transported through the conveyance system into local creeks and the ocean. The reuse of the detained water for irrigation purposes leads to the conservation of potable water and the recharge of groundwater. SD-8 fact sheet in Appendix E provides additional detail for designing Harvest and Use BMPs. Projects can incorporate SD-8 by installing rain barrels or cisterns, as applicable.

DISCUSSION:

This project will not include harvesting of storm water. The site is to compact to efficiently use rail barrels for storm capture and use as irrigation water.

MICHAEL L. SMITH, RCE 35471

EXHIBIT "A"



N

SCALE
1" = 20'

LEGAL DESCRIPTION:

LOTS 1 AND 2 IN BLOCK 115 OF PACIFIC BEACH, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA ACCORDING TO MAP THEREOF NO. 932, FILED IN THE OFFICE OF THE RECORDER OF SAID SAN DIEGO COUNTY NOVEMBER 7, 1904.

BASIS OF ELEVATION:

NORTHEAST BRASS PLUG
MISSION BOULEVARD AND LAW STREET
ELEVATION = 61.122 M.S.L. N.G.V.D.
1929 FEET

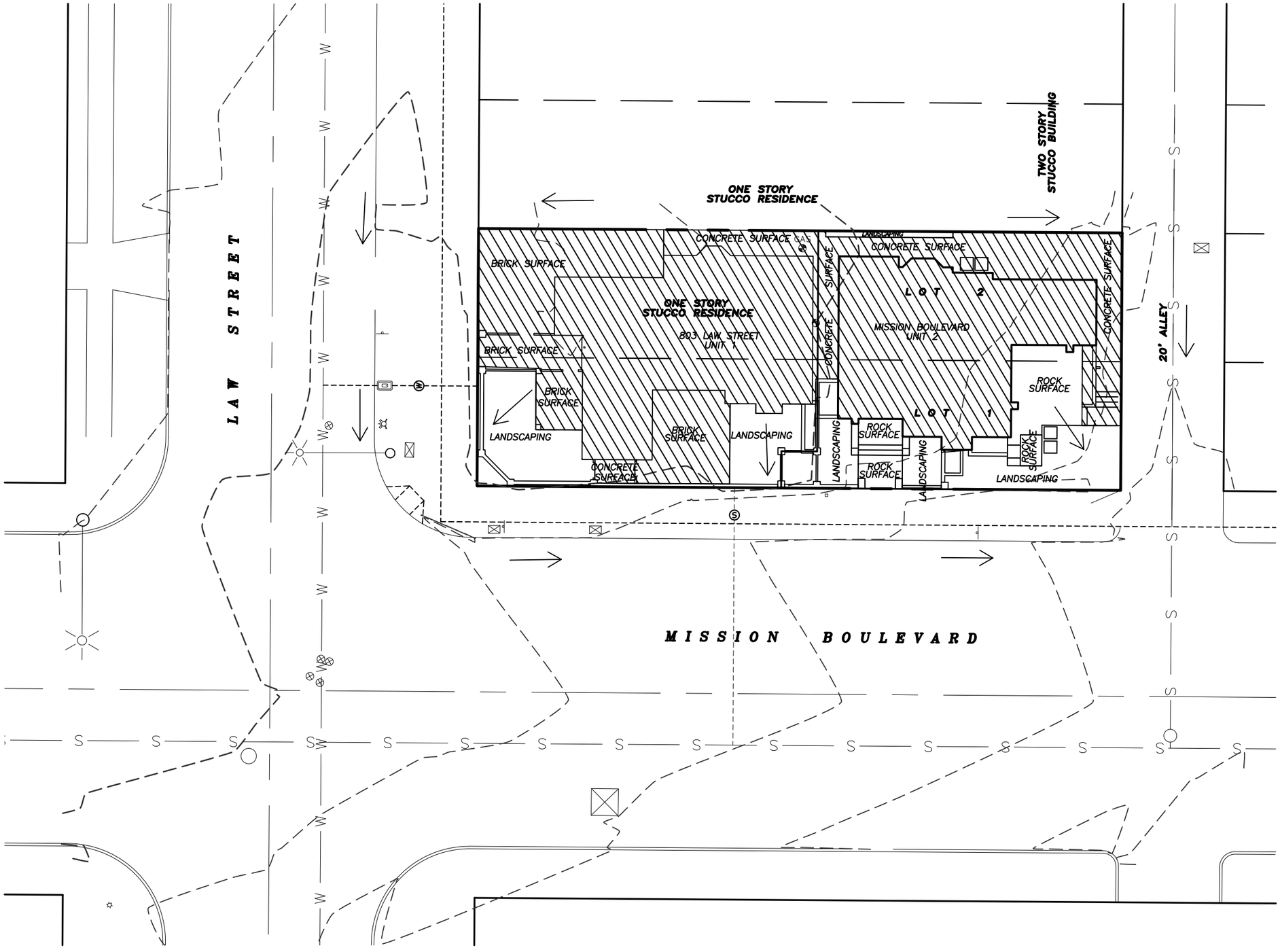
SITE AREA:

6252 SF. 0.1435 AC.

EXISTING IMPERVIOUS AREA:

2004 SF. 0.0460 AC. 32.1%

EXHIBIT "B"



SCALE

1" = 20'

LEGAL DESCRIPTION:

LOTS 1 AND 2 IN BLOCK 115 OF PACIFIC BEACH, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA ACCORDING TO MAP THEREOF NO. 932, FILED IN THE OFFICE OF THE RECORDER OF SAID SAN DIEGO COUNTY NOVEMBER 7, 1904.

BASIS OF ELEVATION:

NORTHEAST BRASS PLUG
MISSION BOULEVARD AND LAW STREET
ELEVATION = 61.122 M.S.L. N.G.V.D.
1929 FEET

SITE AREA:

6252 SF. 0.1435 AC.

PROPOSED IMPERVIOUS AREA:

4624 SF. 0.1062 AC. 74.0%

EAST COUNTY SOIL CONSULTATION
AND ENGINEERING, INC.
10925 HARTLEY ROAD, SUITE "I"
SANTEE, CALIFORNIA 92071
(619) 258-7901
Fax 258-7902

Mr. Kelly Michael Kramer
Steelbolt Properties, LLC
P.O. Box 9957
San Diego, California 92169

December 22, 2016
Project No. 16-1247H5(3)

Subject: Limited Geotechnical Investigation
Two Proposed Single-Family Residences
803 Law Street, Pacific Beach Area
City of San Diego, California 92109

Dear Mr. Kramer:

In accordance with your request, we have performed a limited geotechnical investigation at the subject site to discuss the geotechnical aspects of the project and provide recommendations for the proposed development.

