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January 19, 2010

James Pardee, Jr.
West Lilac Farms I and II
267 Stonecreek Court
Westlake Village, CA 91361

**SUBJECT: Noise Assessment for the West Lilac (TM 5276) Residential Development in the County of San Diego CA**

Dear Mr. Pardee:

At your request, Ldn Consulting, Inc. have performed an acoustical site assessment of the proposed TM 5276 single-family residential development project located in northern San Diego, California. The results of that assessment, as well as predicted construction noise, on-site and off-site roadway noise for the proposed West Lilac subdivision, TM 5276, are presented in this letter report.

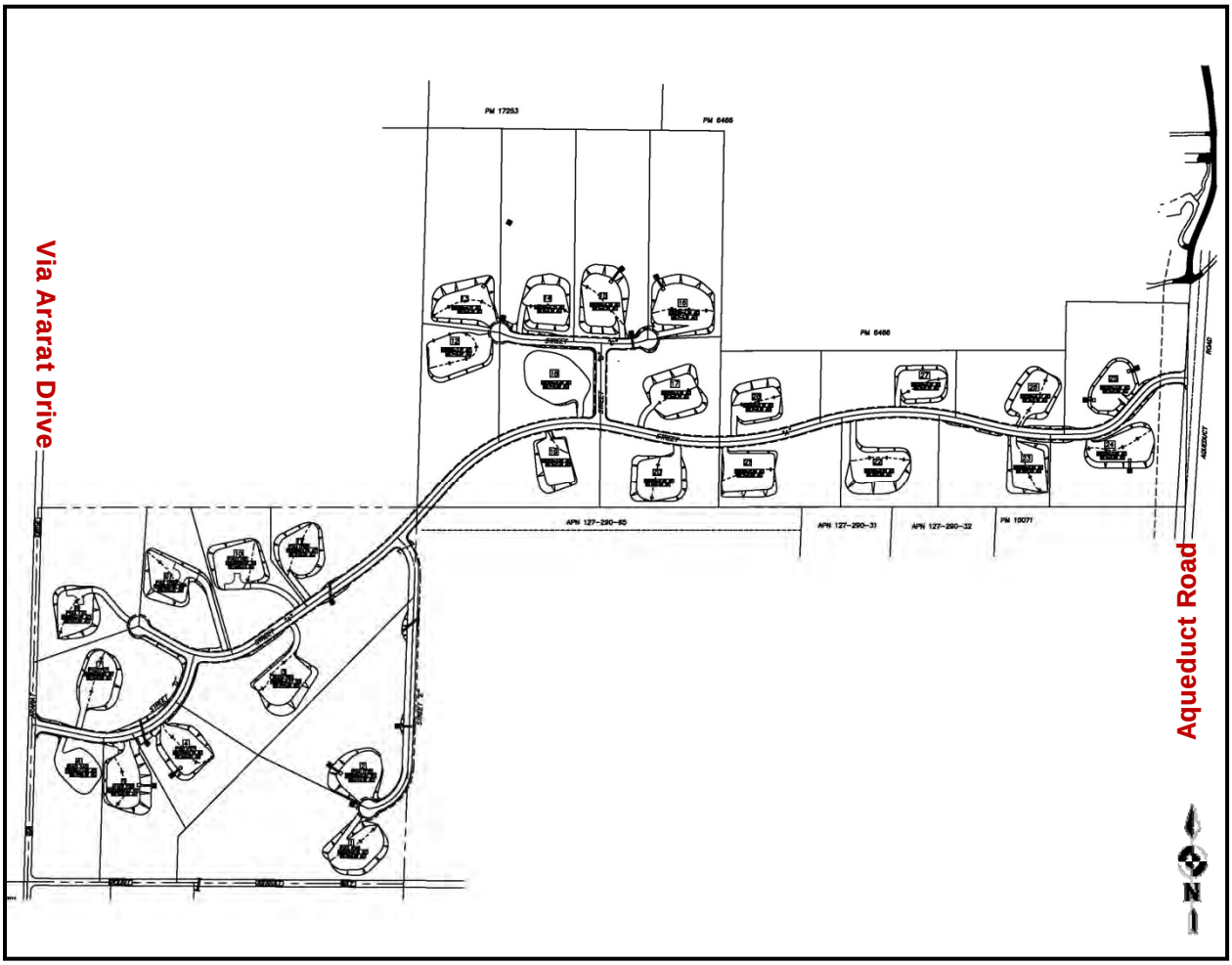
## Project Location and Description

The project proposes a 28-lot residential subdivision on 92.8 acres. The project site is located south of West Lilac Road between Via Ararat Drive and Aqueduct Road in the community of Bonsall in the unincorporated area of northern San Diego County. The project site vicinity map is provided in Figure 1. The project site is comprised of two distinct areas, the western and eastern portions.

Grading and construction of the project may occur under several different scenarios. The project may be developed all at one time, as two separate phases or on a lot-by-lot basis, which may result in some lots undergoing grading and construction simultaneously. The western portion of the site consists of 11 residential lots with direct access to Via Ararat Drive. The eastern portion of the site is the remaining 17 residential lots with direct access to Aqueduct Road. The site currently consists of undeveloped land, various vegetation and agricultural uses. The project site configuration is provided in Figure 2.

## Figure 1: Project Vicinity Map

**Figure 2: Project Site Plan**




## COUNTY OF SAN DIEGO STANDARDS

Policy 4b of the County of San Diego Noise Element in the General Plan provides interior and exterior noise standards as part of the County's Noise Element of the General Plan for assessing the compatibility of land uses with transportation related noise impacts. For assessing noise impacts to sensitive residential land uses, the County requires an exterior noise level of 60 dBA CNEL or less for outdoor living areas and an interior noise standard of 45 dBA CNEL.

Section 36.404 of the County of San Diego noise ordinance provides performance standards and noise control guidelines for determining and mitigating non-transportation, or stationary, noise source impacts to residential properties. The

purpose of the noise ordinance is to protect, create and maintain an environment free from noise and vibration that may jeopardize the health or welfare, or degrade the quality of life.

According to the stationary source exterior noise standards, no person shall operate any source of sound at any location within the County or allow the creation of any noise on a property which causes the noise levels to exceed the exterior noise limits at the property boundary within all non-industrial zones. The noise ordinance sets an exterior noise limit for residential land uses in and adjacent to the property of 50 dBA Leq for daytime hours of 7 a.m. to 10 p.m. and 45 dBA Leq during the noise sensitive nighttime hours of 10 p.m. to 7 a.m.

Section 36.409 of the County of San Diego ordinance controls construction equipment noise. Except for emergency work, it shall be unlawful for any person, including the County of San Diego, to operate construction equipment at any construction site, except as outlined in subsections (a) and (b) below:

(a) It shall be unlawful for any person to operate construction equipment between the hours of 7 p.m. of any day and 7 a.m. of the following day.

(b) It shall be unlawful for any person to operate construction equipment on Sundays, and days appointed by the President, Governor, or the Board of Supervisors for a public fast, Thanksgiving, or holiday, but a person may operate construction equipment on the above-specified days between the hours of 10 a.m. and 5 p.m. at his residence or for the purpose of constructing a residence for himself, provided that the average sound level does not exceed 75 decibels during the period of operation and that the operation of construction equipment is not carried out for profit or livelihood.

(c) It shall be unlawful to operate any construction equipment so as to cause at or beyond the property line of any property upon which a legal dwelling unit is located an average sound level greater than 75 decibels between the hours of 7 a.m. and 7 p.m. For temporary activities, the County considers the 75 decibel (A) average to be based on a period of eight hours.

Section 36.410 of the County of San Diego ordinance controls impulsive noise levels. In addition to the general limitations on sound levels in section 36.404 and the limitations on construction equipment in section 36.409, the following additional sound level limitations shall apply:

(a) Except for emergency work or work on a public road project, no person shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level of 82 dBA at residential or civic uses and 85 dBA at agricultural, commercial or industrial uses as described in the County Zoning Ordinance. This is measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, for 25 percent of the minutes in the measurement period, as described in Guidelines for Determining Significance for 12 Noise subsection (c) below. The maximum sound level depends on the use being made of the occupied property.

