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TITLE 24 ACOUSTICAL EVALUATION EXTERIOR SOUND INSULATION and VIBRATION EVALUATION

Filbert Townhomes
Newark, California

August 29, 2016

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WI Project 16-066

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Executive Summary

This report presents an acoustical analysis for the Filbert Townhomes residential project in Newark, California. This analysis of the Project determines the expected exterior and interior noise exposure attributable to exterior noise sources, and recommends design measures to comply with the exterior and interior noise insulation requirements of the California Code of Regulations (CCR) Title 24 Noise Insulation Standards/California Building Code and the of the City of Newark. This report does not review interdwelling sound isolation.

The acoustical evaluation of the proposed building construction is based on information provided by the Project developer regarding building exterior shell design and site layout, as shown on in-progress drawings dated June 14 2016. A glossary of acoustical terms is enclosed at the end of this report for your reference.

The results of our analysis of the current noise environment and the proposed Project layout resulted in the following conclusions and recommendations regarding the proposed building design:

Exterior Noise Exposure

The general vicinity of the project site has industrial and residential land use. The existing noise environment is dominated by vehicular traffic and rail noise from the tracks on Sycamore. The Project is currently exposed to noise levels of up to 77 Ldn. The existing noise environment is not expected to change substantially with the addition of the Project. An annual increase of 3% activity for traffic over the next 10 years (assuming the same distribution of activity over a 24-hour period) would increase the noise by 1 dBA by the year 2026.

Note that the rail tracks at the project site appear to be spur tracks that feed off the Niles Subdivision. Any future plans that require more frequent freight or even commuter trains operated on these tracks at speeds over 25 to 40 mph would potentially be incompatible with the residential land use proposed at the project site.

Interior Noise Exposure

Based on the estimated future noise environment, it will be possible to provide exterior shell elements suitable to provide an interior noise environment of 45 Ldn from exterior noise sources, in compliance with the California Noise Insulation Standards and the City of Newark General Plan. More details are provided in the report.

Rail Vibration

The existing train vibration at the site is well within the FTA criteria. The rail tracks at the project site appear to be spur tracks that feed off the Niles Subdivision. Future trains operated on the rail spur at speeds over 25 to 40 mph could exceed the 75 VdB criterion for occasional events, or they could exceed the 80 VdB criterion for infrequent events above 50 mph. It seems unlikely that schedule and speed changes of these magnitudes would occur in the foreseeable future; however, such expectations should be confirmed. More details are provided in the report.

1 APPLICABLE NOISE STANDARDS

1.1 Insulation from Exterior Noise Sources

The State of California Noise Insulation Standards (California Building Standards Code Section 1207/California Code of Regulations, Title 24, Part 2), provides sound insulation requirements which apply to construction of new multi-family dwellings, or other buildings, other than detached single-family dwellings, where noise could affect persons within the building, including interference with speech and sleep. This requirement applies to the proposed Project.

CCR Title 24 requires that an affected building be oriented, shielded, and designed to have sound insulation such that, with all exterior doors and windows in the closed position, the interior noise exposure level attributable to exterior sources will not exceed 45 dBA Day Night Level (Ldn) in any habitable room.

This State standard requires an acoustical analysis for any new multi-family residential structures to be located in an area where the annual exterior Ldn exceeds 60 dBA. The report for this analysis is required to show the predicted noise exposure levels at the exterior of the proposed structures based on present and future land use, and the basis for the predictions. Additionally, the report is to show the noise attenuation measures to be applied and analysis to show that the proposed buildings have been designed to limit intruding noise to the allowable interior noise exposure level of Ldn 45 dBA in any habitable room. Habitable rooms include bedrooms and living spaces; bathrooms are not considered habitable rooms.

The noise exposure at a site can be gauged by the Ldn, which represents the steady noise level containing the same total sound energy as the time-varying community noise levels measured over a 24-hour day. To compute the Ldn, the steady noise level is adjusted by a 10 dBA penalty during the nighttime period (10 PM to 7 AM) relative to the daytime to account for the higher sensitivity of people to noise, a 5 dBA penalty is applied during the evening period (7 PM to 10 PM).

Environmental noise is measured in A-weighted decibels, abbreviated dBA. The A-weighting scale causes the measuring instrumentation to respond to noise in a manner closely correlated with the response of the average person. Since community noise is universally measured in dBA, most community noise ordinances and standards are in terms of A-weighted noise levels and Ldn levels implicitly use A-weighting.

1.2 Ventilation Requirements

A determination of mechanical ventilation requirements is beyond the scope of this document, but be advised that for areas of the Project where the exterior noise exposure exceeds 60 Ldn, the windows in habitable spaces should be closed to provide the required noise insulation; these spaces may require an additional means of ventilation. The local interpretation for required mechanical or passive ventilation varies.

1.3 Newark Requirements

Per the policies outlined in the Newark General Plan (2013), it is our understanding that at areas where the exterior noise level will exceed 60 Ldn for the year 2036, the City of Newark requires the following confirmation:



- Building orientation, shielding and noise insulation design will provide an interior noise level within the residential areas will be 45 Ldn or less from exterior noise sources (e.g., railroad) for the year 2036 (Policy EH-7.5 and 7.7)
- Where this level is exceeded due to freeways, arterials, and/or railroads, the construction of berms, walls, buffer zones, and other noise-reduction measures to reduce noise to the greatest extent feasible will be required (Policy EH-7.4)

For new residential development, Newark requires the evaluation of potential vibration impacts for new development that occurs within 200 feet of a railroad track, in accordance with the Federal Transit Administration's (FTA) vibration screening distances. In such instances, the project property owner/developers shall retain an acoustical engineer to conduct an acoustic analysis and identify, where appropriate, site design features and/or required building construction improvements to ensure that vibration impacts would remain below acceptable levels for residential uses. (Policy EII-7.E)

Per the FTA guidance criteria, for infrequent events of the same type occurring fewer than 30 times per day vibration impact criteria is 80 VdB at residential buildings. The existing site experiences typically one freight train on the nearby spur per week. On the nearby railroad tracks on Sycamore freight traffic does occur. Similarly, commuter rail train traffic at Sycamore falls within the FTA category for occasional events (30 to 70 events per day), for which the FTA recommends a criterion of 78 VdB.

2 EXTERIOR CONDITIONS AT THE PROPOSED PROJECT SITE

2.1 Existing Noise Levels

An ambient long-term noise survey was conducted in July 2016. A logging sound level meter monitored noise levels continuously at the project site for several days. The noise survey provided data in hourly intervals throughout the survey duration. Equivalent noise data (Leq) were subsequently used to calculate the daily and typical Ldn at each location. The long-term noise measurements showed a maximum level of 77 Ldn. This noise environment appears to be controlled by the railroad horns occurring during nighttime hours (10 PM to 7 AM). Figure 1 shows the existing noise contours.

To determine the existing spectral composition of noise sources for the Project, a short-term (18-minute) recording was taken at the project site on Sunday, July 17, 2016. This measurement was made at a height of 5 feet above grade, but this did not include a train horn. The frequency content from the short-term measurement is shown in Appendix B, along with the typical train horn spectra obtained from our project archives.

2.2 Future Noise Levels

The existing noise environment is not expected to change substantially with the addition of the Project. An annual increase of 3% activity for traffic and trains over the next 10 years (assuming the same distribution of activity over a 24-hour period) would increase the noise exposure by 1 dBA by the year 2026 to 78 Ldn. This acoustical report provides information on the necessary building design elements to comply with the State of California Noise Insulation Standards for exterior noise. The noise contours shown in Figure 1 would thus be louder by 1 dBA if they were representative of the future noise levels discussed below. The estimated future noise levels based on existing activities are shown in Figure 2.

We have assumed that any mechanical equipment affiliated with the project will be in compliance with the noise requirements of the applicable Newark municipal codes and will also be designed not to contribute substantially to the noise environment for the Project residences. Further review of the mechanical design will be done as part of the project drawing development process.

The rail tracks at the project site appear to be spur tracks that feed off the Niles Subdivision. Any future plans that require more frequent freight or even commuter trains operated on these tracks at speeds over 25 to 40 mph would potentially be incompatible with the residential land use proposed at the project site.

2.3 Existing and Future Vibration Levels

The property line at the Filbert site would be about 50 ft. from the center line of near track and the nearest building would be about 68 ft. from the center of the near track. The vibration from trains along Sycamore were measured at 40 ft. from the centerline of the near track (58 ft. from the actual train); the measurement results are expected to be comparable or slightly higher than what could be experienced at the project site. We measured a passenger train at 66 VdB at a speed of 10 to 15 mph. Freight trains at a comparable distance could be expected to generate similar vibration levels. This

vibration is well below the applicable FTA criteria of 75 VdB for occasional events and 80 VdB for infrequent events. Thus, the existing train vibration at the site is well within the criteria.

The rail tracks at the project site appear to be spur tracks that feed off the Niles Subdivision. Future trains operated on these rail tracks at speeds over 25 to 40 mph could exceed the 75 VdB criterion for occasional events, or they could exceed the 80 VdB criterion for infrequent events above 50 mph.

3 INTERIOR NOISE EXPOSURE LEVELS DUE TO EXTERIOR NOISE SOURCES

CCR Title 24 requires that the building be oriented, shielded, and designed to have such sound insulation that, with all exterior doors and windows in the closed position, the interior noise level attributable to exterior sources shall not exceed an annual Ldn of 45 in any habitable room.

Windows and exterior doors are inherently the weak link, acoustically, of a building's exterior envelope. Therefore, proper selection and installation of exterior glazing elements are paramount to achieving CCR Title 24 interior noise limits.

The homes along Filbert Street will be exposed to a noise level up to Ldn 78 in the year 2026 as discussed above. Thus, all exterior elements of these Filbert home facades must provide a minimum 33 dBA noise reduction, preferably at least 35 dBA (~OITC 35) to allow for minimal furnishings within the residence. From the noise exposure levels determined for the units along each side of the Project, the maximum interior noise exposure levels in any occupied room will be less than 45 Ldn, assuming building construction with the walls and windows as listed in Table I and use of good construction techniques as indicated below. A summary of the projected exterior and interior noise levels is presented in Table II.

These calculations assume that the units will be sparsely furnished or acoustically "hard" units; units with more absorption in the rooms, provided by carpeting and upholstered furniture should experience slightly improved (lower) noise levels.

We have reported here two sets of ratings for exterior acoustical assemblies, the Outdoor-Indoor Sound Transmission Class (OITC) and the Sound Transmission Class (STC). The STC was originally developed to evaluate speech privacy through interior partitions. The OITC rating was adopted more recently to provide a more accurate measure of the noise reduction for typical exterior noise sources (e.g., airplanes, traffic), which have a different frequency content than speech. We recommend that the OITC values recommended here be used in the design process, since they are more accurate. If the OITC values are not available and acoustical test data from which an OITC value may be derived are not available, then we have also provided a minimum STC value (which is somewhat conservative). Furthermore, for exterior assemblies, the noise reduction provided by an assembly in the Project noise environment is the final requirement, and if an equivalent assembly can be found which provides the noise reduction (dBA), then it can be approved, regardless of the rated OITC or STC values.

3.1 Exterior Wall

The exterior wall construction has not yet been fixed, but typical construction could consist of wood frame, stucco or siding, 2"x studs with R-13 or thicker batt insulation and one layer of 5/8" dry wall for the interior face. Stucco walls can achieve an OITC 37 rating (STC 46), but simple siding walls are expected to have sound insulation test ratings of about OITC 31 (comparable to STC 42). Thus, stucco

exterior wall construction will satisfy the OITC and STC requirements to provide an interior noise environment 45 Ldn or less, and siding construction will typically require two or three total layers of gypsum board or densdeck.