Our investigation has found that the proposed building pads are underlain by topsoil and old alluvial deposits (Qoa) to a depth of approximately 3 feet below existing grade. Dense, old paralic deposits were underlying these soils to the explored depth of 11 feet. It is our opinion that the development of the proposed single-family residences is geotechnically feasible provided the recommendations herein are implemented in the design and construction.

Should you have any questions with regard to the contents of this report, please do not hesitate to contact our office.

Respectfully submitted,

Mamadou Saliou Diallo, P.E.
RCE 54071, GE 2704
MSD\md

TABLE OF CONTENTS

INTRODUCTION

This is to present the findings and conclusions of a limited geotechnical investigation for two proposed single-family residences to be located at 803 Law Street, in the Pacific Beach area of the City of San Diego, California.

The objectives of the investigation were to evaluate the existing soils conditions and provide recommendations for the proposed development.

SCOPE OF SERVICES

The following services were provided during this investigation:

- Site reconnaissance and review of published geologic, seismological and geotechnical reports and maps pertinent to the project area
- Subsurface exploration consisting of three (3) test pits within the limits of the proposed area of development. The test pits were logged by our Staff Geologist.
- Collection of representative soil samples at selected depths. The obtained samples were sealed in moisture-resistant containers and transported to the laboratory for subsequent analysis.
- Laboratory testing of samples representative of the types of soils encountered during the field investigation
- Geologic and engineering analysis of the field and laboratory data, which provided the basis for our conclusions and recommendations
- Production of this report, which summarizes the results of the above analysis and presents our findings and recommendations for the proposed development

SITE DESCRIPTION AND PROPOSED CONSTRUCTION

The subject site is a rectangular-shaped residential lot located at the southeast corner of Law Street and Mission Boulevard, in the Pacific Beach area of the City of San Diego, California. The property, which encompasses an area of approximately 6,250 square feet (125' x 50') is occupied by a one-story house. The site slopes gently to the south. Vegetation consisted of grass, shrub and a few trees. Site boundaries include Law Street to the north, Mission Boulevard to the west, an alley to the south and a residential property to the east.

The site plan prepared by EOS Architecture, Inc. of La Jolla, California indicates that the proposed construction will include two single-family residences following demolition of the existing structure. The new structures will be three-story and two-story over basement, masonry and wood-framed and founded on continuous and/ or spread footings with slab-on-grade floors.

FIELD INVESTIGATION AND LABORATORY TESTING

On December 15, 2016, three (3) test pits were excavated to a maximum depth of approximately 11.0 feet below existing grade with a Bobcat 331 mini-excavator equipped with an 18-inch bucket. The approximate locations of the test pits are shown on the attached Plate No. 1, entitled "Location of Exploratory Test Pits". A continuous log of the soils encountered was recorded at the time of excavation and is shown on Plate No. 2 entitled "Summary Sheet". The soils were visually and texturally classified according to the filed identification procedures set forth on Plate No. 3 entitled "USCS Soil Classification".

Following the field exploration, laboratory testing was performed to evaluate the pertinent engineering properties of the foundation materials. The laboratory-testing program included moisture and density, particle size analysis and expansion index tests. These tests were performed in general accordance with ASTM standards and other accepted methods. Page L-1 and Plate No. 2 provide a summary of the laboratory test results.

GEOLOGY

Geologic Setting

The subject site is located within the southern portion of what is known as the Peninsular Ranges Geomorphic Province of California. The geologic map pertaining to the area (Reference No. 3) indicates that the site is underlain by old paralic deposits (Qop_6) previously known as the Bay Point Formation (Qbp) in Reference No. 11.

Site Stratigraphy

The subsurface descriptions provided are interpreted from conditions exposed during the field investigation and/or inferred from the geologic literature. Detailed descriptions of the subsurface materials encountered during the field investigation are presented on the exploration logs provided on Plate No. 2. The following paragraphs provide general descriptions of the encountered soil types.

Topsoil

Topsoil is the surficial soil material that mantles the ground, usually containing roots and other organic materials, which supports vegetation. Topsoil was observed in the test pits with a thickness of approximately six (6) inches. It consisted of dark brown, silty sand that was dry, loose and porous in consistency with some organics (roots and rootlets).

Old Alluvial Deposits (Qoa)

Old alluvial deposits were encountered below the topsoil layer with a thickness of approximately 2 feet. They consisted of light brown, sandy silt with gravel that was dry and loose in consistency.

Old Paralic Deposits (Qop6)

Old paralic deposits were underlying the old alluvial deposits to the explored depth of 11 feet. The material generally consisted of dark reddish brown, silt and sand mixtures that were moist and medium dense to dense in consistency.

SEISMICITY

Regional Seismicity

Generally, Seismicity within California can be attributed to the regional tectonic movement taking place along the San Andreas Fault Zone, which includes the San Andreas Fault and most parallel and subparallel faults within the state. The portion of southern California where the subject site is located is considered seismically active. Seismic hazards are attributed to groundshaking from earthquake events along nearby or more distant Quaternary faults. The primary factors in evaluating the effect an earthquake has on a site are the magnitude of the event, the distance from the epicenter to the site and the near surface soil profile.

According to the Fault-Rupture Hazard Zones Act of 1994 (revised Alquist-Priolo Special Studies Zones Act), quaternary faults have been classified as "active" faults, which show apparent surface rupture during the last 11,000 years (i.e., Holocene time). "Potentially-active" faults are those faults with evidence of displacing Quaternary sediments between 11,000 to 1.6 million years old.

Seismic Analysis

Based on our evaluation, the closest known "active" fault is the Rose Canyon Fault located approximately 2.5 miles (4 kilometers) to the east. The Rose Canyon Fault is the design fault of the project due to the predicted credible fault magnitude and ground acceleration.

The Seismicity of the site was evaluated utilizing the 2008 National Hazard Maps from the USGS website and Seed and Idriss methods for active Quaternary faults within a 50-mile radius of the subject site. The site may be subjected to a Maximum Probable Earthquake of 6.9 Magnitude along the Rose Canyon Fault, with a corresponding Peak Ground Acceleration of 0.45g. The maximum Probable Earthquake is defined as the maximum earthquake that is considered likely to occur within a 100-year time period.