(b) Except for emergency work, no person working on a public road project shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in 85 dBA at residential or civic uses and 90 dBA at agricultural, commercial or industrial uses as described in the County Zoning Ordinance. This is measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, for 25 percent of the minutes in the measurement period, as described in subsection (c) below. The maximum sound level depends on the use being made of the occupied property.

(c) The minimum measurement period for any measurements conducted under this section shall be one hour. During the measurement period a measurement shall be conducted every minute from a fixed location on an occupied property. The measurements shall measure the maximum sound level during each minute of the measurement period. If the sound level caused by construction equipment or the producer of the impulsive noise, exceeds the maximum sound level for any portion of any minute it will deemed that the maximum sound level was exceeded during that minute.

## Construction Analysis Procedures and Findings

Construction noise represents a short-term impact on the ambient noise levels. Noise generated by construction equipment includes haul trucks, water trucks, graders, dozers, loaders and scrapers can reach relatively high levels. The most effective method of controlling construction noise is through local control of construction hours and by limiting the hours of construction to normal weekday working hours.

The U.S. Environmental Protection Agency (U.S. EPA) has compiled data regarding the noise generating characteristics of specific types of construction equipment. Noise levels generated by heavy construction equipment can range from 60 dBA to in excess of 100 dBA when measured at 50 feet. However, these noise levels diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of

distance. For example, a noise level of 75 dBA measured at 50 feet from the noise source to the receptor would be reduced to 69 dBA at 100 feet from the source to the receptor, and reduced to 63 dBA at 200 feet from the source.

Using a point-source noise prediction model, calculations of the expected construction noise impacts were completed. The essential model input data for these performance equations include the source levels of each type of equipment, relative source to receiver horizontal and vertical separations, the amount of time the equipment is operating in a given day, also referred to as the duty-cycle and any transmission loss from topography or barriers. To determine the worst-case noise levels for the grading operations no topographic attenuation or barrier reductions were utilized.

Construction noise impacts for the West Lilac subdivision (TM 5276) were completed based upon construction equipment required for their project pursuant to a November 25, 2008 report from J.T. Kruer & Company attached as Attachment A to this report. Grading and construction of the project may occur under several different scenarios. The project may be developed all at one time, as two separate phases or on a lot-by-lot basis, which may result in some lots undergoing grading and construction simultaneously. All the internal roadways will be graded prior to the grading of any proposed Lots under any of the aforementioned scenarios. Additionally, no rock crushing or blasting is required during the grading operations of the project site. The grading of the proposed roadways and the proposed lots are analyzed separately below.

## Roadway Grading Operations

The November 25, 2008 J.T. Kruer Report on construction activities for the project attached as Attachment A indicates that balancing and base operations for the street improvements for the project will require one 14 H (motor grater), two scrapers, one skip loader, two vibratory rollers, and a 2,000 gallon water truck. During asphalt paving and construction of the dyke for the street improvements, construction equipment will consist of one paving machine, one skip loader, and two rollers. This information is shown on page 4 of the J.T. Kruer report. Based on the EPA noise emissions, empirical data and the amount of equipment needed, worst case noise impacts from this construction equipment for roadway operations would occur during the base operations (grading). Reference noise levels for each piece of equipment during the base operations are provided in Table 1 below.

**Table 1: Reference Noise Levels for Roadway Construction**

| Construction Phase | Construction Equipment | Quantity | Source Level @ 50-Feet (dBA Leq)[1] |
|---|---|---|---|
| Grading and Base Operations | Water Truck | 1 | 70 |
| | Scraper | 2 | 75 |
| | Motor Grader | 1 | 73 |
| | Skip Loader | 1 | 72 |
| | Vibratory Roller | 2 | 74 |
| [1] Source: EPA 1971 and Empirical Data | | | |

Based upon physical constraints and normal roadway grading operations either the two scrapers, the combination of a dozer and loader or the vibratory rollers will be working along the project roadways in a single area at any given time with the use of a water truck. This activity will be intermittent as the grading progresses and the equipment will be spread out throughout the site. The scrapers have the highest reference noise level, of the equipment listed, of 75 dBA Leq at 50-feet, as can be seen in Table 1 above, and the worst-case condition would occur when the two scrapers and the water truck are working in close proximity to each other. The cumulative noise levels from these three pieces of equipment are provided in Table 2 below. As can be seen in Table 2, the cumulative noise level is 78.6 dBA Leq at a distance of 50-feet and at a distance of 80-feet the noise levels would drop below the County threshold of 75 dBA Leq.

Most of the internal roadways are located more than 200-feet from the project boundaries with the exception of the proposed roadway located along the south eastern property line, near the intersection of Mr. Ararat Road and Mt. Ararat Lane that provides access to proposed Lots 1 and 2. This proposed roadway is directly adjacent to the property to the east. The property to the east has no dwelling unit and is considered unoccupied. According to the County Noise Ordinance Section 36.409 (c), the 75 dBA threshold pertains to a property having a legal dwelling unit and therefore the property to the east is exempt from the noise levels. The nearest legal dwelling unit to the east is over 1,000 feet and to the south is more than 250-feet from the end of the roadway. Therefore no impacts are anticipated from the grading operations of the internal project's roadways.

**Table 2: Roadway Construction Noise Levels**

| Construction Equipment | Quantity | Source Level @ 50-Feet (dBA Leq) | Duty Cycle (Hours/Day) | Cumulative Noise Level @ 50-Feet (dBA Leq) |
|---|---|---|---|---|
| Water Truck | 1 | 70 | 8 | 70 |
| Scraper | 2 | 75 | 8 | 78 |
| | | | Cumulative Levels @ 50 Feet (dBA) | 78.6 |
| | | | Distance To Property Line | 80 |
| | | | Noise Reduction Due To Distance | -4.1 |
| | | | **NEAREST PROPERTY LINE NOISE LEVEL** | **74.5** |

## Proposed Residential Lot Grading Operations

Whether the lots are developed all at once time, in two separate phases, or sold and graded individually, the following grading operations are anticipated. Most of the grading activities will occur near the center of each proposed lot to create a level pad area.

Project Site is Mass Graded

The November 25, 2008 J.T. Kruer report indicates that construction equipment for clearing and grubbing will consist of a D-8R dozer, one loader, and four high side end dumps. Remedial and mass grading will consist of six scrapers, two D-9 dozers, one rubber tire dozer, one blade (motor grader) and two 4,000 gallon water trucks. Finished grading equipment will include two dozers, one scraper, one motor grater, two 4,000 water trucks, and one vibratory compactor. These grading operations will not occur simultaneously. Based on the EPA noise emissions, empirical data and the amount of equipment needed, worst case noise impacts from this construction equipment for site preparation would occur during the remedial and mass grading operations. Reference noise levels for each piece of equipment during the mass grading operations are provided in Table 3 below.

The equipment is anticipated to be spread out over the entire site; some equipment may be operating at or near the property line while the rest of the equipment may be located more than 300-feet from the same property line.

### Table 3: Reference Noise Levels for Mass Grading

| Construction Phase | Construction Equipment | Quantity | Source Level @ 50-Feet (dBA Leq)[1] |
|---|---|---|---|
| Mass Grading Operations | Dozer | 2 | 75 |
| | Motor Grader | 1 | 73 |
| | Scrapers | 6 | 75 |
| | Rubber Dozer | 1 | 72 |
| | Water Truck | 2 | 70 |
| [1] Source: EPA 1971 and Empirical Data | | | |

As can be seen in Table 4, if all the equipment was operating in the same location, which is not physically possible, at a distance as close as 160-feet from the nearest property line the point source noise attenuation from construction activities is 10.1 dBA utilizing a 6 dBA reduction per doubling of distance.