3.2 Roof/Ceiling Assembly

An example of a roof/ceiling construction which would satisfy the requirements for this project would be one which utilizes 5/8" thick oriented strandboard screwed 6" o.c. to solid wood joists 9 1/4" thick with 3/4" x 2.6" wood furring strips which were screwed 12" o.c. to 5/8" thick layer of gypsum board. This wall satisfies an STC 39 (NRCC test TLF-95-097a) which is sufficient to mitigate the exterior noise below the 45 Ldn required for interior habitable spaces.

3.3 Windows

The physical characteristics of a dual-paned window with equal glazing cause a resonance. Data for most dual-glazed assemblies with equal glazing show a resonance at 125 Hz, allowing noise in that frequency band to pass through, relatively unreduced. The resulting quality of the traffic noise is altered, with the result that the noise can be more annoying, particularly for units exposed to traffic and bus noise from nearby streets. This effect can be characterized as a "hollow" or "zinging" sound, as if the noise source were operating in a tin can. To minimize resident annoyance for units exposed to traffic noise, we recommend that the Project use windows with unequal glazing as follows: either 1) the exterior glazing is 1.5 times thicker than the interior glazing or 2) the exterior glazing is laminated.

As discussed above, to meet sound insulation requirements of the State of California, the interior Ldn must be reduced to Ldn 45 or less. The noise reduction provided by a manufacturer's window assembly will vary from project to project, depending on the noise source characteristics. Thus, the OITC (and STC) ratings are limited with regard to the correlating noise reduction provided. Window test data should be submitted and verified to provide the required noise reduction prior to product approval. The required acoustically-gasketed, dual-glazed assemblies are described in Table I. Both the OITC and STC ratings should be satisfied. The window requirements are also shown in Figure 3.

Various glazing options can be used to achieve the California sound insulation standards. Nominally, the windows should have a rating of OITC 29 (approx. STC 37). In the bedroom areas, we recommend an upgrade to OITC 31/STC 39 to further reduce the noise from the discrete train horn events. Courtyard facing units and those shielded from train and traffic can have slightly lower rated windows of OITC 25/STC 33. The actual correlation between OITC, STC and glazing will vary with assembly, framing and manufacturer. Lesser OITC or STC values can be used only if the tested window assembly provides the necessary A-weighted noise reduction, subject to review and approval of window acoustical test data.

3.4 Exterior Doors

Any exterior residential glass patio doors should follow the same design requirements discussed above for windows. While not required by CBC, given the exposure to diesel locomotive noise and train horns, we recommend that all other exterior entry doors should have solid wood core with or without metal cladding to provide STC 36 or better, with full sound gasketing with non-porous seals.

3.5 Ventilation

All of the units will be exposed to noise levels exceeding 60 Ldn and will require some form of ventilation, as discussed above, since the windows should be closed to achieve the required sound isolation. This can be achieved passively with z-ducts (e.g., Vibro-Acoustics), fresh air ducts from SilenceAir or approved equal.

4 Vibration Evaluation

With the existing rail traffic on the railroad spur, no measures would be required to comply with any of the FTA criteria. If there is a reason to believe that at least 30 railroad events could occur per day, at speeds on the order of 50 mph, some vibration mitigation design would be required to comply with the Newark planning guidelines. It seems unlikely that schedule and speed changes of these magnitudes would occur in the foreseeable future; however, such expectations should be confirmed.

5 RECOMMENDED CONSTRUCTION TECHNIQUES

To achieve the expected interior noise levels and sound insulation between units it is necessary that good construction techniques and good materials be used for construction of the buildings. A significant increase in interior noise levels over expected levels could occur if workmanship or materials are of inferior quality. This is especially true for the windows since they are the weakest acoustical element of the exterior shell.

For Filbert Townhome residential project, we recommend that notes and details be included on the design drawings to ensure that the construction details achieve the insulation potential of the basic building assemblies. The following indicates the recommended additional notes and details:

- Use permanently non-hardening sealant around perimeter of window frames.
- Select window assemblies with effective nonporous gaskets or weather-stripping to minimize air infiltration and sound leakage.
- Provide airtight construction at all exterior walls with acoustical or other non-hardening sealant at floor plates.
- Use door jamb and head gasketing and door bottom gasketing at entry doors to seal the solid core doors against weather and sound.
- Caulk entry door thresholds as they are placed.

All of the above are required to comply with CCR Title 24 Thermal Insulation requirements.

It is important to note that any unlined ventilation or exhaust ducts directly exposed to the exterior noise sources can readily transmit that noise to the interior of the building. Therefore, unlined ducts or other elements having unshielded exterior openings with a line-of-sight to nearby roads are not recommended. To the extent feasible, any penetrations in the exterior walls having a direct view of the traffic on the roadways and railroads should be minimized.

TABLE I DESCRIPTION OF CONSTRUCTION ELEMENTS FOR THE POINT RESIDENTIAL PROJECT

(i) Exterior Walls:

Typical construction with wood frame, stucco or siding, 2"x studs with R-13 or thicker batt insulation and one layer of 5/8" dry wall for the interior face.

- With 7/8" stucco this provides at least OITC 37 (comparable to STC 46).
- With 1/2" siding and 1/2" plywood sheathing this provides at least OITC 31 (comparable to STC 42). Add at least two or three total layers of Type X 5/8" or densglas

(ii) Ceiling/Roof:

An example of a roof/ceiling construction which would satisfy the requirements for this project would be one which utilizes 5/8" thick oriented strandboard screwed 6" o.c. to solid wood joists 9 1/4" thick with 3/4" x 2.6" wood furring strips which were screwed 12" o.c. to 5/8" thick layer of gypsum board. This wall satisfies an STC 39 (NRCC test TLF-95-097a).

(iii) Windows (see also Figure 3):

Glazing for all sound rated windows and skylights should be of unequal thickness, as discussed in the report. The windows should have the performance characteristics listed below to provide the required (or recommended) noise reduction as indicated for each façade. Below are both the minimum requirements to meet code and our own recommendations which consolidate the window classifications in order to simplify the construction process.

- Living Areas – Required to meet State of California Requirements
 - Units facing Filbert and railroad tracks OITC 29/ STC 37
 - Units facing courtyard OITC 25/ STC 33
- Recommended upgrade for bedroom areas
 - Units facing railroad tracks and Filbert OITC 31 / STC 39

(iv) Exterior Doors

No requirements. Recommended that all other exterior entry doors have solid wood core with or without metal cladding to provide STC 36 or better, with full sound gasketing with non-porous seals.

TABLE II SUMMARY OF EXTERIOR AND INTERIOR NOISE EXPOSURE LEVELS WITH RECOMMENDED CONSTRUCTION ELEMENTS FOR THE FILBERT RESIDENTIAL PROJECT

Building Façade		Projected Maximum Noise Exposure Levels, Ldn				
		Exterior		Interior ¹ (Future Year 2026)		
		Existing	Future ²	Window ³	Ceiling/Roof	Wall
Filbert/RR	All floors	70-78	/9	<45	<45	<33
Courtyard	All floors	68-73	/4	<45	<45	<33
2 nd row rear	All floors	65-70	71	<45	<45	<33