The effective ground acceleration at the site is associated with the part of significant ground motion, which contains repetitive strong-energy shaking, and which may produce structural deformation. As such, the effective or "free field" ground acceleration is referred to as the Repeatable High Ground Acceleration (RHGA). It has been determined by Ploessel and Slosson (1974) that the RHGA is approximately equal to 65 percent of the Peak Ground Acceleration for earthquakes occurring within 20 miles of a site. Based on the above, the calculated Credible RHGA at the site is 0.29g.

2013 CBC Seismic Design Criteria

A review of the active fault maps pertaining to the site indicates the location of the Rose Canyon Fault Zone approximately 4 km to the east. Ground shaking from this fault or one of the major active faults in the region is the most likely happening to affect the site. With respect to this hazard, the site is comparable to others in the general area. The proposed residential structures should be designed in accordance with seismic design requirements of the 2013 California Building Code or the Structural Engineers Association of California using the following seismic design parameters:

PARAMETER	VALUE	2013 CBC REFERENCE/ASCE7
Site Class	D	Table 20.3-1, Chapter 20, ASCE7
Mapped Spectral Acceleration For Short Periods, S_s	1.186g	Figure 1613.3.1(1)
Mapped Spectral Acceleration For a 1-Second Period, S_1	0.453g	Figure 1613.3.1(2)
Site Coefficient, F_a	1.025	Table 1613.3.3(1)
Site Coefficient, F_v	1.547	Table 1613.3.3(2)
Adjusted Max. Considered Earthquake Spectral Response Acceleration for Short Periods, S_{MS}	1.217g	Equation 16-37
Adjusted Max. Considered Earthquake Spectral Response Acceleration for 1-Second Period, S_{M1}	0.701g	Equation 16-38
5 Percent Damped Design Spectral Response Acceleration for Short Periods, S_{DS}	0.811g	Equation 16-39
5 Percent Damped Design Spectral Response Acceleration for 1-Second Period, S_{D1}	0.467g	Equation 16-40

Geologic Hazard Assessment

Ground Rupture

Ground rupture due to active faulting is not considered likely due to the absence of known fault traces within the vicinity of the project; however, this possibility cannot be completely ruled out. The unlikely hazard of ground rupture should not preclude consideration of "flexible" design for on-site utility lines and connections.

Liquefaction

Liquefaction involves the substantial loss of shear strength in saturated soils, usually sandy soils with a loose consistency when subjected to earthquake shaking. Based on the absence of shallow groundwater and consistency of the underlying old paralic deposits, it is our opinion that the potential for liquefaction is low.

Landsliding

There is no indication that landslides or unstable slope conditions exist on or adjacent to the project site. There are no obvious geologic hazards related to landsliding to the proposed development or adjacent properties.

Tsunamis and Seiches

The site is not subject to inundation by tsunamis due to its elevation. The site is also not subject to seiches (waves in confined bodies of water).

GEOTECHNICAL EVALUATION

Based on our field investigation and evaluation of the collected information, we conclude that the proposed development is feasible from a geotechnical standpoint provided the recommendations herein will be properly implemented during construction.

In order to provide a uniform support for the proposed three-story structure, overexcavation and recompaction of the structural portion of the building pad will be required. The foundations may consist of reinforced continuous and/ or spread footings with conventional reinforced slabs. Recommendations and criteria for foundation design are provided in the Foundations and Slabs recommendations section of this report. The proposed two-story over basement will be founded into dense old paralic deposits; therefore no remedial grading will be required for this building pad.

Compressible Soils

Our field observations and testing indicate low compressibility within the dense, old paralic deposits, which underlie the site. However, loose topsoil and alluvial deposits were encountered to a maximum depth of approximately 3 feet below surface grades. These soils are compressible. Due to the potential for soil compression upon loading, remedial grading of these soils, including overexcavation and recompaction will be required for the three-story residence on the northern portion of the site.

Following implementation of the earthwork recommendations presented herein, the potential for soil compression resulting from the new development has been estimated to be low. The low-settlement assessment assumes a well-planned and maintained site drainage system. Recommendations regarding mitigation by earthwork construction are presented in the Grading and Earthwork recommendations section of this report.

Expansive Soils

An expansion index test was performed on a representative sample of the old paralic deposits to determine volumetric change characteristics with change in moisture content. An expansion index of 25 was obtained which indicates a low expansion potential for the foundation soils.

Groundwater

Static groundwater was not encountered to the depth of the test pits. The building pads are located at an elevation over 57 feet above Mean Sea Level. We do not expect groundwater to affect the proposed construction. Recommendations to prevent or mitigate the effects of poor surface drainage are presented in the Drainage section of this report.

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are based upon the analysis of the data and information obtained from our soil investigation. This includes site reconnaissance; field investigation; laboratory testing and our general knowledge of the soils native to the site. The site is suitable for the proposed residential development provided the recommendations set forth are implemented during construction.

GRADING AND EARTHWORK

The following grading and earthwork recommendations are based upon the limited geotechnical investigation performed and should be verified during construction by our field representative.

Clearing and Grubbing

The area to be graded or to receive fill and/or structures should be cleared of vegetation and concrete waste from the demolition of the existing structures. Vegetation and the debris from the clearing operation should be properly disposed of off-site. The area should be thoroughly inspected for any possible buried objects, which need to be rerouted or removed prior to the inception of, or during grading. All holes, trenches, or pockets left by the removal of these objects should be properly backfilled with compacted fill materials as recommended in the Method and Criteria of Compaction section of this report.

Structural Improvement of Soils

Information obtained from our field and laboratory analysis indicates that loose topsoil and alluvium cover the building pads to a depth of approximately 3 feet below existing grade. These surficial soils are susceptible to settlement upon loading. Based upon the soil characteristics, we recommend the following:

- Subgrade soils to a minimum depth of 3 feet below existing grade should be removed from the area of the proposed three-story structure. The bottom of the removal area should expose competent materials as approved by an ECSC&E geotechnical representative. Prior to the placement of new fill, the bottom of the removal area should be scarified a minimum depth of 6 inches, moisture-conditioned within 2 percent above the optimum moisture content, and then recompacted to at least 90 percent relative compaction (ASTM D1557 test method). The limit of the required area of overexcavation should be extended a minimum of 5 feet laterally beyond the perimeter footing (building footprint).