### Table 4: Construction Noise Levels (Mass Grading)

| Construction Equipment | Quantity | Source Level @ 50-Feet (dBA Leq) | Duty Cycle (Hours/Day) | Cumulative Noise Level @ 50-Feet (dBA Leq) |
|---|---|---|---|---|
| Dozer | 2 | 75 | 8 | 78 |
| Motor Grader | 1 | 73 | 8 | 75 |
| Scrapers | 6 | 75 | 8 | 83 |
| Rubber Dozer | 1 | 72 | 8 | 72 |
| Water Truck | 2 | 70 | 8 | 73 |
| | | | Cumulative Levels @ 50 Feet (dBA) | 84.9 |
| | | | Distance To Nearest Property Line | 160 |
| | | | Noise Reduction Due To Distance | -10.1 |
| | | | **NEAREST PROPERTY LINE NOISE LEVEL** | **74.8** |

This would result in an anticipated worse-case combined noise level of 74.8 dBA at the property line. Given this and the spatial separation of the equipment, the noise levels

will comply with the County of San Diego's 75 dBA standard at all project property lines. If the project site was graded in two Phases (West and East) the separation of each Phase is more than 500-feet and noise levels during the grading operations will comply with the 75 dBA standard.

Lots Developed Individually

The construction equipment needed for each individual lot will consist of one dozer, a compactor and a water truck during the preparation and grading of each pad. A backhoe and cement truck are anticipated for the installation of utilities and driveways. These operations will not occur simultaneously. Based on the EPA noise emissions, empirical data and the amount of equipment needed, worst case noise impacts from this construction equipment for site preparation would occur during the grading operations. Reference noise levels for each piece of equipment during the individual lot grading operations are provided in Table 5 below.

The nearest proposed residential property lines are located 80 feet or more from the grading operations for each lot. As can be seen in Table 6, at a distance of 80-feet the point source noise attenuation from construction activities and the nearest property line is 4.1 dBA. All other property lines are located further from the acoustic center of proposed grading operations. Given this, the noise levels will comply with the County of San Diego's 75 dBA Leq standard at all project property lines.

**Table 5: Reference Noise Levels for Individual Lots**

| Construction Phase | Construction Equipment | Quantity | Source Level @ 50-Feet (dBA Leq)[1] |
|---|---|---|---|
| Grading Operations | Dozer | 2 | 75 |
| | Compactor | 1 | 75 |
| | Water Truck | 2 | 70 |

[1] Source: EPA 1971 and Empirical Data

**Table 6: Construction Noise Levels (Individual Lots)**

| Construction Equipment | Quantity | Source Level @ 50-Feet (dBA Leq) | Duty Cycle (Hours/Day) | Cumulative Noise Level @ 50-Feet (dBA Leq) |
|---|---|---|---|---|
| Compactor | 1 | 75 | 8 | 75 |
| Dozer | 1 | 75 | 8 | 75 |
| Water Truck | 1 | 70 | 8 | 70 |
| | | | Cumulative Levels @ 50 Feet (dBA) | 78.6 |
| | | | Distance To Nearest Property Line | 80 |
| | | | Noise Reduction Due To Distance | -4.1 |
| | | | **NEAREST PROPERTY LINE NOISE LEVEL** | **74.5** |

## Off-Site Roadway Noise Analysis and Findings

The off-site project related roadway segment noise levels projected in this report were calculated using the methods in the Highway Noise Model published by the Federal Highway Administration (FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108, December, 1978). The FHWA Model uses the traffic volume, vehicle mix, speed, and roadway geometry to compute the equivalent noise level. A spreadsheet calculation was used which computes equivalent noise levels for each of the time periods used in the calculation of CNEL. Weighting these equivalent noise levels and summing them gives the CNEL for the traffic projections. The noise contours are then established by iterating the equivalent noise level over many distances until the distance to the desired noise contour(s) are found. For this project the 60 dBA CNEL contour was calculated based upon the County of San Diego thresholds.

Because mobile/traffic noise levels are calculated on a logarithmic scale, a doubling of the traffic noise or acoustical energy results in a noise level increase of 3 dBA. Therefore the doubling of the traffic volume, without changing the vehicle speeds or mix ratio, results in a noise increase of 3 dBA. Mobile noise levels radiant in an almost oblique fashion from the source and drop off at a rate of 3 dBA for each doubling of distance under hard site conditions and at a rate of 4.5 dBA for soft site conditions. Hard site conditions consist of concrete, asphalt and hard pack dirt while soft site conditions exist in areas having slight grade changes, landscaped areas and vegetation.

Hard site conditions, as identified in the previous report, were used to develop the noise contours and analyze noise impacts along all roadway segments. The future traffic noise model utilizes a typical, conservative vehicle mix of 95% Autos, 3% Medium Trucks and 2% Heavy Trucks for all analyzed roadway segments. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA Model.

Direct and cumulative roadway noise impacts would be considered significant if the project increases noise levels for a noise sensitive land use by 3 dBA CNEL and if: (1) the existing noise levels already exceed the 60 dBA CNEL residential standard, or (2) the project increases noise levels from below the 60 dBA CNEL standard to above 60 dBA CNEL in the area adjacent to the roadway segment.

If cumulative impacts are found, the County of San Diego requires that the Cumulative without Project scenario and the cumulative with project scenario be compared to the existing noise levels to determine if the project has a cumulatively considerable significant impact. Project generated cumulatively considerable roadway noise impacts would be significant if the project raises the Cumulative without Project noise level by 1 dBA or greater. If the project and cumulative projects do not increase the existing noise levels to sensitive land uses by 3 dBA CNEL, no significant cumulative noise impacts occur and the project would not result in a cumulatively considerable impact.

Direct Noise Impacts

To determine if direct off-site noise level increases associated with the development of the project will create noise impacts. The noise levels for the existing conditions were compared with the noise level increase from the project. Utilizing the project's traffic assessment (Source: Darnell & Associates, Inc. 8/09) noise contours were developed for the following traffic scenarios:

Existing: Current day noise conditions without construction of the project.

Existing Plus Project: Current day noise conditions plus the completion of the project.

Existing vs. Existing Plus Project: Comparison of the direct project related noise level increases in the vicinity of the project site.

The noise levels and the distances to the 60 dBA CNEL contours for the roadways in the vicinity of the Project site are given in Table 7 for the Existing Scenario and in Table 8 for the Existing Plus Project Scenario. Note that the values given do not take into account the effect of any noise barriers or topography that may affect ambient noise levels. Table 9 presents the comparison of the Existing Year with and without project related noise levels.

### Table 7: Existing Noise Levels

| Roadway | Segment | ADT[1] | Vehicle Speeds (MPH)[1] | Noise Level @ 50-Feet (dBA CNEL) | 60 dBA CNEL Contour Distance (Feet) |
|---|---|---|---|---|---|
| **Camino Del Rey** | SR-76 to Old River Rd | 9,840 | 45 | 69.3 | 429 |
| | Old River Rd to W. Lilac Rd | 9,517 | 45 | 69.2 | 415 |
| **West Lilac Road** | Camino Del Rey to Via Ararat Dr | 2,121 | 45 | 62.7 | 92 |
| | Via Ararat Dr to Aqueduct Rd | 2,130 | 45 | 62.7 | 93 |
| | Aqueduct Rd to Old Highway 395 | 2,292 | 45 | 63.0 | 100 |
| **Old Highway 395** | Dulin Rd to W. Lilac Rd | 4,174 | 55 | 67.6 | 288 |
| | W. Lilac Rd to Via Urner Wy | 4,280 | 55 | 67.7 | 295 |
| **Via Ararat Drive** | W. Lilac Rd to Mt. Ararat Wy | 326 | 35 | 52.2 | 8 |
| **Aqueduct Road** | W. Lilac Rd to Via Urner Wy | 253 | 25 | 49.1 | 4 |
| **Via Urner Way** | Aqueduct Rd to Old Highway 395 | 956 | 25 | 54.9 | 15 |