Note 1: Estimated noise as reduced by each main component of the exterior shell

Note 2: Up to 1 dBA increase applied to the existing noise levels

Note 3: Using windows indicated in Table I



Figure 1 Project Site, Noise Measurement Locations and Existing Noise Contours

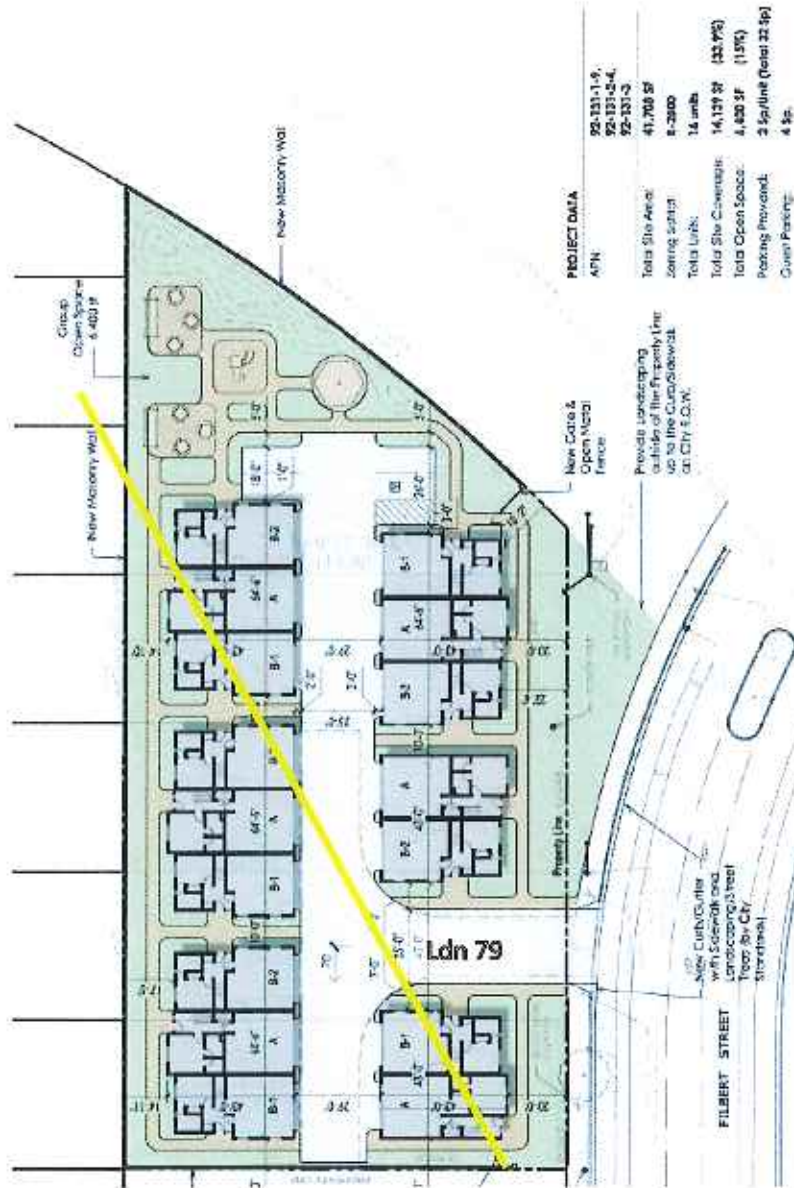


Figure 2 Project Layout and Future Noise Contours

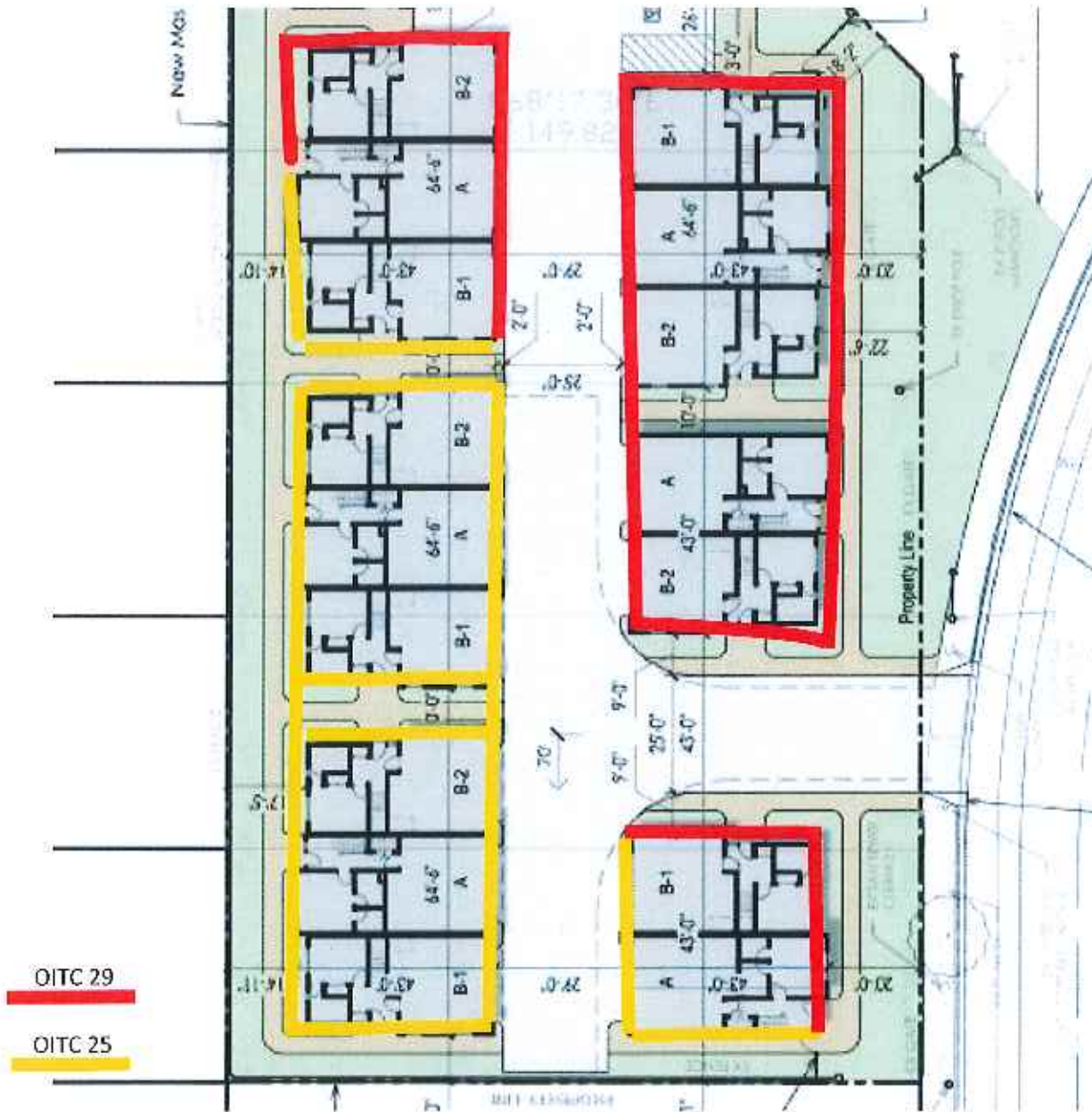


Figure 3 Window Requirements for Residential Units
(See Table I for upgrade recommendations at bedroom windows)

Appendix A Description Of Acoustical Terms Relevant To Title 24 Projects

A-Weighted Sound Level (dBA):

The sound pressure level in decibels as measured on a sound level meter using the internationally standardized A-weighting filter or as computed from sound spectral data to which A-weighting adjustments have been made. A-weighting de-emphasizes the low and very high frequency components of the sound in a manner similar to the response of the average human ear. A-weighted sound levels correlate well with subjective reactions of people to noise and are universally used for community noise evaluations.

Airborne Sound:

Sound that travels through the air, as opposed to structure-borne sound.

Ambient Noise:

The prevailing general noise existing at a location or in a space, which usually consists of a composite of sounds from many sources near and far.

Apparent (Field) Impact Insulation Class (AIIC):

A single number rating similar to the IIC except that the impact sound pressure levels are measured in the field.

Apparent (Field) Sound Transmission Class (ASTC):

A single number rating similar to STC, except that the transmission loss values used to derive the ASTC are measured in the field. All sound transmitted from the source room to the receiving room is assumed to be through the separating wall or floor-ceiling assembly.

Background Noise:

The general composite non-recognizable noise from all distant sources, not including nearby sources or the source of interest. Generally, background noise consists of a large number of distant noise sources and can be characterized by L90 or L99.

Community Noise Equivalent Level (CNEL):

The Leq of the A-weighted noise level over a 24-hour period with a 5 dB penalty applied to noise levels between 7 p.m. and 10 p.m. and a 10 dB penalty applied to noise levels between 10 p.m. and 7 a.m.

Day-Night Sound Level (Ldn):

The Leq of the A-weighted noise level over a 24-hour period with a 10 dB penalty applied to noise levels between 10 p.m. and 7 a.m.

Decibel (dB):

The decibel is a measure on a logarithmic scale of the magnitude of a particular quantity (such as sound pressure, sound power, sound intensity) with respect to a reference quantity.

Energy Equivalent Level (Leq):

The level of a steady noise which would have the same energy as the fluctuating noise level integrated over the time period of interest. Leq is widely used as a single-number descriptor of environmental noise. Leq is based on the logarithmic or energy summation and it places more emphasis on high noise level periods than does L50 or a straight arithmetic average of noise level over time. This energy average is not the same as the average sound pressure levels over the period of interest, but must be computed by a procedure involving summation or mathematical integration.

Frequency (Hz):

The number of oscillations per second of a periodic noise (or vibration) expressed in Hertz (abbreviated Hz). Frequency in Hertz is the same as cycles per second.

Impact Isolation Class (IIC):

A single number rating used to compare the effectiveness of floor-ceiling assemblies in providing reduction of impact generated sounds such as footsteps. It is derived from the measurement of impact sound pressure levels across a series of 16 test bands using a standardized tapping machine.

Outdoor-Indoor Transmission Class (OITC):

A single number classification, specified by the American Society for Testing and Materials (ASTM E 1332 issued 1994), that establishes the A-weighted sound level reduction provided by building facade components (walls, doors, windows, and combinations thereof), based upon a reference sound spectrum that is an average of typical air, road, and rail transportation sources. The OITC is the preferred rating when exterior facade components are exposed to a noise environment dominated by transportation sources.

Octave Band - 1/3 Octave Band:

One octave is an interval between two sound frequencies that have a ratio of two. For example, the frequency range of 200 Hz to 400 Hz is one octave, as is the frequency range of 2000 Hz to 4000 Hz. An octave band is a frequency range that is one octave wide. A standard series of octaves is used in acoustics, and they are specified by their center frequencies. In acoustics, to increase resolution, the frequency content of a sound or vibration is often analyzed in terms of 1/3 octave bands, where each octave is divided into three 1/3 octave bands.

Sound Pressure Level (SPL):

The sound pressure level of sound in decibels is 20 times the logarithm to the base of 10 of the ratio of the RMS value of the sound pressure to the RMS value of a reference sound pressure. The standard reference sound pressure is 20 micro-pascals as indicated in ANSI S1.8-1969, "Preferred Reference Quantities for Acoustical Levels".

Sound Transmission Class (STC):

STC is a single number rating, specified by the American Society for Testing and Materials, which can be used to measure the sound insulation properties for comparing the sound transmission capability, in decibels, of interior building partitions for noise sources such as speech, radio, and television. It is used extensively for rating sound insulation characteristics of building materials and products.

Structure-Borne Sound:

Sound propagating through building structure. Rapidly fluctuating elastic waves in gypsum board, joists, studs, etc.

Statistical Distribution Terms:

L99 and L90 are descriptors of the typical minimum or "residual" background noise (or vibration) levels observed during a measurement period, normally made up of the summation of a large number of sound sources distant from the measurement position and not usually recognizable as individual noise sources. Generally, the prevalent source of this residual noise is distant street traffic. L90 and L99 are not strongly influenced by occasional local motor vehicle passbys. However, they can be influenced by stationary sources such as air conditioning equipment.

L50 represents a long-term statistical median noise level over the measurement period and does reveal the long-term influence of local traffic.

L10 describes typical or average levels for the maximum noise levels occurring, for example, during nearby passbys of trains, trucks, buses and automobiles, when there is relatively steady traffic. Thus, while L10 does not necessarily describe the typical maximum noise levels observed at a point, it is strongly influenced by the momentary maximum noise level occurring during vehicle passbys at most locations.

L1, the noise level exceeded for 1% of the time is representative of the occasional, isolated maximum or peak level which occurs in an area. L1 is usually strongly influenced by the maximum short-duration noise level events which occur during the measurement time period and are often determined by aircraft or large vehicle passbys.

Appendix B Detailed Noise Measurement Results

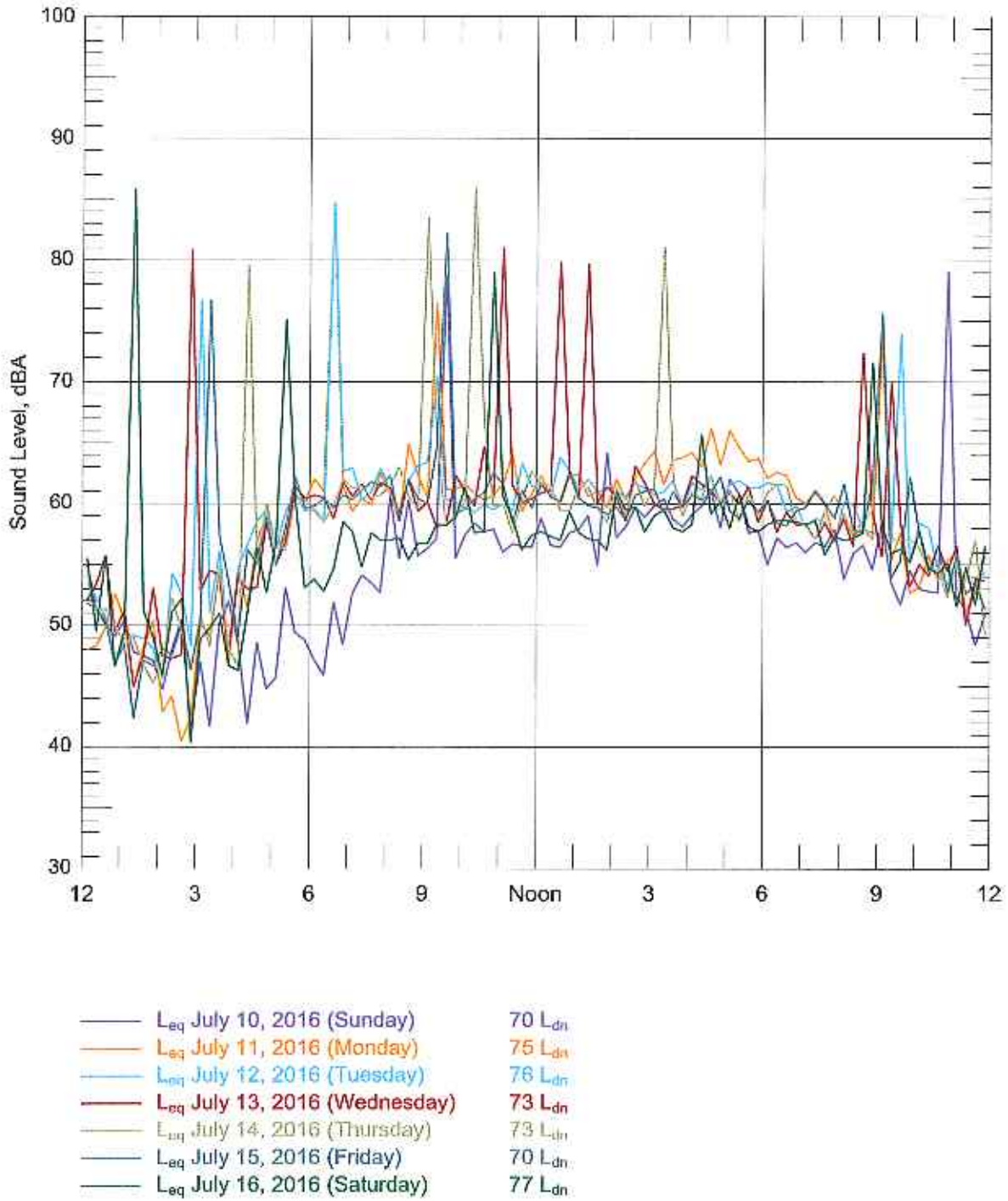
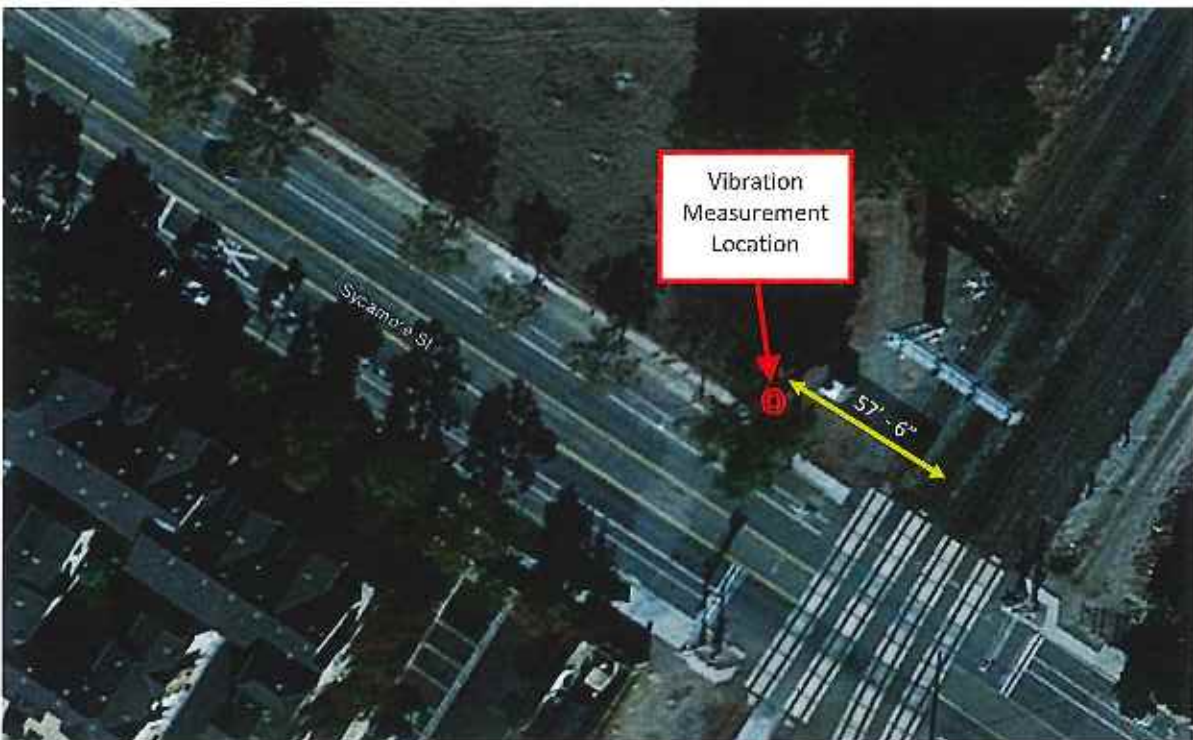