- Soils utilized as fill should be moisture-conditioned and recompacted in conformance with the following Method and Criteria of Compaction section of this report. The actual depth and extent of any overexcavation and recompaction should be evaluated in the field by a representative of ECSC&E.

Transitions Between Cut and Fill

The proposed structures are anticipated to be founded entirely in properly compacted fill or dense, old paralic deposits. Cut to fill transitions below the proposed structures should be completely eliminated during the earthwork construction as required in the previous section.

Method and Criteria of Compaction

Compacted fills should consist of approved soil material, free of trash debris, roots, vegetation or other deleterious materials. Fill soils should be compacted by suitable compaction equipment in uniform loose lifts of 6 to 8 inches. Unless otherwise specified, all soils subjected to recompaction should be moisture-conditioned within 2 percent over the optimum moisture content and compacted to at least 90 percent relative compaction per ASTM test method D1557.

On-site soils, after being processed to delete the aforementioned deleterious materials, may be used for recompaction purposes. Should any importation of fill be planned, the intended import source(s) should be evaluated and approved by ECSCE prior to delivery to the site. Care should be taken to ensure that these soils are not detrimentally expansive.

Erosion Control

Due to the granular characteristics of on-site soils, areas of exposed ground may be subject to erosion. During construction, surface water should be controlled via berms, gravel/ sandbags, silt fences, straw wattles, siltation or bioretention basins, positive surface grades or other method to avoid damage to the finish work or adjoining properties. All site entrances and exits must have coarse gravel or steel shaker plates to minimize offsite sediment tracking. Best Management Practices (BMPs) must be used to protect storm drains and minimize pollution. The contractor should take measures to prevent erosion of graded areas until such time as permanent drainage and erosion control measures have been installed. After completion of grading, all excavated surfaces should exhibit positive drainage and eliminate areas where water might pond.

Standard Grading Guidelines

Grading and earthwork should be conducted in accordance with the standard-of-practice methods for this local, the guidelines of the current edition of the California Building Code, and the requirements of the jurisdictional agency. Where the information provided in the geotechnical report differs from the Standard Grading Guidelines, the requirements outlined in the report shall govern.

FOUNDATIONS AND SLABS

a. Continuous and spread footings are suitable for use and should extend to a minimum depth of 24 inches below the lowest adjacent grade for the proposed three-story and two-story over basement structures into properly compacted fill soils. Continuous footings should be at least 18 inches in width and reinforced with a minimum of four #4 steel bars; two bars placed near the top of the footings and the other two bars placed near the bottom of the footings. Isolated or spread footings

should have a minimum width of 24 inches. Their reinforcement should consist of a minimum of #4 bars spaced 12 inches on center (each way) and placed horizontally near the bottom. The minimum reinforcement recommended is based on soil characteristics and is not intended to supersede the structural engineer requirements.

b. Interior concrete floor slabs should be a minimum 5 inches thick. Reinforcement should consist of #3 bars placed at 16 inches on center each way within the middle third of the slabs by supporting the steel on chairs or concrete blocks "dobies". The slabs should be underlain by 2 inches of clean sand over a 10-mil visqueen moisture barrier. The effect of concrete shrinkage will result in cracks in virtually all-concrete slabs. To reduce the extent of shrinkage, the concrete should be placed at a maximum of 4-inch slump. The minimum steel recommended is not intended to prevent shrinkage cracks.

c. Where moisture sensitive floor coverings are anticipated over the slabs, the 10-mil plastic moisture barrier should be underlain by a capillary break at least 2 inches thick, consisting of coarse sand, gravel or crushed rock not exceeding 3/4 inch in size with no more than 5 percent passing the #200 sieve.

d. An allowable soil bearing value of 2,000 pounds per square foot may be used for the design of continuous and spread footings at least 12 inches wide and founded a minimum of 12 inches into properly compacted fill soils or dense, old paralic deposits as set forth in the 2013 California Building Code, Table 1806.2. This value may be increased by 400 psf for each additional foot of depth or width to a maximum value of 4,000 lb/ft2.

e. Lateral resistance to horizontal movement may be provided by the soil passive pressure and the friction of concrete to soil. An allowable passive pressure of 300 pounds per square foot per foot of depth may be used. A coefficient of friction of 0.35 is recommended. The soils passive pressure as well as the bearing value may be increased by 1/3 for wind and seismic loading.

SETTLEMENT

Settlement of compacted fill soils is normal and should be anticipated. Because of the type and minor thickness of the fill soils anticipated under the proposed footings, the total and differential settlement should be within tolerable limits.

PRESATURATION OF SLAB SUBGRADE

Due to the granular characteristics of subgrade soils, presoaking of subgrade prior to concrete pour is not required. However, subgrade soils in areas receiving concrete should be watered prior to concrete placement to mitigate any drying shrinkage, which may occur following site preparation and foundation excavation.

RETAINING WALLS

Cantilevered retaining walls should be designed for an "active" lateral earth pressure of 35 psf/ft (35 pcf EFP) for approved granular backfill and level backfill conditions. Cantilever walls subject to uniform surcharge loads should be designed for an additional uniform lateral pressure equal to one-third (1/3) the anticipated surcharge pressure.

Restrained walls such as basement walls should be designed utilizing an "at-rest" earth pressure of 58 psf/ft (58 pcf EFP) for approved granular and level backfill. Restrained walls subject to uniform surcharge loads should be designed for an additional uniform lateral pressure equal to one-half (1/2) the anticipated surcharge.

For earthquake motions, additional lateral pressures of 26 and 39 pcf (EFP) may be applied for non restrained and restrained conditions respectively using an inverted triangular distribution if required.

Soil design criteria, such as bearing capacity, passive earth pressure and sliding resistance as recommended under the Foundation and Slab recommendations section, may be incorporated into the retaining wall design.

Footings should be reinforced as recommended by the structural engineer and appropriate back drainage provided to avoid excessive hydrostatic wall pressures. As a minimum we recommend a fabric-wrapped crushed rock and perforated pipe system. At least 2 cubic feet per linear foot of free-drainage crushed rock should be provided.

The remaining wall backfill should consist of approved granular material. This fill material should be compacted to a minimum relative compaction of 90 percent as determined by ASTM D-1557 test method. Flooding or jetting of backfill should not be permitted. Granular backfill should be capped with 18 inches (minimum) of relatively impervious fill to seal the backfill and prevent saturation. It should be noted that the use of heavy compaction equipment in close proximity to retaining structures can result in wall pressures exceeding design values and corresponding wall movement greater than that associated with active or at-rest conditions. In this regard, the contractor should take appropriate precautions during the backfill placement.