[1] Source: Project Traffic study prepared by Darnell & Associates, Inc. 8/09

### Table 8: Existing + Project Noise Levels

| Roadway | Segment | ADT[1] | Vehicle Speeds (MPH)[1] | Noise Level @ 50-Feet (dBA CNEL) | 60 dBA CNEL Contour Distance (Feet) |
|---|---|---|---|---|---|
| **Camino Del Rey** | SR-76 to Old River Rd | 9,948 | 45 | 69.4 | 433 |
| | Old River Rd to W. Lilac Rd | 9,625 | 45 | 69.2 | 419 |
| **West Lilac Road** | Camino Del Rey to Via Ararat Dr | 2,229 | 45 | 62.9 | 97 |
| | Via Ararat Dr to Aqueduct Rd | 2,248 | 45 | 62.9 | 98 |
| | Aqueduct Rd to Old Highway 395 | 2,520 | 45 | 63.4 | 110 |
| **Old Highway 395** | Dulin Rd to W. Lilac Rd | 4,227 | 55 | 67.7 | 292 |
| | W. Lilac Rd to Via Urner Wy | 4,455 | 55 | 67.9 | 307 |
| **Via Ararat Drive** | W. Lilac Rd to Mt. Ararat Wy | 457 | 35 | 53.7 | 12 |
| **Aqueduct Road** | W. Lilac Rd to Via Urner Wy | 458 | 25 | 51.7 | 7 |
| **Via Urner Way** | Aqueduct Rd to Old Highway 395 | 956 | 25 | 54.9 | 15 |

[1] Source: Project Traffic study prepared by Darnell & Associates, Inc. 8/09

**Table 9: Existing vs. Existing + Project Noise Levels**

| Roadway | Segment | Existing Noise Level @ 50-Feet (dBA CNEL) | Existing Plus Project Noise Level @ 50-Feet (dBA CNEL) | Project Related Direct Noise Level Increase (dBA CNEL) |
|---|---|---|---|---|
| **Camino Del Rey** | SR-76 to Old River Rd | 69.3 | 69.4 | 0.1 |
| | Old River Rd to W. Lilac Rd | 69.2 | 69.2 | 0.0 |
| **West Lilac Road** | Camino Del Rey to Via Ararat Dr | 62.7 | 62.9 | 0.2 |
| | Via Ararat Dr to Aqueduct Rd | 62.7 | 62.9 | 0.2 |
| | Aqueduct Rd to Old Highway 395 | 63.0 | 63.4 | 0.4 |
| **Old Highway 395** | Dulin Rd to W. Lilac Rd | 67.6 | 67.7 | 0.1 |
| | W. Lilac Rd to Via Urner Wy | 67.7 | 67.9 | 0.2 |
| **Via Ararat Drive** | W. Lilac Rd to Mt. Ararat Wy | 52.2 | 53.7 | 1.5 |
| **Aqueduct Road** | W. Lilac Rd to Via Urner Wy | 49.1 | 51.7 | 2.6 |
| **Via Urner Way** | Aqueduct Rd to Old Highway 395 | 54.9 | 54.9 | 0.0 |
| Sound Levels provided are worst-case and do not take into account topography or shielding from barriers. | | | | |

The overall roadway segment noise levels will increase from 0.1 dBA CNEL to 2.6 dBA CNEL with the development of the project. The highest noise level increases of 1.5 dBA CNEL and 2.6 dBA CNEL occur along Via Ararat Drive and Aqueduct Road, respectively. Even with the roadway noise increases along these two segments the noise levels are below the County threshold of 60 dBA CNEL. The project does not create a direct impact of more than 3.0 dBA CNEL on any roadway segment. Therefore, the project's direct contributions to off-site roadway noise increases will not cause any significant impacts to any existing or future noise sensitive land uses.

Cumulative Noise Impacts

To determine if cumulative off-site noise level increases associated with the development of the project and other planned or permitted projects in the vicinity will create noise impacts. The noise levels for the near-term project buildout and other planned and permitted projects were compared with the existing conditions. Utilizing the project's traffic assessment (Source: Darnell & Associates, Inc. 8/09) noise contours were developed for the following traffic scenarios:

Existing: Current day noise conditions without construction of the project.

Existing Plus Cumulative Projects Plus Project: Current day noise conditions plus the completion of the project and the completion of other permitted or planned projects.

Existing vs. Existing Plus Cumulative Plus Project: Comparison of the existing noise levels and the related noise level increases from the combination of the project and all other planned or permitted projects in the vicinity of the site.

The existing noise levels and the distances to the 60 dBA CNEL contours for the roadways in the vicinity of the Project site are given in Table 7 above for the Existing Scenario. The near-term cumulative noise conditions are provided in Table 10. No noise barriers or topography that may affect noise levels were incorporated in the calculations. Table 11 presents the comparison of the Existing Year and the Near-Term Cumulative noise levels.

The overall roadway segment noise levels will increase from 0.1 dBA CNEL to 2.9 dBA CNEL with the development of the project. The highest noise level increases of 2.9 dBA CNEL occurs along Aqueduct Road. Even with the roadway noise increases along these two segments the noise levels are below the County threshold of 60 dBA CNEL. No cumulative noise level increases of 3 dBA CNEL were found on any of the roadway segments. Therefore no cumulative or cumulatively considerable impacts are anticipated and no future analysis is required.

**Table 10: Existing + Project + Cumulative Noise Levels**

| Roadway | Segment | ADT[1] | Vehicle Speeds (MPH)[1] | Noise Level @ 50-Feet (dBA CNEL) | 60 dBA CNEL Contour Distance (Feet) |
|---|---|---|---|---|---|
| **Camino Del Rey** | SR-76 to Old River Rd | 11,620 | 45 | 70.1 | 506 |
| | Old River Rd to W. Lilac Rd | 10,414 | 45 | 69.6 | 454 |
| **West Lilac Road** | Camino Del Rey to Via Ararat Dr | 2,853 | 45 | 64.0 | 124 |
| | Via Ararat Dr to Aqueduct Rd | 2,967 | 45 | 64.1 | 129 |
| | Aqueduct Rd to Old Highway 395 | 3,285 | 45 | 64.6 | 143 |
| **Old Highway 395** | Dulin Rd to W. Lilac Rd | 5,935 | 55 | 69.1 | 410 |
| | W. Lilac Rd to Via Urner Wy | 6,230 | 55 | 69.3 | 430 |
| **Via Ararat Drive** | W. Lilac Rd to Mt. Ararat Wy | 481 | 35 | 53.9 | 12 |
| **Aqueduct Road** | W. Lilac Rd to Via Urner Wy | 492 | 25 | 52.0 | 8 |
| **Via Urner Way** | Aqueduct Rd to Old Highway 395 | 989 | 25 | 55.1 | 16 |

[1] Source: Project Traffic study prepared by Darnell & Associates, Inc. 8/09

**Table 11: Existing vs. Existing + Project + Cumulative Noise Levels**

| Roadway | Segment | Existing Noise Level @ 50-Feet (dBA CNEL) | Cumulative Plus Project Noise Level @ 50-Feet (dBA CNEL) | Cumulative Noise Level Increase (dBA CNEL) |
|---|---|---|---|---|
| **Camino Del Rey** | SR-76 to Old River Rd | 69.3 | 70.1 | 0.8 |
| | Old River Rd to W. Lilac Rd | 69.2 | 69.6 | 0.4 |
| **West Lilac Road** | Camino Del Rey to Via Ararat Dr | 62.7 | 64.0 | 1.3 |
| | Via Ararat Dr to Aqueduct Rd | 62.7 | 64.1 | 1.4 |
| | Aqueduct Rd to Old Highway 395 | 63.0 | 64.6 | 1.6 |
| **Old Highway 395** | Dulin Rd to W. Lilac Rd | 67.6 | 69.1 | 1.5 |
| | W. Lilac Rd to Via Urner Wy | 67.7 | 69.3 | 1.6 |
| **Via Ararat Drive** | W. Lilac Rd to Mt. Ararat Wy | 52.2 | 53.9 | 1.7 |
| **Aqueduct Road** | W. Lilac Rd to Via Urner Wy | 49.1 | 52.0 | 2.9 |
| **Via Urner Way** | Aqueduct Rd to Old Highway 395 | 54.9 | 55.1 | 0.1 |
| Sound Levels provided are worst-case and do not take into account topography or shielding from barriers. | | | | |