Figure 4 Long-Term Noise Survey Results at Project Site

Rail Vibration Measurement Location – Filbert Townhomes



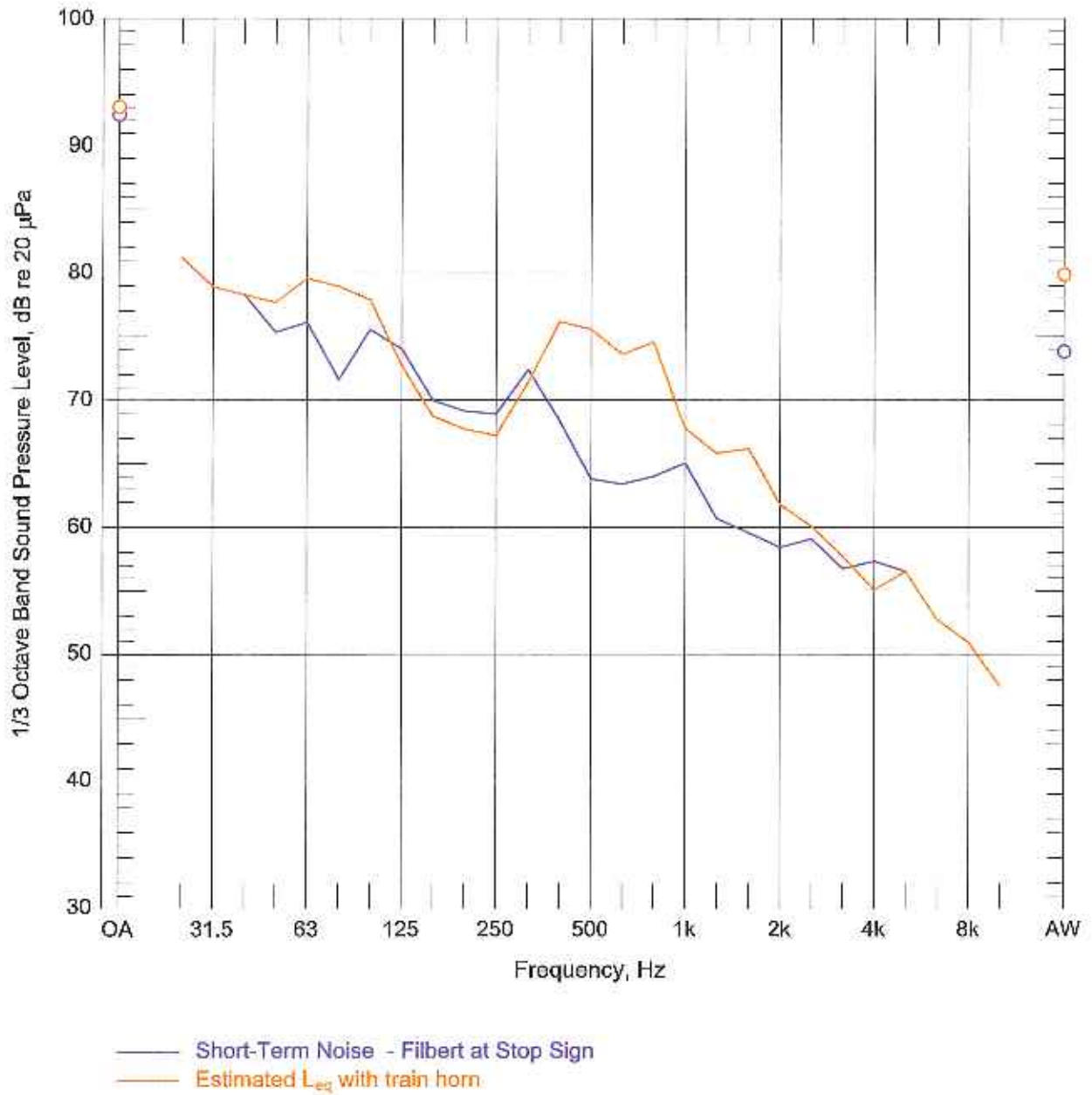


Figure 5 Measured and Estimated Noise Spectrum at the Project Site



October 14, 2016

Rishi Khanna
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Via email: rishi@rugstan.com

Subject: Results of Biological Assessment at the Filbert Street Villas Project in Newark, California

Dear Mr. Khanna:

This letter reports the results of a biological survey of a vacant lot on Filbert Street (project site), in Newark, Alameda County, California. The project site is the site of a proposed development to provide housing for the community. The City of Newark (City) requires a *Biological Assessment* (BA) report to safeguard against the destruction of habitat suitable for listed endangered, rare, or threatened species.¹ This BA addresses the effects the development would have on biological resources including special-status plant and animal species, wetlands, or other sensitive habitats.

The project site is within the Newark General Plan Land Use Category of medium density residential.² The project site is located in the southeast corner of the Newark 7.5 minute quadrangle and is located approximately 1 mile from salt marsh habitat on the edge of the San Francisco Bay (Figure 1). The character of the neighborhood is residential-industrial. The project site has street frontage on Filbert Street to the east. The site is secured with a 6-foot chain link fence on the street frontage. The south and west sides are bordered by fences separating the project site from residential units. The north is bound by an 8-foot concrete block wall with a railroad right-of-way beyond (Figure 2).

METHODS

With a focus on the Filbert Street lot and the greater Newark surroundings, LSA reviewed the following sources (literature review): Google Earth aerial imagery; CNDDDB for records of special-status vascular-plant and vertebrate-animal species; and a nine-quad search of the CNPS Inventory for rare plants.^{3,4,5} The CNPS nine-quad reference is centered on the Newark 7.5 minute quadrangle.

LSA senior botanist, Tim Milliken surveyed the project site on October 4, 2016. The project site was accessed from Filbert Street. Data gathered during the site visit included identification of plant communities on the site, observations of wildlife or signs of wildlife use of the site (including special-status wildlife), identification of trees on the site, identification of potential wetlands, and identification of sensitive vegetation or sensitive habitats. Field data sheets were used to document existing conditions of the project site.

¹ In email for Courtney Fogal on September 20, 2016.

² General Plan Tune Up Final EIR for the City of Newark, The Planning Center | DC&E, 2013.

³ Google Earth Pro 2016.

⁴ California Department of Fish and Wildlife (CDFW), California Natural Diversity Data Base (CNDDDB), September 7, 2016.

⁵ California Native Plant Society (CNPS) – Inventory of Rare Plants, October 7, 2016.



RESULTS

Biological Setting

A continuous view of the project site on Google Earth in aerial images from 1993 to the present shows a grassy field, with no structures, and no signature patterns that would suggest wetlands on the site. The field survey confirmed that annual grassland is the dominant ground cover and no wetlands were present. Trees associated with the project site provide shade, cover, and potential nesting sites for birds. There is evidence of imported soil in the south of the project site and a small pile of wood debris in the north of the project site. There are gopher holes onsite, but no ground squirrels, ground squirrel burrows, or evidence of burrowing owls observed on or adjacent to the site. There are no jurisdictional wetlands or sensitive habitats on the project site.

Vegetation Types


The vegetation types on the project site consist of non-native grassland and trees.

Non-native Grassland is the dominant land vegetation type on the project site. This vegetation type typically includes plant species that are indicative of disturbed sites. Herbaceous non-native species observed on the project site's non-native grassland include wild oats (*Avena fatua*), field bind-weed (*Convolvulus arvensis*), Bermuda grass (*Cynodon dactylon*), yellow star-thistle (*Centaurea solstitialis*), stinkwort (*Dittrichia graveolens*), horseweed (*Erigeron canadensis*), bristly ox-tongue (*Helminthotheca echioides*), short-pod mustard (*Hirschfeldia incana*), hare barley (*Hordeum murinum* subsp. *leporinum*), prickly lettuce (*Lactuca serriola*), California burclover (*Medicago polymorpha*), buckhorn plantain (*Plantago coronopus*), and smilo grass (*Stipa miliacea*). Shrubby non-native plants present include fennel (*Foeniculum vulgare*), Harding grass (*Phalaris aquatica*), and Russian thistle (*Salsola tragus*). Only two native plants were observed on the project site, coyote brush (*Baccharis pilularis*) and California poppy (*Eschscholzia californica*).

Trees. Two trees are located on the project site, a blackwood acacia (*Acacia melanoxylon*) with three trunks and a plum (*Prunus* sp.) with two trunks. The blackwood acacia is next to the fence on Filbert Street, and the plum occurs at the rear fence that borders residences to the west. An Australian willow (*Geijera parviflora*) and an Italian stone pine (*Pinus pinea*) are off-site, but are included in this discussion because of their proximity to the boundary of the project site. The Australian willow is a City-owned parkway tree planted in a tree pit on Filbert Street, while the canopy of the Italian stone pine hangs over a portion of the western boundary of the project site.