TEMPORARY SLOPES

For the excavation of foundations and utility trenches, temporary vertical cuts to a maximum height of 4 feet may be constructed in compacted fill or natural soil. Any temporary cuts beyond the above height constraints should be shored or further laid back following a 1:1 (horizontal to vertical) slope ratio. OSHA guidelines for trench excavation safety should be implemented during construction.

TRENCH BACKFILL

Excavations for utility lines, which extend under structural areas should be properly backfilled and compacted. Utilities should be bedded and backfilled with clean sand or approved granular soil to a depth of at least one foot over the pipe. This backfill should be uniformly watered and compacted to a firm condition for pipe support. The remainder of the backfill should be on-site

soils or non-expansive imported soils, which should be placed in thin lifts, moisture-conditioned and compacted to at least 90% relative compaction.

DRAINAGE

Adequate measures should be undertaken to finish grade the site after the structures and other improvements are in place, such that the drainage water within the site and adjacent properties is directed away from the foundations, footings, floor slabs and the tops of slopes via rain gutters, downspouts, surface swales and subsurface drains towards the natural drainage for this area. In accordance with the 2013 California Building Code, a minimum gradient of 2 percent is recommended in hardscape areas adjacent to structures. In earth areas, a minimum gradient of 5 percent away from the structures for a distance of at least 10 feet should be provided. If this requirement cannot be met due to site limitations, drainage can be done through a swale in accordance with Section 1804.3 of the 2013 California Building Code. Earth swales should have a minimum gradient of 2 percent. Drainage should be directed to approved drainage facilities. Proper surface and subsurface drainage will be required to minimize the potential of water seeking the level of the bearing soils under the foundations, footings and floor slabs, which may otherwise result in undermining and differential settlement of the structures and other improvements.

FOUNDATION PLAN REVIEW

Our firm should review the foundation plans and details during the design phase to assure conformance with the intent of this report. During construction, foundation excavations should be observed by our representative prior to the placement of forms, reinforcement or concrete for conformance with the plans and specifications.

LIMITATIONS OF INVESTIGATION

Our investigation was performed using the skill and degree of care ordinarily exercised, under similar circumstances, by reputable soils engineers and geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report. This report is prepared for the sole use of our client and may not be assigned to others without the written consent of the client and ECSC&E, Inc.

The samples collected and used for testing, and the observations made, are believed representative of site conditions; however, soil and geologic conditions can vary significantly between exploration trenches, boreholes and surface exposures. As in most major projects, conditions revealed by construction excavations may vary with preliminary findings. If this occurs, the changed conditions must be evaluated by a representative of ECSC&E and designs adjusted as required or alternate designs recommended.

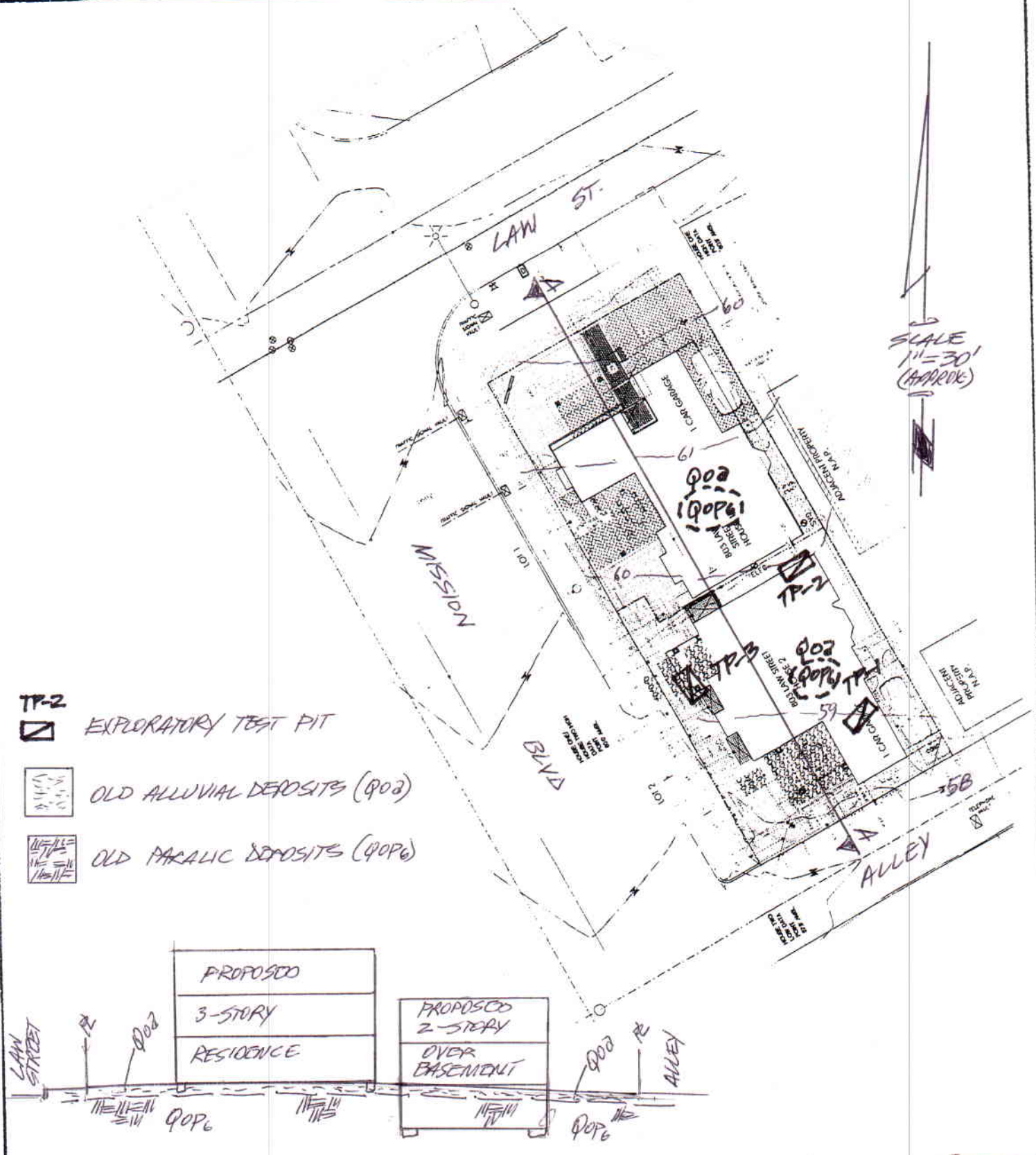
This report is issued with the understanding that it is the responsibility of the owner, or of his representative to ensure that the information and recommendations contained herein are brought to the attention of the project architect and engineer. Appropriate recommendations should be incorporated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

The findings of this report are valid as of this present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside of our control. Therefore, this report is subject to review and should be updated after a period of two years.