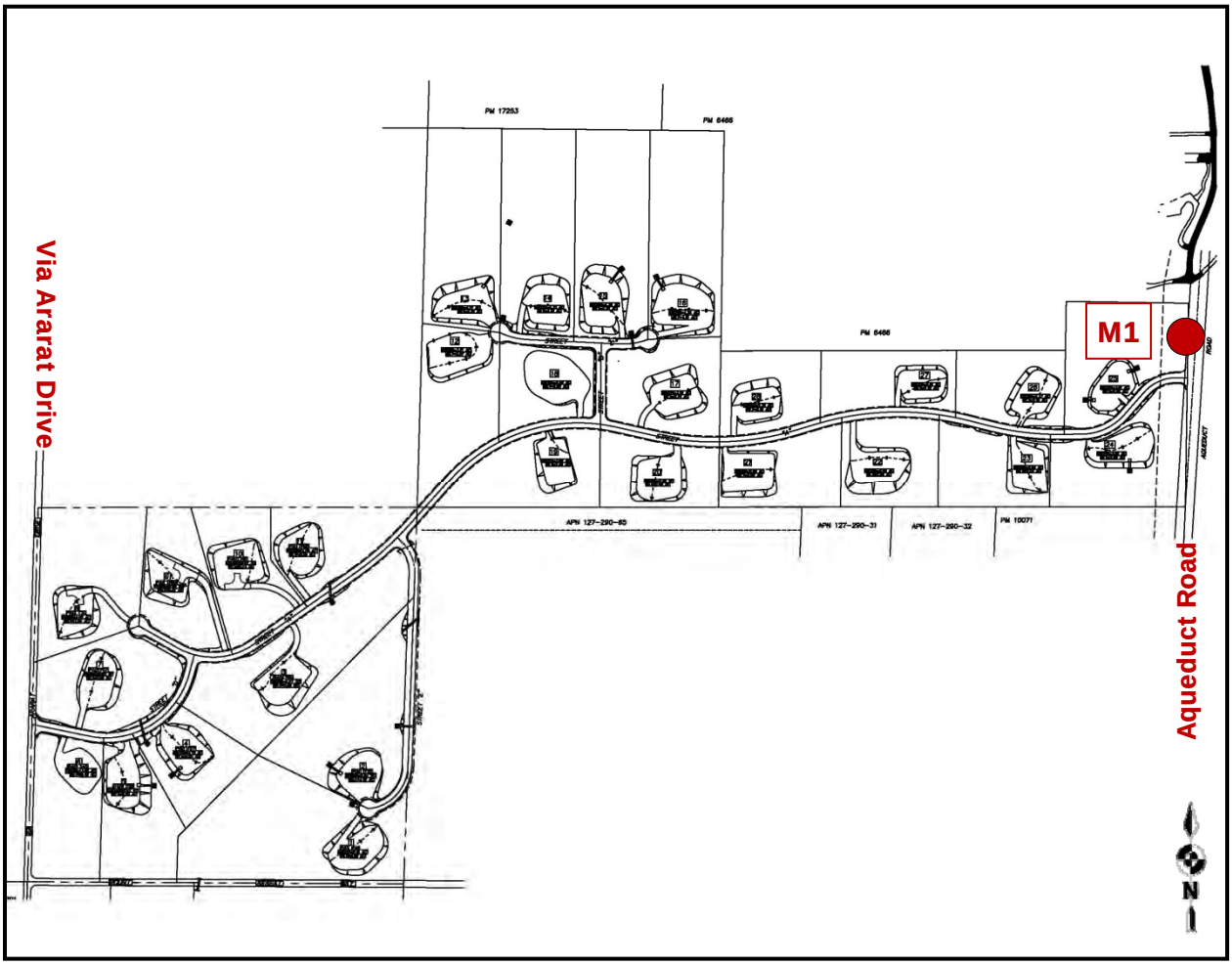
## Traffic Related Noise to On-Site Noise Sensitive Land Uses (NSLU)

Existing Conditions

To determine the existing noise environment and to assess potential noise impacts, measurements were taken along the eastern portion of the site along Aqueduct Road near proposed Lots 24 and 25. This was done to determine the worst case conditions at the proposed NSLU. The noise measurements were recorded on January 15, 2010 by Ldn Consulting, Inc. between approximately 1:15 p.m. and 1:30 p.m. The noise measurement location was determined based on site access and noise impact potential to the proposed residences. The noise monitoring location is provided graphically in Figure 3.

Noise measurements were taken using a Larson-Davis Model LxT Type 1 precision sound level meter, programmed, in "slow" mode, to record noise levels in "A" weighted form. The sound level meter and microphone were mounted on a tripod, five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 150.

**Figure 3: Ambient Noise Monitoring Location**




The results of the noise level measurements are presented in Table 12 below. The noise measurements were monitored for a time period of 15 minutes. The ambient Leq noise levels measured in the area of the project during the afternoon hour was found to be 46.0 dBA Leq at measurement location 1. The existing noise levels in the project area consisted primarily of residential activities and distant traffic on West Lilac Road.

**Table 12: Existing Noise Levels**

| Location | Time | One Hour Noise Levels (dBA) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Leq | Lmin | Lmax | L10 | L50 | L90 |
| ML1 | 1:15–1:30 p.m. | 46.0 | 31.2 | 61.3 | 47.1 | 42.1 | 39.4 |
| Source: Ldn Consulting, Inc. January 15, 2010 | | | | | | | |

Noise Modeling Software

The expected roadway noise levels from West Lilac Road, Aqueduct Road and Via Ararat Drive was projected using Caltrans Sound32 Traffic Noise Prediction Model. Sound32 is a peak hour based traffic noise prediction model. The results of this analysis are based on the California Vehicle Noise Emission Levels (CALVENO).

The Sound 32 model was calibrated in accordance with the FHWA Highway Traffic Noise Prediction Manual (Report RD-77-108) and in accordance with Caltrans Technical Noise Supplement (TeNS) section N-5400. The critical model input parameters, which determine the projected vehicular traffic noise levels, include vehicle travel speeds, the percentages of automobiles, medium trucks and heavy trucks in the roadway volume, the site conditions ("hard" or "soft") and the peak hour traffic volume.

The peak hour traffic volumes range between 6-12% of the average daily traffic (ADT) and 10% is generally acceptable for noise modeling purposes. The required coordinate information necessary for the Sound32 traffic noise prediction model input was taken from the preliminary site plans provided by Walsh Engineering and Surveying, Inc. received on September 3, 2009. To predict the future noise levels the preliminary site plans were used to identify the pad elevations, the roadway elevations, and the relationship between the noise source(s) and the NSLU areas. Traffic was consolidated into a single lane located along the centerline of each roadway. Longer roadway segments were subdivided into a series of adjoining segments for analysis. For this analysis, the roadway segments were extended a minimum of 300 feet beyond the observer locations. No grade correction or calibration factor (according to Caltrans Policy TAN-02-01 dated January 17, 2002) was included as part of the Sound32 traffic noise prediction model analysis.

To evaluate the potential noise impacts on the proposed development, outdoor observers were located in NSLU areas and placed five feet above the pad elevation and near the center of the rear yard a minimum of ten feet from the top/bottom of slope. All second floor observers located fifteen feet above the proposed pad elevation.

Build Out Noise Conditions

It is expected that the primary source of noise impacts to the project site will occur from traffic noise along West Lilac Road, Aqueduct Road and Via Ararat Drive. To determine the future noise environment and impact potentials the Sound32 model was utilized. First and Second floor areas were modeled using hard site conditions to determine the worst-case future noise levels.

The Buildout scenario includes the future year 2030 traffic volume forecasts provided by the project's traffic study (*Source: Darnell & Associates, Inc. – Traffic Study for West Lilac Residential Subdivision (TM 5276)*). The future traffic along West Lilac Road is estimated to be 7,900 ADT. The future traffic along Aqueduct Road and Via Ararat Drive Road is anticipated to be 500 ADT in the year 2030 for both roadways. The future roadway parameters and inputs utilized in this analysis are provided in Table 13. To assess the peak hour traffic noise conditions for each roadway, 10% of the ADT was utilized. West Lilac Road is considered a Light Collector with a traffic design speed of 45 MPH and Aqueduct Road and Via Ararat Drive are residential collectors with a conservative traffic speed of 35 MPH. The future traffic noise model also utilizes a more conservative and typical County vehicle mix with more heavy trucks then observed for both roadways.