Wildlife

The wildlife species that occur on the project site are those species adapted to live in urban environments in close association with humans. Because the perimeter of the project site is fenced, the project site provides no habitat or movement corridor for large mammals such as coyote (*Canis latrans*) or deer (*Odocoileus hemionus*). However, the project site does provide these features for smaller mammal species and birds. Wildlife, or their sign, observed on the project site include turkey vulture (*Cathartes aura*), American crow (*Corvus brachyrhynchos*), dark-eyed junco (*Junco hyemalis*),



raccoon (*Procyon lotor*) tracks, Botta's pocket gopher (*Thomomys bottae*) mounds, and golden-crowned sparrow (*Zonotrichia atricapilla*).

Special-status Species

In this assessment, special-status species are those species listed as threatened or endangered (or threatened or endangered candidate species) under the California and/or federal endangered species act, fully protected species, California species of special concern, and plants with a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, 2B, or 3.^{1,2}

The literature search produced a list of 31 special-status plants and 17 species of special-status animals (Attachments: Literature Search). Twenty-nine (29) of these special-status plants and 14 special-status animals are associated with habitats not present on the site including alkaline soils, chaparral, cismontane woodland, bat roosting habitat, coastal bluff scrub, vernal pools, tidal, salt, and brackish marsh, large brambles of blackberry, or primarily aquatic habitats. Special-status species associated with habitat on the site (grasslands and debris piles) are unlikely to occur on the project site because of the prior disturbance to the site, including dominance of non-native plant species onsite, relative lack of native plant species onsite, the urban setting, the presence of imported soil, the lack of connection to other natural open spaces, and the enclosed nature of the site. This section also addresses the likelihood of presence or absence of special-status species from the project site given the existing habitat conditions.

Plants. The project site has been altered from its natural state by human use. The grassland onsite is weedy, has imported fill, and from the appearance of cut grass are routinely mowed. Based on records in the CNDDDB and CNPS Inventory, bent-flowered fiddleneck (*Amsinckia lunaris*) and Congdon's tarplant (*Centromadia parryi* subsp. *congdonii*) are the only special-status plant species potentially occurring in grassland habitats in the vicinity of the site. Neither of these species was observed during field survey.

- Bent-flowered fiddleneck is a CRPR 1B species. Its habitats include gravelly slopes, grassland, and openings in woodland. It is often found growing in serpentine soils. This species can be found growing within a wide elevation range from 5 to 800 meters. It usually blooms within the springtime months of March, April, May, and June. Although there are grasslands on the project site, suitable natural grassland habitat is not present and making the site unsuitable for this species.
- Congdon's tarplant is a CRPR 1B species. Its habitats include terraces, swales, floodplains, grassland, and disturbed sites. This species can be found growing at elevations below 300 meters. It usually blooms in summer to early fall (June - October). This species is known to occur in grassland areas with high disturbance. The site visit coincided with the flowering time for this species, and the species was not observed.

¹ CNDDDB, op. cit. September 7, 2016.

² CNPS, op. cit. October 7, 2016.

The presence of bent-flowered fiddleneck is highly unlikely due to the preponderance of weedy vegetation, the urban location, and the prior disturbance on the site. Alternatively, the site conditions are favorable for Congdon's tarplant. The October 4 site survey occurred during the flowering period when Congdon's tarplant would have been identifiable; however, it was not observed and is considered absent from the site. No special-status plants were observed on the project site, nor are they expected to occur there. No surveys for special-status plants are recommended.

Animals. The habitat on the project site is entirely upland and contains no suitable habitat for fish, amphibian, mammal, or bird species associated with salt marsh or estuarine system. The closest salt marsh and estuarine systems are approximately one mile to the west of the project site. Burrowing owl (*Athene cunicularia*), northern harrier (*Circus cyaneus*), and white-tailed kite (*Elanus leucurus*) are the only special-status animal species known from the area that could forage, roost, or nest within habitats such as those onsite.¹

- Burrowing owl is a California species of concern. Burrowing owls prefer to forage and nest in open habitats (e.g., grasslands, agricultural areas). They prefer sites with existing mammal burrows or other features (e.g., culverts, pipes, debris piles) suitable for nesting. Recent observations of burrowing owls have been recorded in the vicinity of the project site (CNDDDB occurrence #18, approximately 1.26 miles west of the project site). Although the site is small in size, the debris pile may provide suitable temporary cover for owls; however, there was no owl sign on the site or around the debris pile and no owls or suitable burrows were observed on or adjacent to the site.
- Northern harrier is a California species of concern. Northern harriers nest in wet meadows and marshes, and forage over open grasslands and agricultural fields. The site provides foraging habitat for northern harriers. The nearest occurrence of northern harrier is approximately 1.9 miles northwest of the project site (CNDDDB #5). However, given the small size of the site, the amount of surrounding development, and the availability of higher-quality habitat throughout the surrounding region (i.e., the marshlands of San Francisco Bay), it is unlikely that this species would nest on the project site. Suitable wet meadow and marsh nesting habitat is not present on the project site.
- White-tailed kite is a fully protected species. White-tailed kites require dense-topped trees or shrubs for nesting and perching, and forage over open grasslands, meadows, and marshes. The nearest occurrence of white-tailed kite is approximately 0.6 miles northwest of the project site (CNDDDB #2). The site provides foraging habitat for white-tailed kite. However, given the small size of the site, the amount of surrounding development, and the availability of higher-quality habitat throughout the surrounding region (i.e., the marshlands of San Francisco Bay), it is unlikely that this species would regularly occur on the project site. Suitable dense-topped nesting habitat is not present in the trees on the project site.

¹ CNDDDB, op. cit. September 7, 2016.



POTENTIAL IMPACTS

Special-status Plant Species

The potentially occurring special-status plant species are unlikely to occur on the project site because the site does not provide suitable habitat for most species or the species were determined absent based on a lack of observations of the species during an appropriately timed field survey. Special-status plant species are unlikely to occur on the project site.

Special-status Animal Species

The potentially occurring special-status animal species are unlikely to occur on the project site because of the small size of the site, lack of connection to natural open spaces, and lack of suitable habitat features (e.g., ground squirrel burrow, short grass) on the site. No special-status animal species were observed on the site during the survey.

Migratory Birds

The federal Migratory Bird Treaty Act and Sections 3503 and 3505 of the California Fish and Game Code protect most species of native birds, their nests, and eggs from harm. Birds could be harmed if bird nests and eggs are present in areas proposed for construction during the breeding season. Furthermore, if birds were nesting near the construction area, construction may result in the abandonment of the nest. If eggs or nestlings are present in the abandoned nest, their mortality would result in a violation of the Migratory Bird Treaty Act and the California Fish and Game Code. In the San Francisco Bay Region, the nesting season is generally considered to extend between February 1 and August 31.

Tree Ordinance

City of Newark Municipal Code Chapter 12.28.050 - Removal of trees (tree ordinance). The removal or permission to remove trees planted within the parkways shall be subject to the following:

A property owner may be permitted to remove a parkway tree under any one of several nuisance conditions including:

- Where removal is necessary for construction or other improvements to the property owner's property which have been approved by the city.

A parkway tree may not be removed without the property owner first securing a tree removal permit issued by the City of Newark Public Works Director. The property owner who is permitted to remove a parkway tree shall replace said tree and bear the cost for its replacement. The parkway tree removal shall be subject to all conditions set forth in the tree ordinances.

RECOMMENDATIONS TO MITIGATE PROJECT IMPACTS

The proposed project would not have a significant effect on the biological resources of the Filbert Street project site given the implementation of the measures described below.



PARKWAY TREE REMOVAL

It may be possible to develop the project without removing the parkway tree on Filbert Street. However, if the project requires the removal of a parkway tree, a tree removal permit must be secured from the City of Newark's Public Works Director. The property owner who is permitted to remove a parkway tree shall replace said tree and bear the cost of its replacement. All tree replacements shall be with an officially designated tree purchased through the city.

TREE REMOVAL / NESTING BIRDS

It is likely that nesting birds protected by the Migratory Bird Treaty Act and Fish and Game Code nest in the trees on the property. The trees should therefore be removed in the period outside of the nesting bird season. While the actual timing of nesting varies by species, weather, and location, the generally accepted breeding timeframe is February 1 through August 31. Some bird species nest before February 1, so the ideal time to remove the trees would be between September 1 and December 31. Because brush piles serve as an attractive refuge for wildlife including special-status species, the wood from the trees should be removed from the site or chipped immediately.

If the trees are removed during the nesting bird season, a qualified biologist will be required to conduct nesting bird surveys prior to removal. Trees containing active nests and adjacent trees will not be removed until after the young birds have fledged and are foraging independently.

Preconstruction Surveys for Breeding Birds

Pre-construction surveys should be initiated within 14 days prior to earth-disturbing activities during the breeding season. The breeding season begins February 1 and ends August 31. Breeding bird surveys should be conducted for species that could nest in the grasslands and trees. If a raptor nest is encountered, a buffer approximately 250 feet from the nest should be established, and if a songbird nest is encountered, a buffer of 50 feet from the nest should be established. People, construction equipment, staging, storage, and other construction related activity will be prohibited within the buffer area while the nest is active. If the qualified biologist determines that the nesting birds are acclimated to human activity, the buffer may be reduced. If the buffer is reduced, the birds should be periodically monitored to ensure that human activity is not causing stress or otherwise disrupting their normal behavior. The buffer can be removed from the nest once the young birds have fledged and are foraging independently.

CONCLUSION

The project site does not contain and sensitive habitats including wetlands, so no impacts to such resources are expected. The site is not expected to provide suitable habitat for special-status plant or animal species, and impacts to such species are unlikely. With the implementation of the recommended measures, the proposed project would not result in any significant adverse biological impacts.

Please contact me if you have any questions.