ADDITIONAL SERVICES

The review of plans and specifications, field observations and testing under our direction are integral parts of the recommendations made in this report. If East County Soil Consultation and Engineering, Inc. is not retained for these services, the client agrees to assume our responsibility for any potential claims that may arise during construction. Observation and testing are additional services, which are provided by our firm, and should be budgeted within the cost of development.

Plates No. 1 through 3, Page L-1 and References are parts of this report.



EAST COUNTY SOIL CONSULTATION
& ENGINEERING, INC.
10925 HARTLEY RD., SUITE I, SANTEE, CA 92071
(619) 258-7901 Fax (619) 258-7902

STEELBOLT PROPERTIES / 603 LAW STREET PROJECT

GEOLOGIC / GEOTECHNICAL MAP

BY MD

DATE DEC 22 2016

PROJECT NO. 16-124HS(3)

PLATE NO. 1

PLATE NO. 2
SUMMARY SHEET
TEST PIT NO. 1

DEPTH	SOIL DESCRIPTION	Y	M
Surface	**TOPSOIL** dark brown, dry, loose, porous, silty sand with rootlets		
0.5'	**OLD ALLUVIAL DEPOSITS** (Qoa) light brown, dry, loose, sandy silt		
1.0'	" " " " "	94.6	2.2
2.0'	" " " " "	95.6	2.0
2.5'	**OLD PARALIC DEPOSITS** (Qop_6) dark reddish brown, moist, medium dense, sandy silt		
3.0'	" " " " "	113.9	7.4
3.5'	reddish brown, moist, dense, sandy silt		
6.0'	tan brown, moist, medium dense to dense, sandy silt	103.2	15.3
7.0'	" " " " "	106.9	14.4
8.0'	brown, moist, medium dense to dense, sandy silt		
9.0'	" " " " "	109.2	13.8
10.0'	" " " " "	108.9	15.4
11.0'	bottom of test pit, no caving, no groundwater test pit backfilled 12/15/16		

TEST PIT NO. 2

DEPTH	SOIL DESCRIPTION	Y	M
Surface	**TOPSOIL** dark brown, dry, loose, porous, silty sand with rootlets		
0.5'	**OLD ALLUVIAL DEPOSITS** (Qoa) light brown, dry, loose, sandy silt with gravel		
2.5'	**OLD PARALIC DEPOSITS** (Qop_6) dark reddish brown, moist, medium dense, sandy silt		
3.5'	reddish brown, moist, dense, sandy silt		
5.0'	bottom of test pit, no caving, no groundwater test pit backfilled 12/15/16		

TEST PIT NO. 3

DEPTH	SOIL DESCRIPTION	Y	M
Surface	**TOPSOIL** dark brown, dry, loose, porous, silty sand with rootlets		
0.5'	**OLD ALLUVIAL DEPOSITS** (Qoa) light brown, dry, loose, sandy silt with gravel		
2.5'	**OLD PARALIC DEPOSITS** (Qop_6) dark reddish brown, moist, medium dense, sandy silt		
3.5'	reddish brown, moist, dense, sandy silt		
6.0'	tan brown, moist, medium dense to dense, sandy silt		
7.0'	bottom of test pit, no caving, no groundwater test pit backfilled 12/15/16		

Y = DRY DENSITY IN PCF M = MOISTURE CONTENT IN %

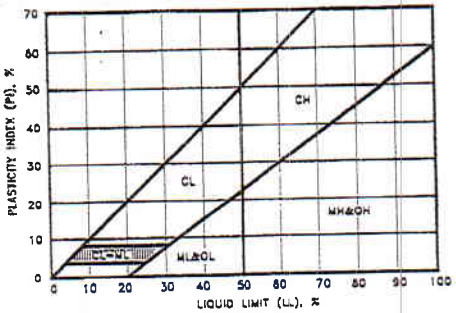
SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES		SM	SILTY SANDS, SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

CLASSIFICATION	RANGE OF GRAIN SIZES	
	U.S. STANDARD SIEVE SIZE	GRAIN SIZE IN MILLIMETERS
BOULDERS	Above 12 Inches	Above 305
COBBLES	12 Inches To 3 Inches	305 To 76.2
GRAVEL	3 Inches to No. 4	76.2 to 4.76
Coarse	3 Inches to ¾ Inch	76.2 to 19.1
Fine	¾ Inch to No. 4	19.1 to 4.76
SAND	No. 4 to No. 200	4.76 to 0.074
Coarse	No. 4 to No. 10	4.76 to 2.00
Medium	No. 10 to No. 40	2.00 to 0.420
Fine	No. 40 to No. 200	0.420 to 0.074
SILT AND CLAY	Below No. 200	Below 0.074

GRAIN SIZE CHART



PLASTICITY CHART

EAST COUNTY SOIL CONSULTATION & ENGINEERING, INC.
10925 HARTLEY RD., SUITE I, SANTEE, CA 92071
(619) 258-7901 Fax (619) 258-7902

STEELBOLT PROPERTIES / 603 LAWI STREET PROJECT

SOIL CLASSIFICATION CHART

BY: MD

DATE DEC 22 2016

PROJECT NO 16-124745(3)

PLATE NO 3

PAGE L-1
LABORATORY TEST RESULTS

EXPANSION INDEX TEST (ASTM D4829)

INITIAL MOISTURE CONTENT(%)	SATURATED MOISTURE CONTENT(%)	INITIAL DRY DENSITY (PCF)	EXPANSION INDEX	LOCATION
10.9	25.5	105.6	25	TP-1 @ 10.0'

PARTICLE SIZE ANALYSIS (ASTM D422)

U.S. Standard Sieve Size	Percent Passing TP-1 @ 2.0' Old Alluvial Deposits	Percent Passing TP-1 @ 3.0' Old Paralic Deposits	Percent Passing TP-1 @ 10.0' Old Paralic Deposits
2"	-	-	-
1"	-	-	-
1/2"	-	-	-
3/8"	-	100	-
#4	-	99	-
#8	100	97	100
#16	99	94	99
#30	97	85	94
#50	83	69	82
#100	64	55	68
#200	51	46	59
USCS	**ML**	**SM**	**MH**

REFERENCES

1. "Limited Geotechnical Investigation, Two Proposed Single-Family Residences, 867 Wilbur Avenue, Pacific Beach Area, City of San Diego, California 92109", Project No. 16-1247H5, Prepared by East County Soil Consultation and Engineering, Inc., Dated October 3, 2016.