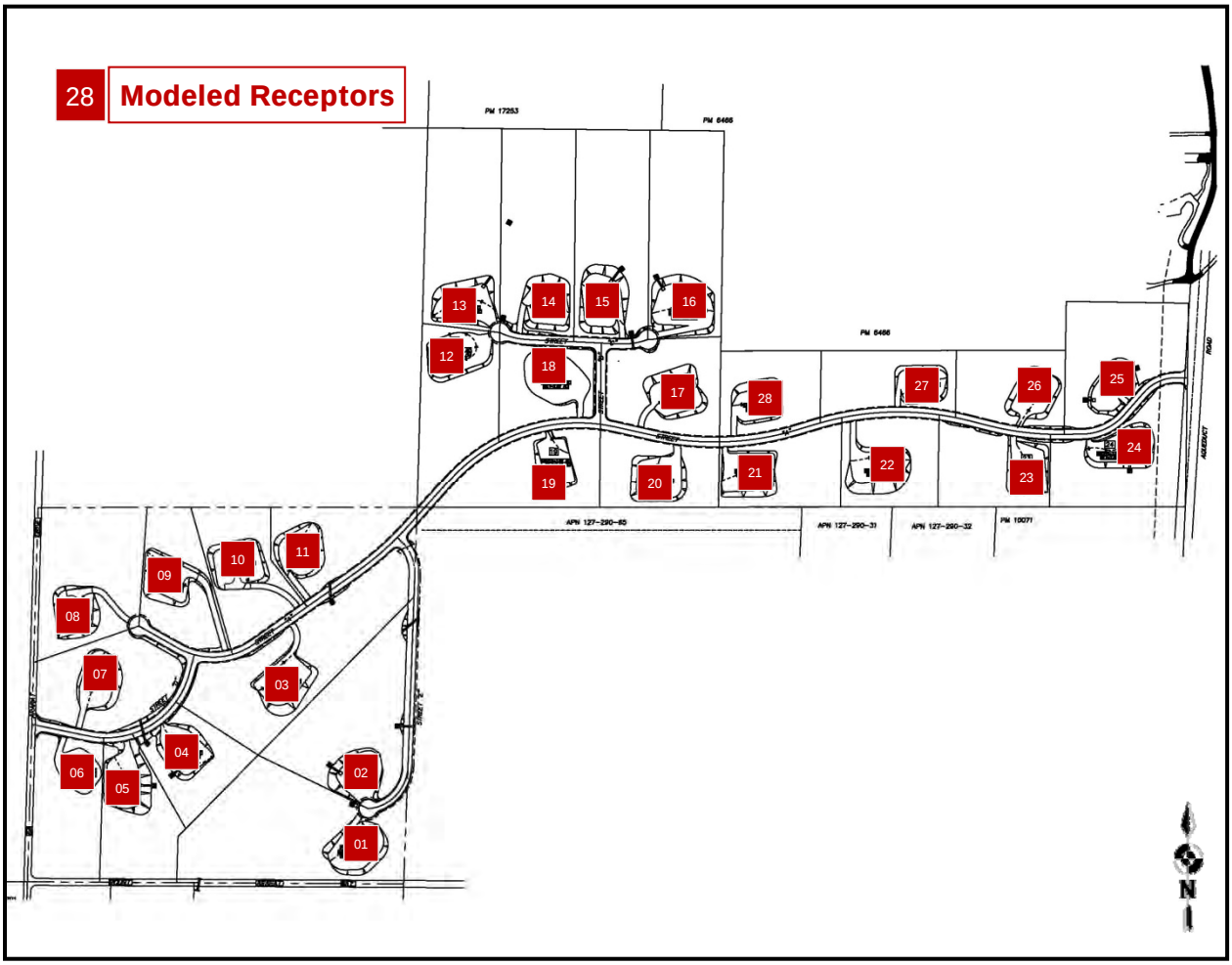
**Table 13: Buildout 2030 Traffic Parameters**

| Roadway | Average Daily Traffic (ADT) | Peak Hour Volume[1] | Modeled Speeds (MPH) | Vehicle Mix %[2] | | |
|---|---|---|---|---|---|---|
| | | | | Auto | Medium Trucks | Heavy Trucks |
| West Lilac Road | 7,900 | 790 | 45 | 95.0 | 3.0 | 2.0 |
| Aqueduct Road | 500 | 50 | 35 | 95.0 | 3.0 | 2.0 |
| Via Ararat Drive | 500 | 50 | 35 | 95.0 | 3.0 | 2.0 |

[1] 10% of the ADT.
[2] A conservative vehicle mixed was used to account for potential heavy trucks.

Modeled observer locations for each of the NSLU are presented in Figure 4. It was determined form the specific analysis that the NSLU of all lots will comply with the County of San Diego 60 dBA CNEL exterior noise standard. This is due to the existing topography, proposed grading on the pads, steep slopes, and the off-set in elevation and distance between the roadway and the proposed pads. Therefore, no impacts are anticipated and no mitigation is required. The results of the specific noise modeling are provided in Table 14 below. The Sound32 unmitigated first floor and second floor input and output files for future year 2030 conditions are provided in Attachment B.

**Figure 4: Modeled NSLU Receptor Locations**



## Table 14: Future Exterior Noise Levels

| Receptor Number | Receptor Location (Lot #) | Receptor Elevation (Feet)[1] | Unmitigated Outdoor Noise Level (dBA CNEL)[2] | Second Floor Façade Noise Levels (dBA CNEL)[3] |
|---|---|---|---|---|
| 1 | 1 | 750 | 44.0 | 44.0 |
| 2 | 2 | 740 | 44.7 | 44.7 |
| 3 | 3 | 745 | 45.7 | 45.7 |
| 4 | 4 | 732 | 46.0 | 46.0 |
| 5 | 5 | 740 | 47.0 | 47.0 |
| 6 | 6 | 750 | 49.4 | 49.4 |
| 7 | 7 | 752 | 48.8 | 48.8 |
| 8 | 8 | 775 | 50.8 | 50.7 |
| 9 | 9 | 785 | 47.6 | 47.6 |
| 10 | 10 | 785 | 47.0 | 47.0 |
| 11 | 11 | 765 | 47.1 | 47.1 |
| 12 | 12 | 815 | 49.4 | 49.4 |
| 13 | 13 | 810 | 50.2 | 50.2 |
| 14 | 14 | 780 | 50.2 | 50.2 |
| 15 | 15 | 775 | 50.3 | 50.3 |
| 16 | 16 | 765 | 50.0 | 50.0 |
| 17 | 17 | 805 | 48.6 | 48.6 |
| 18 | 18 | 810 | 49.1 | 49.1 |
| 19 | 19 | 790 | 47.8 | 47.8 |
| 20 | 20 | 820 | 47.4 | 47.4 |
| 21 | 21 | 825 | 47.4 | 47.4 |
| 22 | 22 | 830 | 47.3 | 47.3 |
| 23 | 23 | 865 | 47.3 | 47.3 |
| 24 | 24 | 870 | 50.4 | 50.3 |
| 25 | 25 | 885 | 49.6 | 49.6 |
| 26 | 26 | 865 | 48.3 | 48.3 |
| 27 | 27 | 830 | 48.2 | 48.2 |
| 28 | 28 | 815 | 48.3 | 48.3 |

[1] Receptor Elevation is 5-feet above the Pad Elevation
[2] **No** Exterior Mitigation is required per County Guidelines
[3] **No** Interior Noise Study required per County Guidelines

## Conclusions

Construction Operations

Most of the internal roadways grading operations are located more than 200-feet from the project boundaries with the exception of the proposed roadway located along the south eastern property line, near the intersection of Mr. Ararat Road and Mt. Ararat Lane. This proposed roadway provides access to proposed Lots 1 and 2 and the property to the east of this property line and proposed roadway is unoccupied. According to the County Noise Ordinance Section 36.409 (c), the 75 dBA threshold pertains to a property having a legal dwelling unit and therefore the property to the east is exempt from the noise levels. The nearest legal dwelling unit to the east is over 1,000 feet and to the south is more than 250-feet from the end of the roadway. Therefore no impacts are anticipated from the grading operations of the internal project's roadways.