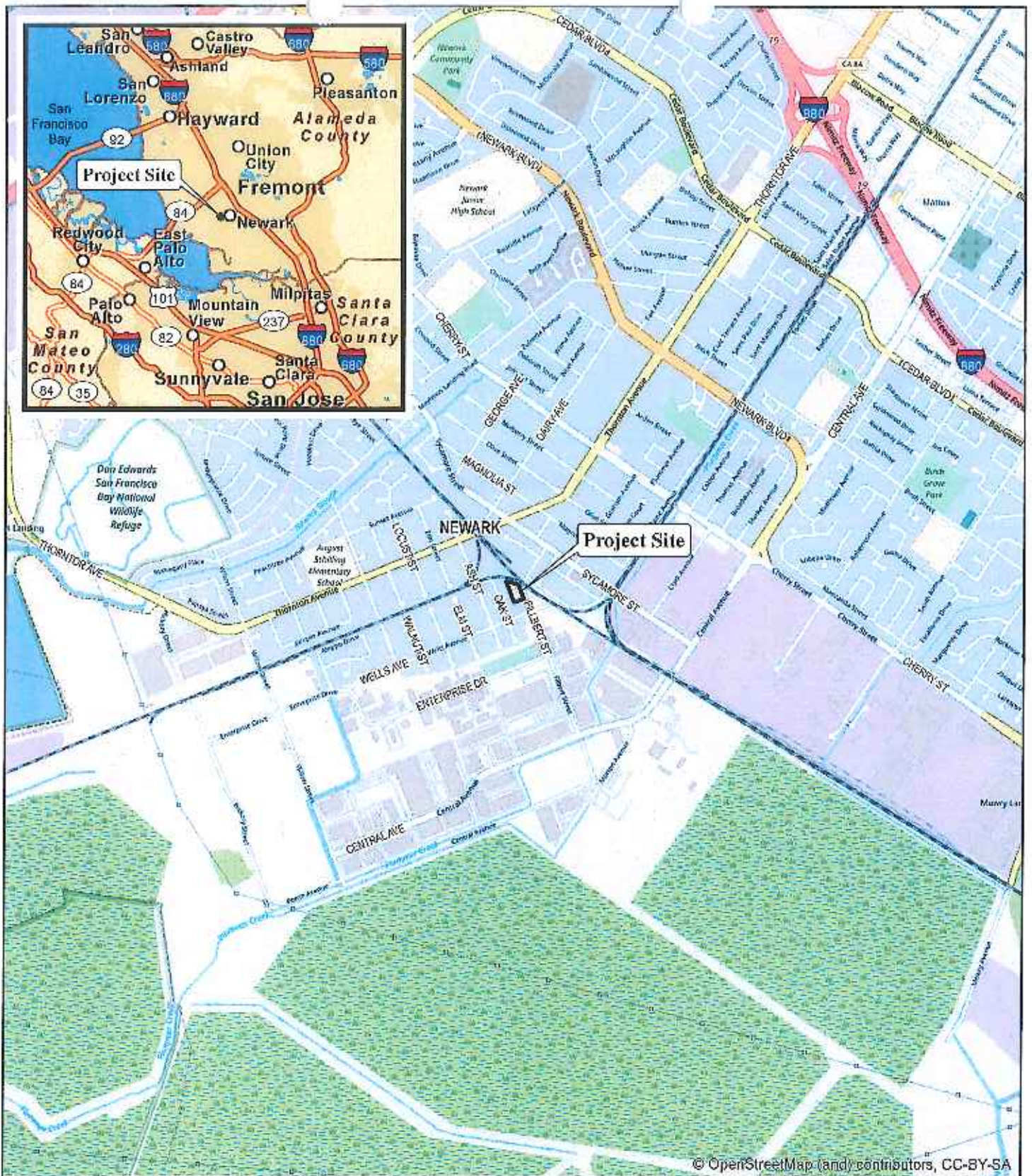
Sincerely,

LSA ASSOCIATES, INC.



Tim Milliken
Senior Botanist

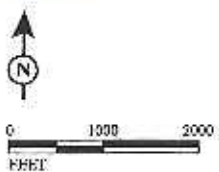
Attachments: Figure 1: Project Location
Figure 2: Project Site
Literature Search Results (CNDDDB Animal List, CNDDDB Plant List, CNPS Plant List)



© OpenStreetMap (and) contributors, CC-BY-SA

FIGURE 1

LSA



SOURCE: © OpenStreetMap (and) contributors, CC-BY-SA.

C:\SRU1601\GIS\Maps\Figure 1 Regional Location.mxd (10/12/2016)

Fillbert Villas Project
Newark, Alameda County, California
 Regional Location

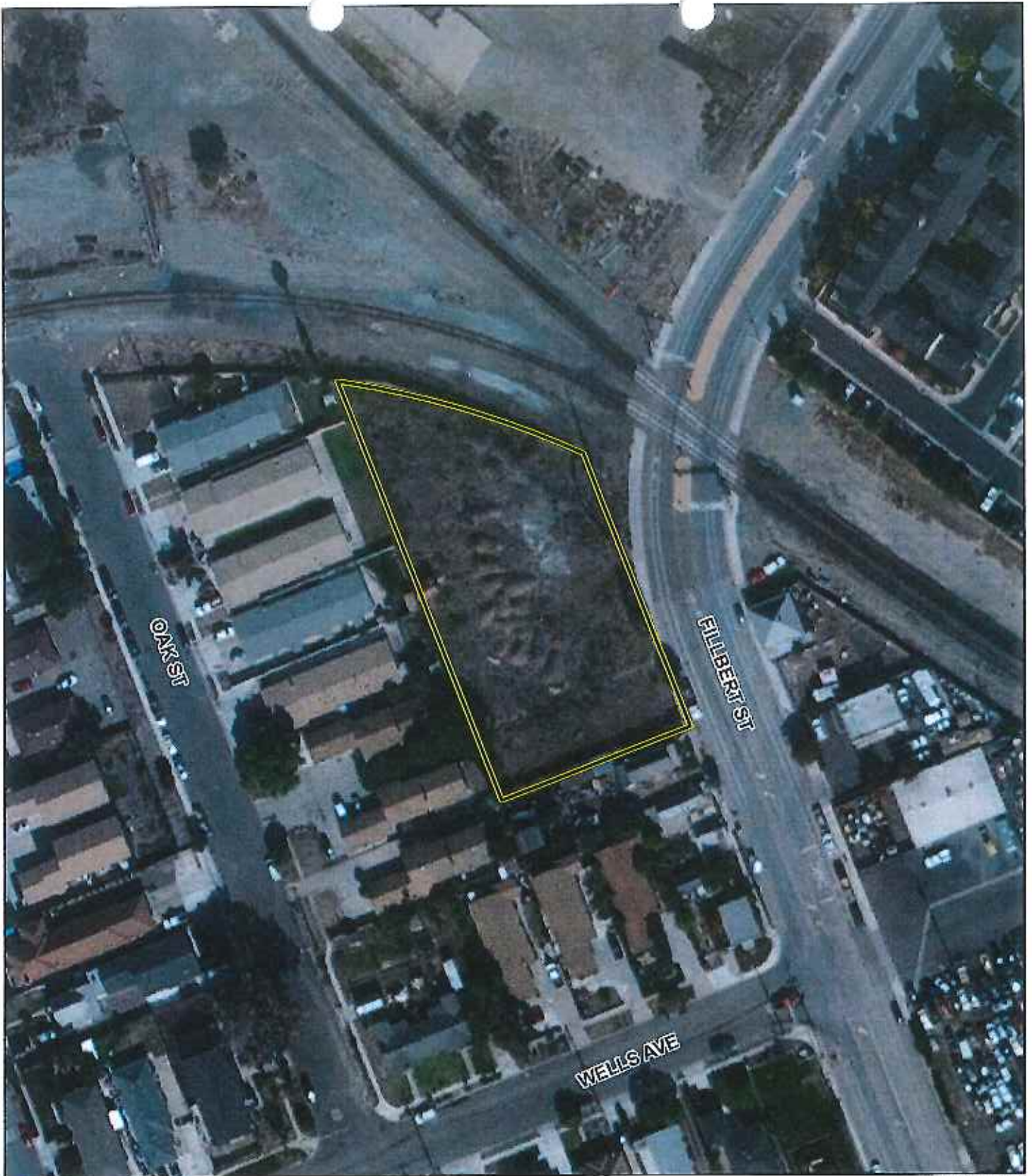



FIGURE 2

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LEGEND

 Project Site



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FEET

SOURCE: Esri World Imagery (6/6/2014).

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*Filbert Villas Project
Newark, Alameda County, California*

Site Location



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Query Criteria: Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals)
 AND Quad IS (Newark (3712251))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	None	G2G3	S1S2	SSC
<i>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G5	S3	SSC
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Charadrius alexandrinus nivosus</i> western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
<i>Circus cyaneus</i> northern harrier	ABNKC11010	None	None	G5	S3	SSC
<i>Elanus leucurus</i> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
<i>Lateralus jamaicensis coturniculus</i> California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
<i>Melospiza melodia pusillula</i> Alameda song sparrow	ABPBXA301S	None	None	G5T2?	S2S3	SSC
<i>Oncorhynchus mykiss irideus</i> steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
<i>Rallus longirostris obsoletus</i> California clapper rail	ABNME05016	Endangered	Endangered	G5T1	S1	FP
<i>Rana draytonii</i> California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
<i>Riparia riparia</i> bank swallow	ABPAU00010	None	Threatened	G5	S2	
<i>Sorex vagrans halicoetus</i> salt-marsh wandering shrew	AMABA01071	None	None	G5T1	S1	SSC
<i>Spirinchus thaleichthys</i> longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	SSC
<i>Sternula antillarum browni</i> California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP

Record Count: 17



Selected Elements by Scientific Name
 California Department of Fish and Wildlife
 California Natural Diversity Database



Query Criteria: Taxonomic Group (Ferns OR Gymnosperms OR Monocots OR Dicots) AND Quad (Newark (3712251))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	PDFAB0F8R1	None	None	G2T2	S2	1B.2
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant	PDAST4R0P1	None	None	G3T2	S2	1B.1
<i>Eryngium aristulatum</i> var. <i>hooveri</i> Hoover's button-celery	PDAP10Z043	None	None	G5T1	S1	1B.1
<i>Extriplex joaquiniana</i> San Joaquin sparscale	PDCHE041F3	None	None	G2	S2	1B.2
<i>Lasthenia conjugens</i> Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
<i>Plagiobothrys glaber</i> hairless popcornflower	PDBOR0V0B0	None	None	GH	SH	1A
<i>Senecio aphanactis</i> chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
<i>Stuckenia filiformis</i> ssp. <i>alpina</i> slender-leaved pondweed	PMPOY03091	None	None	G5T5	S3	2B.2
<i>Trifolium hydrophilum</i> saline clover	PDFAB400R5	None	None	G2	S2	1B.2

Record Count: 9

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
<u>Amsinckia lunaris</u>	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2	S2S3	G2G3
<u>Astragalus tener</u> var. <u>tener</u>	alkali milk-vetch	Fabaceae	annual herb	1B.2	S2	G2T2
<u>Atriplex depressa</u>	brittlescale	Chenopodiaceae	annual herb	1B.2	S2	G2
<u>Atriplex minuscula</u>	lesser saltscale	Chenopodiaceae	annual herb	1B.1	S2	G2
<u>Balsamorhiza macrolepis</u>	big-scale balsamroot	Asteraceae	perennial herb	1B.2	S2	G2
<u>Campanula exigua</u>	chaparral harebell	Campanulaceae	annual herb	1B.2	S2	G2
<u>Centromadia parryi</u> ssp. <u>congdonii</u>	Congdon's tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
<u>Chloropyron maritimum</u> ssp. <u>palustre</u>	Point Reyes bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S2	G4?T2
<u>Dirca occidentalis</u>	western leatherwood	Thymelaeaceae	perennial deciduous shrub	1B.2	S2	G2
<u>Eryngium aristulatum</u> var. <u>hooveri</u>	Hoover's button-celery	Apiaceae	annual / perennial herb	1B.1	S1	G5T1
<u>Eryngium jepsonii</u>	Jepson's coyote thistle	Apiaceae	perennial herb	1B.2	S2	G2
<u>Extriplex joaquinana</u>	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
<u>Fritillaria liliacea</u>	fragrant fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
<u>Helianthella castanea</u>	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
<u>Holocarpha macradenia</u>	Santa Cruz tarplant	Asteraceae	annual herb	1B.1	S1	G1
<u>Lasthenia conjugens</u>	Contra Costa goldfields	Asteraceae	annual herb	1B.1	S1	G1
<u>Lessingia hololeuca</u>	woolly-headed lessingia	Asteraceae	annual herb	3	S3?	G3?
<u>Micropus amphibolus</u>	Mt. Diablo cottonweed	Asteraceae	annual herb	3.2	S3S4	G3G4
<u>Monardella antonina</u> ssp. <u>antonina</u>	San Antonio Hills monardella	Lamiaceae	perennial rhizomatous herb	3	S1S3	G4T1T3Q
<u>Monolopia gracifens</u>	woodland woollythreads	Asteraceae	annual herb	1B.2	S3	G3
<u>Navarretia prostrata</u>	prostrate vernal pool navarretia	Polemoniaceae	annual herb	1B.1	S2	G2
<u>Plagiobothrys chorisianus</u> var. <u>chorisianus</u>	Choris' popcornflower	Boraginaceae	annual herb	1B.2	S2	G3T2Q
<u>Plagiobothrys glaber</u>	hairless popcornflower	Boraginaceae	annual herb	1A	SH	GH
<u>Polemonium carneum</u>	Oregon polemonium	Polemoniaceae	perennial herb	2B.2	S2	G3G4
<u>Puccinellia simplex</u>	California alkali grass	Poaceae	annual herb	1B.2	S2	G3
<u>Senecio aphanactis</u>	chaparral ragwort	Asteraceae	annual herb	2B.2	S2	G3
<u>Streptanthus albidus</u> ssp. <u>peramoenus</u>	most beautiful jewelflower	Brassicaceae	annual herb	1B.2	S2	G2T2
<u>Stuckenia filiformis</u> ssp. <u>alpina</u>	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb	2B.2	S3	G5T5
<u>Suaeda californica</u>	California seablite	Chenopodiaceae	perennial evergreen shrub	1B.1	S1	G1
<u>Trifolium hydrophilum</u>	saline clover	Fabaceae	annual herb	1B.2	S2	G2
<u>Tropidocarpum capparideum</u>	caper-fruited tropidocarpum	Brassicaceae	annual herb	1B.1	S1	G1

Suggested Citation

CNPS, Rare Plant Program. 2016. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website <http://www.rareplants.cnps.org> [accessed 07 October 2016].