2. "2013 California Building Code, California Code of Regulations, Title 24, Part 2, Volume 2 of 2", Published by International Code Council.

3. "Geologic Map of the San Diego 30' x 60' Quadrangle, California", by Michael P. Kennedy and Siang S. Tan, 2008.

4. "Geotechnical and Foundation Engineering: Design and Construction", by Robert W. Day, 1999.

5. "1997 Uniform Building Code, Volume 2, Structural Engineering Design Provisions", Published by International Conference of Building Officials

6. "Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada to be used with the 1997 Uniform Building Code", Published by International Conference of Building Officials.

7. "Bearing Capacity of Soils, Technical Engineering and Design Guides as Adapted from the US Army Corps of Engineers, No. 7", Published by ASCE Press, 1994.

8. "Foundations and Earth Structures, Design Manual 7.2", by Department of Navy Naval Facilities Engineering Command, May 1982, Revalidated by Change 1 September 1986.

9. "City of San Diego Seismic Safety Study, Geotechnical Land-Use Capability Map, Geologic Hazards Map, Fault Location Map", Updated by Leighton & Associates, Dated June 1983.

10. "Ground Motions and Soil Liquefaction during Earthquakes", by H.B. Seed and I.M. Idriss, 1982.

11. "Geology of the San Diego Metropolitan Area, California", Bulletin 200, California Division of Mines and Geology, by Michael P. Kennedy, 1975.

EAST COUNTY SOIL CONSULTATION
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Mr. Kelly Michael Kramer
Steelbolt Properties, LLC
P.O. Box 9957
San Diego, California 92169

May 2, 2017
Project No. 16-1247H5(3)

Subject: Response to City of San Diego Cycle 2 Issues
Two Proposed Single-Family Residences
803 Law Street, Pacific Beach Area
City of San Diego, California 92109

References: 1. "Limited Geotechnical Investigation, Two Proposed Single-Family Residences, 803 Law Street, Pacific Beach Area, City of San Diego, California 92109", Project No. 16-1247H5(3), Prepared by East County Soil Consultation and Engineering, Inc., Dated December 22, 2016.

2. "Development Plans for Kramer Small Lot Sub Division, 803 Law Street, San Diego, CA 92109, prepared by EOS Architecture, Inc., dated December 19, 2016 (their project no. 16-05; Tentative Parcel Map prepared by San Diego Land Surveying & Engineering, Inc., dated December 15, 2016.

Dear Mr. Kramer:

In accordance with your request, we have prepared this report in response to the City of San Diego Cycle 2 Issues for the proposed residential project at the subject site.

Issues No. 3 through No. 4

Please find attached an updated geologic/ geotechnical map with an additional east-west cross-section and currently proposed construction, including the proposed basement excavation and temporary slopes. The cross-section is scaled and extends beyond the property lines to show the adjacent structures.

Issue No. 5

Our review of the referenced geotechnical report (Reference No. 1) indicates that the proposed structures will be founded into properly compacted fill soils and dense, old paralic deposits. As a result, we do not anticipate soil conditions that would lead to structural defects.

Issue No. 6

Due to the anticipated setback of more than 10 feet to the adjacent structures and the City right-of-way, and the recommended 1H: 1V slope ratio for temporary slopes greater than 4 feet, it is our opinion that the proposed development will not result in settlement of the adjacent property or the City right-of-way.

Issue No. 7

The subject site is suitable for its intended use provided the recommendations contained in the referenced geotechnical report are implemented in the design and construction of the proposed single-family residences.

If we can be of further assistance, please do not hesitate to contact our office.

Respectfully submitted,

Mamadou Saliou Diallo, P.E.
RCE 54071, GE 2704
MSD\md

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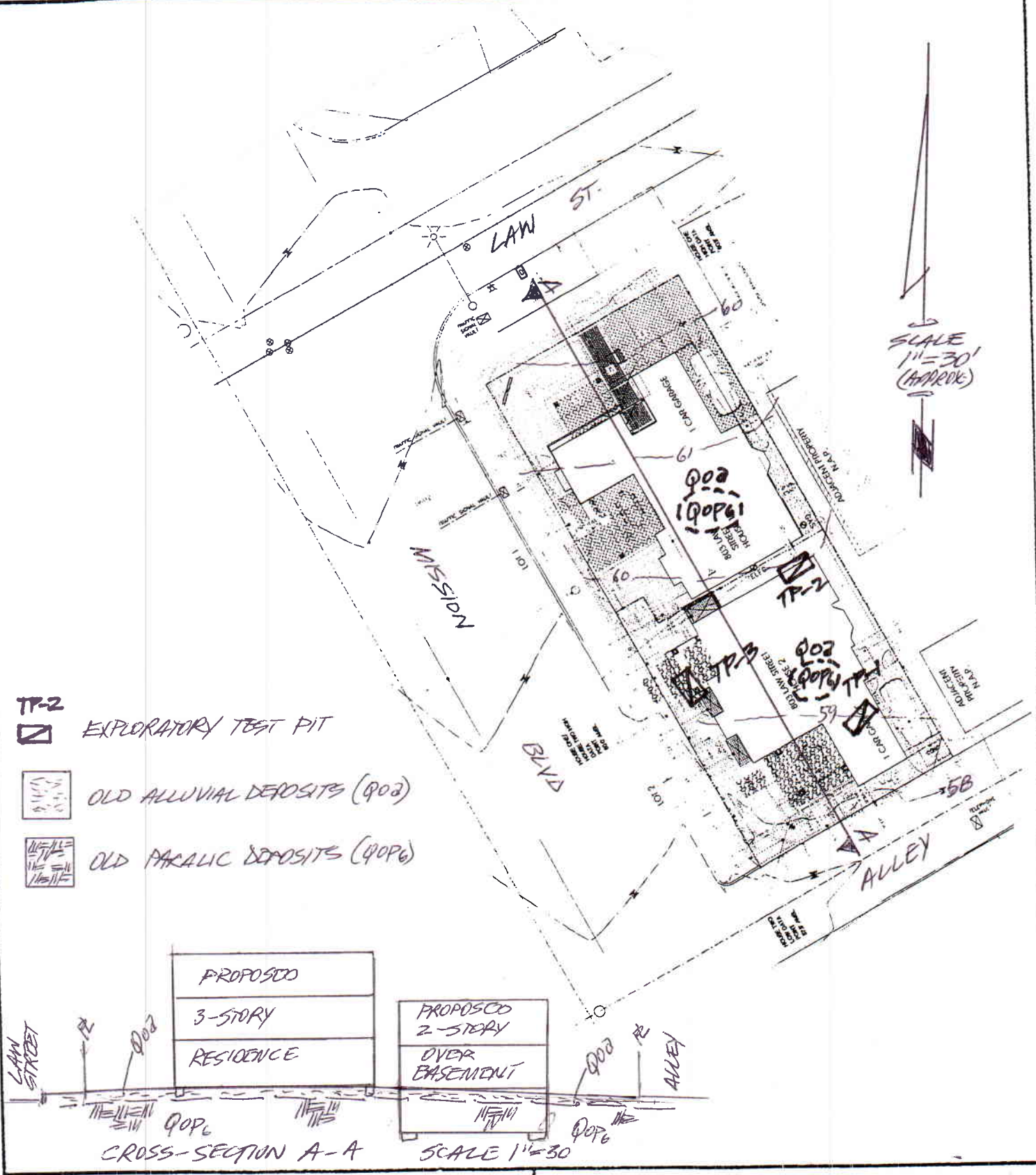