If the project is mass graded in one Phase or two Phases the equipment is anticipated to be spread out over the entire site; some equipment may be operating at or near the property line while the rest of the equipment may be located more than 300-feet from the same property line. At a distance as close as 160-feet from the nearest property line the point source noise reduction from construction activities is 10.1 dBA and will comply with the County's 75 dBA standard.

If the project is sold as individual lots and graded separately the nearest proposed residential property lines are located at least 80 feet and the existing occupied property lines are located more than 100-feet from the grading operations for each lot. It was determined, based on the proposed grading operations for each lot that at a distance of 80-feet noise levels would be below the County's 75 dBA threshold and no noise impacts will occur.

No rock crushing or blasting is required during any of the grading operations for the project site. Therefore no impulsive noise impacts are anticipated to occur.

Off-Site Roadway Noise Increases

The project does not create a direct impact of more than 3.0 dBA CNEL on any roadway segment and no cumulative noise increases of 3 dBA CNEL or more were found. Therefore, the project's direct and cumulative contributions to off-site roadway noise

increases will not cause any significant impacts to any existing or future noise sensitive land uses.

On-Site Noise Analysis

This noise study has been completed to determine the noise impacts associated with the development of the proposed West Lilac Residential (TM 5276) project. The results of this analysis indicate that future vehicle noise from West Lilac Road, Aqueduct Road and Via Ararat Drive are the principal sources of community noise that could impact the site. However, due to the distance separation, intervening topography and the low traffic volumes the future noise levels were found to comply with the County's 60 dBA CNEL threshold for all proposed lots. Therefore no impacts are anticipated and no mitigation measures are required. Additionally, no second floor areas were found to be above the 60 dBA CNEL threshold. Therefore an interior noise assessment will not be required for this project prior to the approval of building plan permits.

If you have any questions, please contact me directly at (760) 473-1253.

Sincerely,
**Ldn Consulting, Inc.**

Jeremy Louden
Principal

## ATTACHMENTS

Attachment A: JT Kruer Construction Activities
Attachment B: S32 Future Unmitigated Buildout Noise Modeling

# ATTACHMENT A

JT KRUER CONSTRUCTION ACTIVITIES

J.T. KRUER & COMPANY

San Diego Office
P.O. Box 923 | 18754 Aliso Canyon Road | Rancho Santa Fe, CA 92067
Phone (858) 756-7320 | Fax (858) 756-7324 | www.jtkruerco.com

# WEST LILAC SUBDIVISION / 28 LOTS

# BONSALL, CA

## DAILY TRIP CALCULATIONS

## BASED ON CONSTRUCTION ACTIVITY


**Prepared For:**

**Walsh Engineering & Surveying**
**1870 Cordell Court, Ste. 102**
**El Cajon, CA 92020**

**November 25, 2008**

J.T. KRUER & COMPANY

San Diego Office
P.O. Box 923 | 18754 Aliso Canyon Road | Rancho Santa Fe, CA 92067
Phone (858) 756-7320 | Fax (858) 756-7324 | www.jtkruerco.com

November 25, 2008

Mr. Larry Walsh
Walsh Engineering & Surveying, Inc.
1870 Cordell Court, Ste. 102
El Cajon, CA 92020

Reference: **The West Lilac Subdivision / Bonsall, CA**

Subject: **Daily Trip Calculations based on Construction Activity**

Dear Mr. Walsh:

Based on our experience with Projects of similar scope and character, the attached spread sheets depict the typical sequence and work-force population one could expect to be generated by the development and build out of this Project.

There has been consideration given to the labor force, supervision, support professionals and import of material to the Site. The individual spread sheets delineate the activities by trade reference and do not consider float time or the typical over-lap between trade activities.

For the purpose of this analysis, the overall schedule for the completion of the site improvements is 72 working days and each house construction cycle represents 100 working days. It would be our recommendation to assign an over-lap of 20% of the total schedule, which would put the completion of the site improvements and the first cycle of house construction (5 Units) at approximately 138 working days.

**Statistical Summary:**

**Site Development / 72 Working Days ..... Average Daily Trips – 15**
**House Construction / 100 Working Days per Cycle ..... Average Daily Trips – 27**
**Site Development + 1 House Construction Cycle / 138 Working Days..... Average Daily Trips – 27**

- **An Average Daily Trip is a "Round Trip", which is calculated as traveling to the Project and returning to the point of origin.**

Thank you again for the opportunity to be of service
Sincerely,

Jonathan T. Kruer, Pres.

**DOCUMENTS, RESOURCES, & EXHIBITS UTILIZED:** Preliminary Grading Plan, Sheets 1 through 4, prepared by Walsh Engineering & Surveying, received by J.T. Kruer & Co. on November 20, 2008.

# West Lilac - 28 Lot Sbdivision
## Labor Activities / Daily Trips
## Support Operations / House Construction

**J.T. Kruer & Co.**
**11/25/08, JTK**

| Survey* | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Labor Type | Quantity | | | |
| 2 Man Survey Crew | 2 | 2 | Duration / Days | Total Trips |
| | | 2 | 20 | 40 |

| Geotechnical* | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Labor Type | Quantity | | | |
| Soils Technician w/Pick-up | 1 | 1 | Duration / Days | Total Trips |
| | | 1 | 10 | 10 |

| Management* | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Labor Type | Quantity | | | |
| Construction Manager w/ Pi | 1 | 1.5 | Duration / Days | Total Trips |
| | | 1.5 | 100 | 150 |
| | | | Total Days | |
| TOTAL TRIPS FOR SUPPORT OPERATIONS | | | 130 | 200 |
| | | Average Trips / Day | | 1.5 |

* The production is based on 5 Houses per 5 Month Construction Cycle. This is a typical constraints, based on sales absortption and construction financing requirements.

* Based on 28 Units this schedule will cycle approximately 5.5 times.

| Finish, Flat Work, Yards | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Equipment Model / Labor Type | Equipment | | | |
| Foreman w/ Pick-up Truck | 1 | 1 | | |
| Bobcat | 2 | 2 | | |
| Dump Truck | 1 | 1 | | |
| 2,000 Gal Water Truck | 1 | 1 | | |
| Vibratory Compactor | 1 | 1 | | |
| Tradesmen | 10 | 10 | | |
| Laborer | 12 | 12 | Duration / Days | Total Trips |
| | | 28 | 20 | 560 |
| | | | Total Days | |
| TOTAL TRIPS FOR HOUSE OPERATIONS | | | 100 | 2,520 |
| | | Average Trips / Day | | 25 |

* The production is based on 5 Houses per 5 Month Construction Cycle. This is a typical constraints, based on sales absortption and construction financing requirements.

* Based on 28 Units this schedule will cycle approximately 5.5 times.