RESOLUTION NO.

RESOLUTION OF THE PLANNING COMMISSION OF
THE CITY OF NEWARK APPROVING VESTING
TENTATIVE TRACT MAP 8387 AND SUBDIVISION AND
ZONING VARIANCES THERETO

WHEREAS, SRAJ Development Inc. has submitted TTM-17-07, Tentative Map 8387, to the Planning Commission of the City of Newark with subdivision and zoning variances covered by P-17-05, a planned unit development, and U-17-08, a conditional use permit, for a 16-unit residential condominium project at 37243 and 37257 Filbert Street (APN(s): 092-0131-001-09, 092-0131-002-04 AND 092-0131-003).

NOW, THEREFORE, BE IT RESOLVED that the Planning Commission of the City of Newark does hereby approve TTM-17-07, Tentative Tract Map 8387 with said subdivision and zoning variances covered by P-17-05 and U-17-08, as shown on Exhibit A, pages 1 through 7 and made part hereof by reference, subject to the following conditions:

- a. All applicable conditions listed in Planning Commission Resolution No. ____, dated August 8, 2017, recommending approval of P-17-05, a planned unit development, and U-17-08, a conditional use permit, for a 16-unit residential condominium project at 37243 and 37257 Filbert Street (APN(s): 092-0131-001-09, 092-0131-002-04 AND 092-0131-003).
- b. The developer shall ensure that all upstream drainage is not blocked and that no ponding is created by this development. Any construction necessary to ensure this shall be the developer's responsibility.
- c. That if any condition of this tentative tract map be declared invalid or unenforceable by a court of competent jurisdiction, this tentative tract map shall terminate and be of no force and effect, at the election of the City Council on motion.

This Resolution was introduced at the Planning Commission's August 8, 2017 meeting by Commissioner _____, seconded by Commissioner _____, and passed as follows:

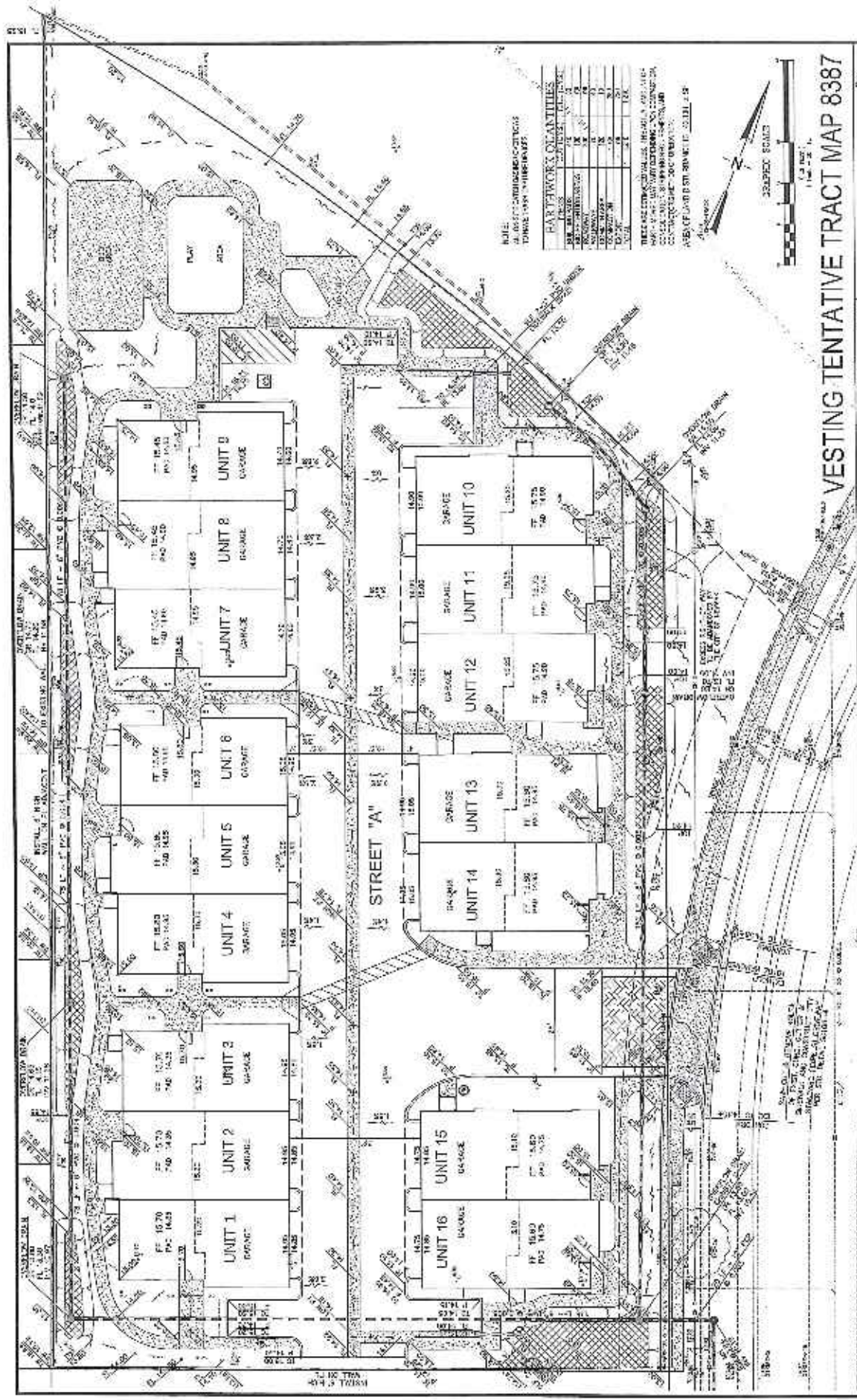
AYES:

NOES:

ABSENT:

TERRENCE GRINDALL, Secretary

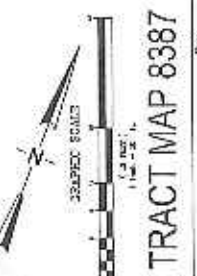
KAREN BRIDGES, Chairperson



DATE: 11/15/2011
 DRAWN BY: J. B. BROWN
 CHECKED BY: J. B. BROWN

PARTWORK'S QUANTITIES	
ITEM	QUANTITY
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97.000	97.000
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100.000	100.000

THESE QUANTITIES ARE FOR INFORMATION ONLY AND DO NOT REPRESENT THE FINAL QUANTITIES TO BE ORDERED. THE FINAL QUANTITIES SHALL BE DETERMINED BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION.



VESTING TENTATIVE TRACT MAP 8387

PRELIMINARY GRADING and DRAINAGE PLAN
 TRACT NO. 8387

CITY OF NEWARK
 CALIFORNIA

FILBERT VILLAS
 SAN ANGELO, CALIF.

DATE: 11/15/2011
 DRAWN BY: J. B. BROWN
 CHECKED BY: J. B. BROWN

EXHIBIT A.3

TM-3

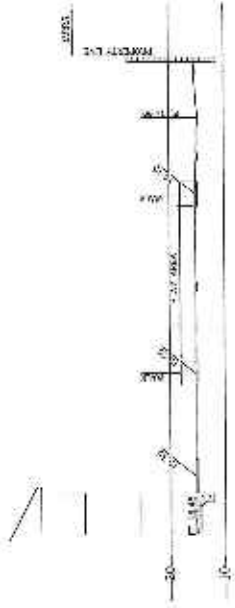
John Bolt Civil Engineering
 11111 S. Bascom Avenue, Suite 200
 San Jose, CA 95128
 Phone: (415) 251-1111
 Fax: (415) 251-1112
 Email: jbolt@johnbolt.com



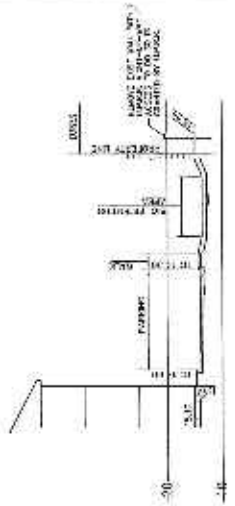
SECTION A-A
1/4" = 5' 11/16" V



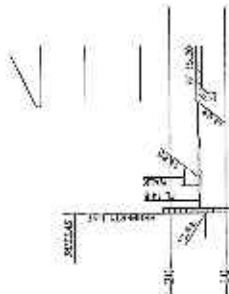
SECTION B-D
1/4" = 5' 11/16" V



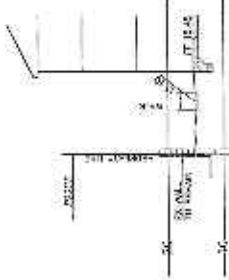
SECTION G-S
1/4" = 5' 11/16" V



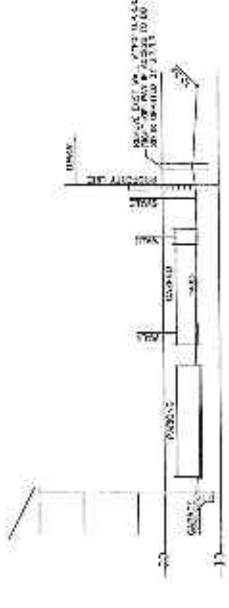
SECTION I-I
1/4" = 5' 11/16" V



SECTION B-S
1/4" = 5' 11/16" V



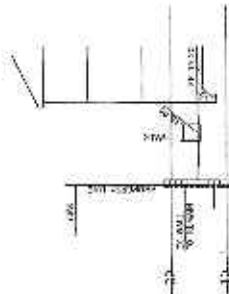
SECTION E-E
1/4" = 5' 11/16" V



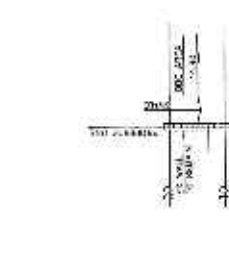
SECTION H-H
1/4" = 5' 11/16" V



SECTION L-L
1/4" = 5' 11/16" V



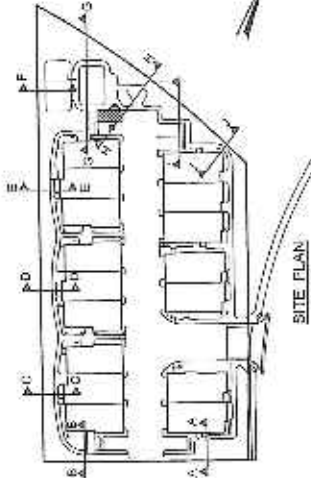
SECTION C-C
1/4" = 5' 11/16" V



SECTION F-F
1/4" = 5' 11/16" V



SECTION @ BIO-RETENTION
(SEE DRAWING FOR SET)
1/4" = 5' 11/16" V



SITE PLAN
1/4" = 40'