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STEELBOLT PROPERTIES / 603 LAW STREET PROJECT

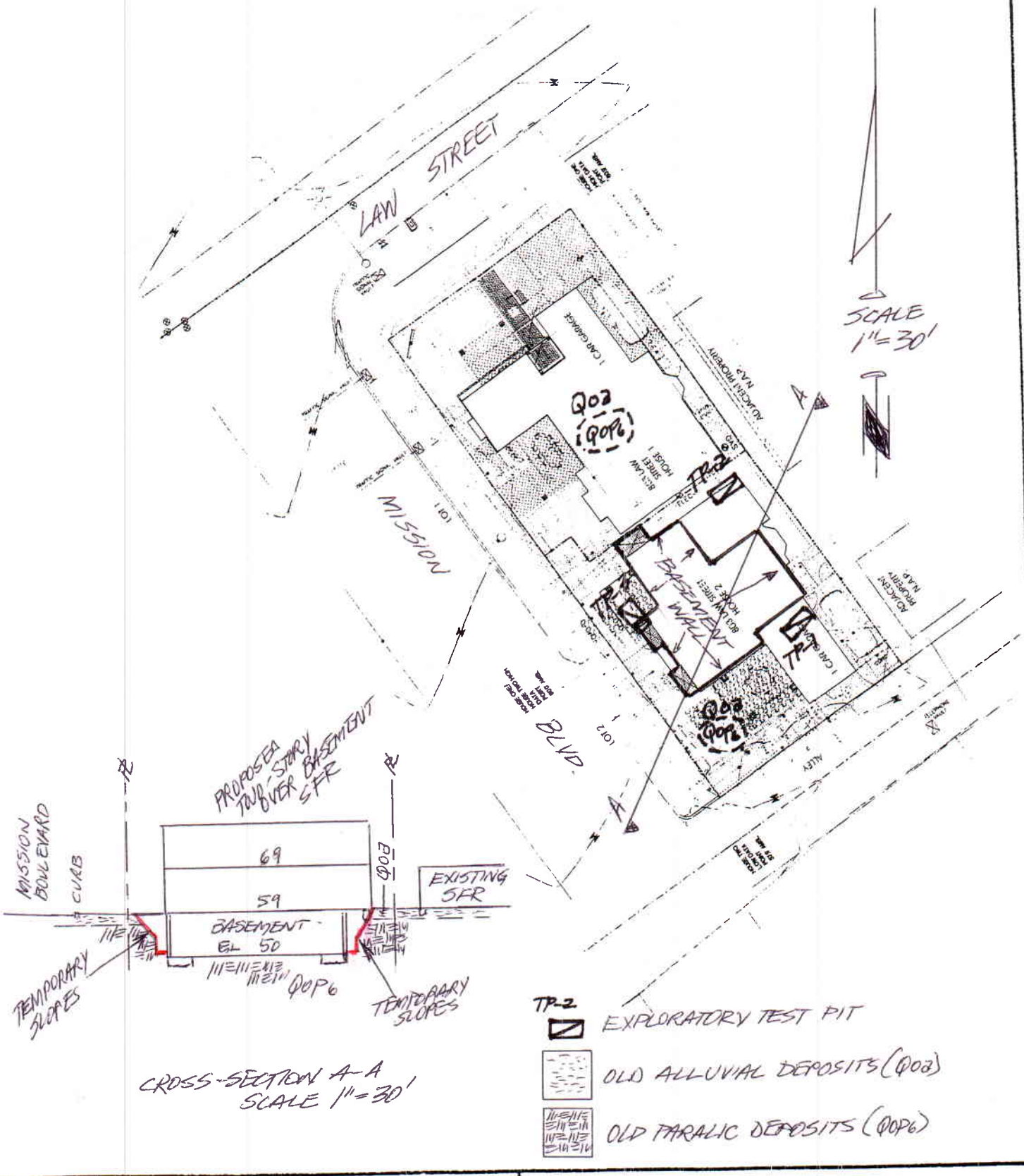
GEOLOGIC / GEOTECHNICAL MAP

EI NO

DATE DEC 22 2016

PROJECT NO. 16-124745(3)

PLATE NO. 1



EAST COUNTY SOIL CONSULTATION & ENGINEERING, INC. 10925 HARTLEY RD., SUITE I, SANTEE, CA 92071 (619) 258-7901 Fax (619) 258-7902	STEELBOLT PROPERTIES / 803 LAWI STREET PROJECT
GEOLOGIC / GEOTECHNICAL MAP II	BY MD DATE MAY 2 2017 PROJECT NO. 16-1247H5(3) PLATE NO. 2