VESTING TENTATIVE TRACT MAP 8387

SECTIONS
TRACT NO. 8387

FILBERT VILLAS

CITY OF NEWK

ALAMEDA COUNTY

CALIFORNIA

REGISTERED PROFESSIONAL
LAND SURVEYOR
NO. 10113
EXPIRES 06/30/11



DeBolt Civil Engineering
an Equal Opportunity Employer
3000 California Street
San Francisco, CA 94115
Tel: 415.398.4328
Fax: 415.398.4328

TM-4
EXHIBIT A.04

OAK STREET

THIS PROPERTY IS IN THE JURISDICTION OF:

ALABAMA COUNTY PUBLIC WORKS DEPARTMENT
 1000 N. 10TH ST., SUITE 100
 DENVER, CO 80202
 PHONE: (303) 733-1000
 FAX: (303) 733-1001
 WWW: www.denvergov.org
 CITY OF DENVER
 1400 BROADWAY
 DENVER, CO 80202
 PHONE: (303) 733-1000
 FAX: (303) 733-1001
 WWW: www.denvergov.org

NOTES:

1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS ONLY. THE EXACT LOCATION OF UTILITIES SHALL BE DETERMINED BY FIELD SURVEY PRIOR TO CONSTRUCTION.
2. ALL UTILITIES SHALL BE DEEPENED TO A MINIMUM OF 48" BELOW FINISHED GRADE UNLESS OTHERWISE NOTED.
3. ALL UTILITIES SHALL BE PROTECTED BY A MINIMUM OF 18" OF GRANULAR FILL UNLESS OTHERWISE NOTED.
4. ALL UTILITIES SHALL BE PROTECTED BY A MINIMUM OF 18" OF GRANULAR FILL UNLESS OTHERWISE NOTED.
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10. ALL UTILITIES SHALL BE PROTECTED BY A MINIMUM OF 18" OF GRANULAR FILL UNLESS OTHERWISE NOTED.

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VESTING TENTATIVE TRACT MAP 8387

PRELIMINARY UTILITY PLAN TRACT NO. 8387

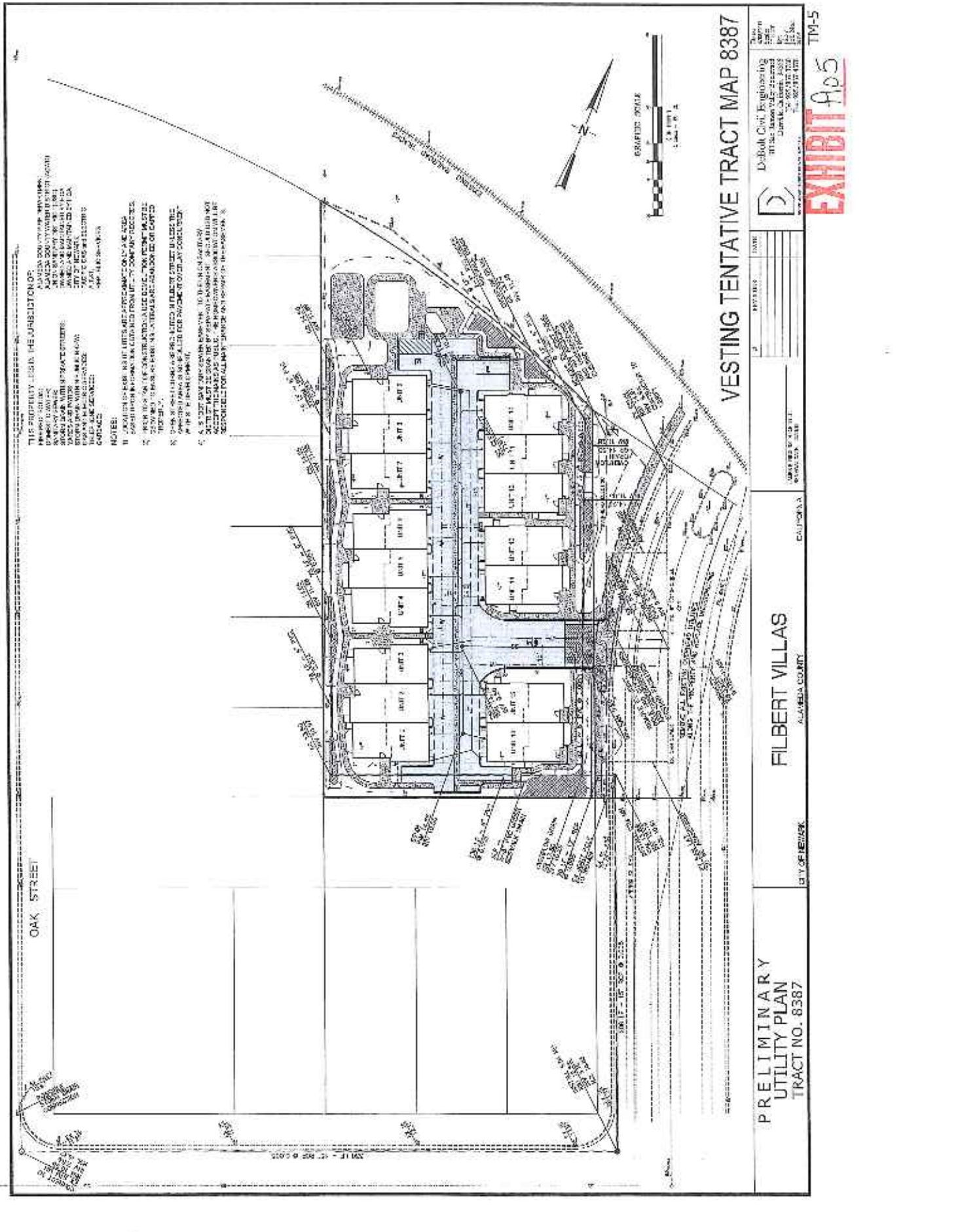
FILBERT VILLAS ALABAMA COUNTY CALIFORNIA

CITY OF DENVER

DATE	
REVISIONS	
NO.	
DESCRIPTION	
DATE	
BY	
CHECKED	
DATE	
BY	

D-Bolt Civil Engineering
 10100 E. Harvard Ave., Suite 100
 Denver, Colorado 80231
 Phone: (303) 751-1111
 Fax: (303) 751-1112
 www.d-bolt.com

EXHIBIT A-05 TM-5

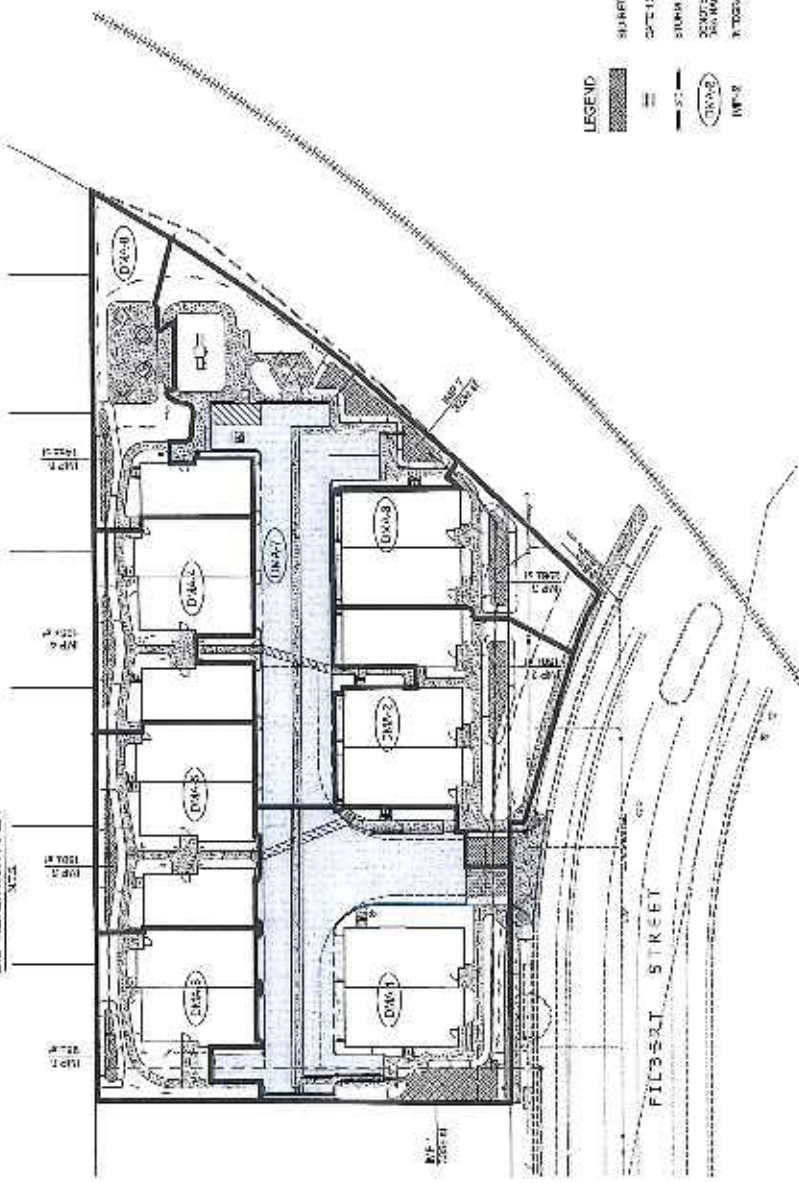


TR	REQUIRED BIO RETENTION AREA	ACTUAL BIO-RETENTION AREA
1	305 sq ft	305 sq ft
2	167 sq ft	167 sq ft
3	50 sq ft	50 sq ft
4	153 sq ft	153 sq ft
5	195 sq ft	195 sq ft
6	89 sq ft	89 sq ft
7	337 sq ft	337 sq ft
8	147 sq ft	147 sq ft

TR	ASPH. JT. CONCRETE	ROOF	LANDSCAPE
1	6,387 sq ft	1,829 sq ft	1,477 sq ft
2	438 sq ft	2,650 sq ft	1,775 sq ft
3	57 sq ft	1,079 sq ft	1,165 sq ft
4	425 sq ft	2,459 sq ft	806 sq ft
5	405 sq ft	2,959 sq ft	485 sq ft
6	511 sq ft	1,911 sq ft	742 sq ft
7	5,315 sq ft	C	1,070 sq ft
8	345 sq ft	812	1,565 sq ft

STORMWATER CONTROL PLAN NOTES

1. ALL LOTS IN THIS TRACT SHALL BE INSTALLED WITH A BIO-RETENTION SYSTEM. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE BIO-RETENTION DESIGN MANUAL, 2008 EDITION, PUBLISHED BY THE CALIFORNIA WATER RESOURCES AGENCY, 2008. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE BIO-RETENTION DESIGN MANUAL, 2008 EDITION, PUBLISHED BY THE CALIFORNIA WATER RESOURCES AGENCY, 2008. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE BIO-RETENTION DESIGN MANUAL, 2008 EDITION, PUBLISHED BY THE CALIFORNIA WATER RESOURCES AGENCY, 2008.
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VESTING TENTATIVE TRACT MAP 8387

PRELIMINARY STORM WATER CONTROL PLAN TRACT NO. 8387
 CITY OF SAN JOSE, CALIFORNIA
 FILBERT VILLAS ALAMEDA COUNTY
 PROJECT NO. 100-100-0000
 DATE: 10/15/2010

Defoli Civil Engineering
 3015 Santa Clara Avenue
 San Jose, CA 95128
 Tel: 408.253.1111
 Fax: 408.253.1112
 www.defolivil.com

EXHIBIT A-17

TM-7