# West Lilac - 28 Lot Sbdivision
## Labor Activities / Daily Trips
## House Construction
**J.T. Kruer & Co.**
**11/25/08, JTK**

| Foundations | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Equipment Model / Labor Type | Equipment | | | |
| Foreman w/ Pick-up Truck | 1 | 1 | | |
| Concrete Pump Truck | 1 | 1 | | |
| Material Delivery | 6 | 6 | | |
| Laborer | 9 | 9 | Duration / Days | Total Trips |
| | | 17 | 15 | 255 |

| Framing & Structural | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Equipment Model / Labor Type | Equipment | | | |
| Foreman w/ Pick-up Truck | 2 | 2 | | |
| Tool Trucks | 2 | 2 | | |
| Material Delivery | 2 | 2 | | |
| Hi-Lo Lift | 1 | 1 | | |
| Carpenter | 12 | 12 | | |
| Laborer | 4 | 4 | Duration / Days | Total Trips |
| | | 23 | 30 | 690 |

| Electrical, Plumbing, Mech | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Equipment Model / Labor Type | Equipment | | | |
| Tool Trucks | 2 | 2 | | |
| Material Delivery | 2 | 2 | | |
| Hi-Lo Lift | 1 | 1 | | |
| Tradesmen | 15 | 15 | | |
| Laborer | 9 | 9 | Duration / Days | Total Trips |
| | | 29 | 35 | 1,015 |

# West Lilac - 28 Lot Sbdivision
## Labor Activities / Daily Trips
## Support Operations / Site Work
**J.T. Kruer & Co.**
**11/25/08, JTK**

| Survey* | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Labor Type | Quantity | | | |
| 2 Man Survey Crew | 2 | 2 | Duration / Days | Total Trips |
| | | 2 | 36 | 72 |

*Note: Survey Crews present onsite only 25-30% of Project Duration.

| Geotechnical* | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Labor Type | Quantity | | | |
| Soils Technician w/Pick-up Truck | 1 | 1 | Duration / Days | Total Trips |
| | | 1 | 45 | 45 |

*Note: Soils Technicians are present during the grading, underground

| Management* | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Labor Type | Quantity | | | |
| Construction Manager w/ Pick-up Truck | 1 | 1.5 | Duration / Days | Total Trips |
| | | 1.5 | 72 | 108 |
| | | | Total Days | |
| TOTAL TRIPS FOR SUPPORT OPERATIONS | | | 153 | 225 |
| | | Average Trips / Day | | 1.5 |

*Note: Construction Manager present through all Site Development operations. One Operator should be counted for each piece of equipment listed. Laborers, Grade Checkers and Foremen are listed separately in each spread.

# West Lilac - 28 Lot Sbdivision

## Labor Activities / Daily Trips

## Landscaping Operations

**J.T. Kruer & Co.**

**11/25/08, JTK**

| Irrigation / Planting* | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Equipment Model / Labor Type | Quantity | | | |
| Skiploader | 1 | 1 | | |
| Backhoe | 1 | 1 | | |
| Ditchwitch | 2 | 2 | | |
| 2,000 Gal Water Truck | 1 | 1 | | |
| Foreman w/ Pick-up Truck | 1 | 1 | | |
| Laborer | 8 | 8 | | |
| Material Delivery | 1 | 1 | Duration / Days | Total Trips |
| | | 15 | 18 | 270 |
| | | | Total Days | |
| TOTAL TRIPS FOR LANDSCAPING OPERATIONS | | | 18 | 270 |
| | | Average Trips / Day | | 15 |

*Notes: Material and Plant Deliveries throughout the operation. One Operator should be counted for each piece of equipment listed. Laborers, Grade Checkers and Foremen are listed separately in each spread.

# West Lilac - 28 Lot Sbdivision
## Labor Activities / Daily Trips
## Surface Improvement Operations

**J.T. Kruer & Co.**
**11/25/08, JTK**

| Street Improvements - Balancing / Base | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Equipment Model / Labor Type | Quantity | | | |
| 14H Blade (Motor Grader) | 1 | 1 | | |
| 623 Scraper | 2 | 2 | | |
| Skip Loader | 1 | 1 | | |
| Vibratory Roller | 2 | 2 | | |
| 2,000 Gal Water Truck | 1 | 1 | | |
| Foreman w/Pick-up Truck | 1 | 1 | | |
| Grade Checker | 1 | 1 | | |
| Laborer | 1 | 1 | | |
| Laborer | 1 | 1 | | |
| Material Delivery | 4 | 16 | Duration / Days | Total Trips |
| | | 27 | 6 | 162 |

| Street Improv - Asphalt Paving & Dyke | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Equipment Model / Labor Type | Quantity | | | |
| Paving Machine | 1 | 1 | | |
| Skid Loader | 1 | 1 | | |
| Roller | 2 | 2 | | |
| Foreman w/ Pick-up Truck | 1 | 1 | | |
| Laborer | 4 | 4 | | |
| Material Delivery | 4 | 32 | Duration / Days | Total Trips |
| | | 41 | 4 | 164 |
| | | | Total Days | |
| TOTAL TRIPS FOR SURFACE IMPROV OPERATIONS | | | 10 | 326 |
| | | Average Trips / Day | | 33 |

*Notes. Material Deliveries of Aggregate Base and Asphalt will typically involve 10-15 trucks per day averaging 6 loads per day per truck. Concrete Deliveries will generally average 20 per day One Operator should be counted for each piece of equipment listed. Laborers, Grade Checkers and Foremen are listed separately in each spread.

# West Lilac - 28 Lot Sbdivision
## Labor Activities / Daily Trips
## Dry Utility Operations
**J.T. Kruer & Co.**
**11/26/08, JTK**

| Dry Utilities - Conduit Installation | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Equipment Model / Labor Type | Quantity | | | |
| 446B Backhoe | 2 | 2 | | |
| Foreman w/ Pick-up Truck | 1 | 1 | | |
| 950 Loader | 1 | 1 | | |
| 2000 Gal WaterTruck | 1 | 1 | | |
| Laborer | 4 | 4 | | |
| Material Delivery | 1 | 1 | Duration / Days | Total Trips |
| | | 10 | 9 | 90 |

| Dry Utilities - Concrete Products | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Equipment Model / Labor Type | Quantity | | | |
| 446B Backhoe w/Compaction Wheel | 1 | 1 | | |
| Foreman w/ Pick-up Truck | 1 | 1 | | |
| Laborer | 2 | 2 | | |
| Material Delivery | 1 | 1 | Duration / Days | Total Trips |
| | | 5 | 2 | 10 |
| | | | Total Days | |
| TOTAL TRIPS FOR DRY UTILITY OPERATIONS | | | 11 | 100 |
| | | Average Trips / Day | | 9 |

*Note: Conduit, Vaults and Material Deliveries throughout the operations. One Operator should be counted for each piece of equipment listed. Laborers, Grade Checkers and Foremen are listed separately in each spread.

# West Lilac - 28 Lot Sbdivision
## Labor Activities / Daily Trips
## Wet Utility Operations
**J.T. Kruer & Co.**
**11/25/08, JTK**

| Wet Utilities - Pipe Installation* | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Equipment Model / Labor Type | Quantity | | | |
| 345 Excavator | 1 | 1 | | |
| 235 Excavator with Compaction Wheel | 1 | 1 | | |
| 966E Loader | 1 | 1 | | |
| Rubber Tire Backhoe | 1 | 1 | | |
| 2,000 Gal Water Truck | 1 | 1 | | |
| Crew Truck | 1 | 1 | | |
| Foreman w/Pick-up Truck | 1 | 1 | | |
| Grade Checker | 1 | 1 | | |
| Pipe Layer (Labor) | 2 | 2 | | |
| Laborer | 2 | 2 | | |
| Material Delivery | 1 | 0.5 | Duration / Days | Total Trips |
| | | 12.5 | 11 | 137.5 |

| Wet Utilities - Structure Installation* | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Equipment Model / Labor Type | Quantity | | | |
| Crew Truck | 2 | 2 | | |
| Carpenters | 4 | 4 | | |
| Material Delivery | 1 | 1 | Duration / Days | Total Trips |
| | | 7 | 8 | 56 |
| | | | Total Days | |
| **TOTAL TRIPS FOR WET UTILITY OPERATIONS** | | | 19 | 193.5 |
| | | Average Trips / Day | | 10 |

*Notes: Pipe, Mannole and Material Deliveries throughout the operation. One Operator should be counted for each piece of equipment listed. Laborers, Grade Checkers and Foremen are listed separately in each spread.

# West Lilac - 28 Lot Sbdivision
## Labor Activities / Daily Trips
## Grading Operations

J.T. Kruer & Co.
11/25/08, JTK

| Clear & Grub | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Equipment Model / Labor Type | Equipment | | | |
| D-8R Dozer | 1 | 1 | | |
| 966 Loader | 1 | 1 | | |
| High Side End Dumps | 4 | 32 | | |
| Laborer | 2 | 2 | Duration / Days | Total Trips |
| | | 36 | 8 | 288 |

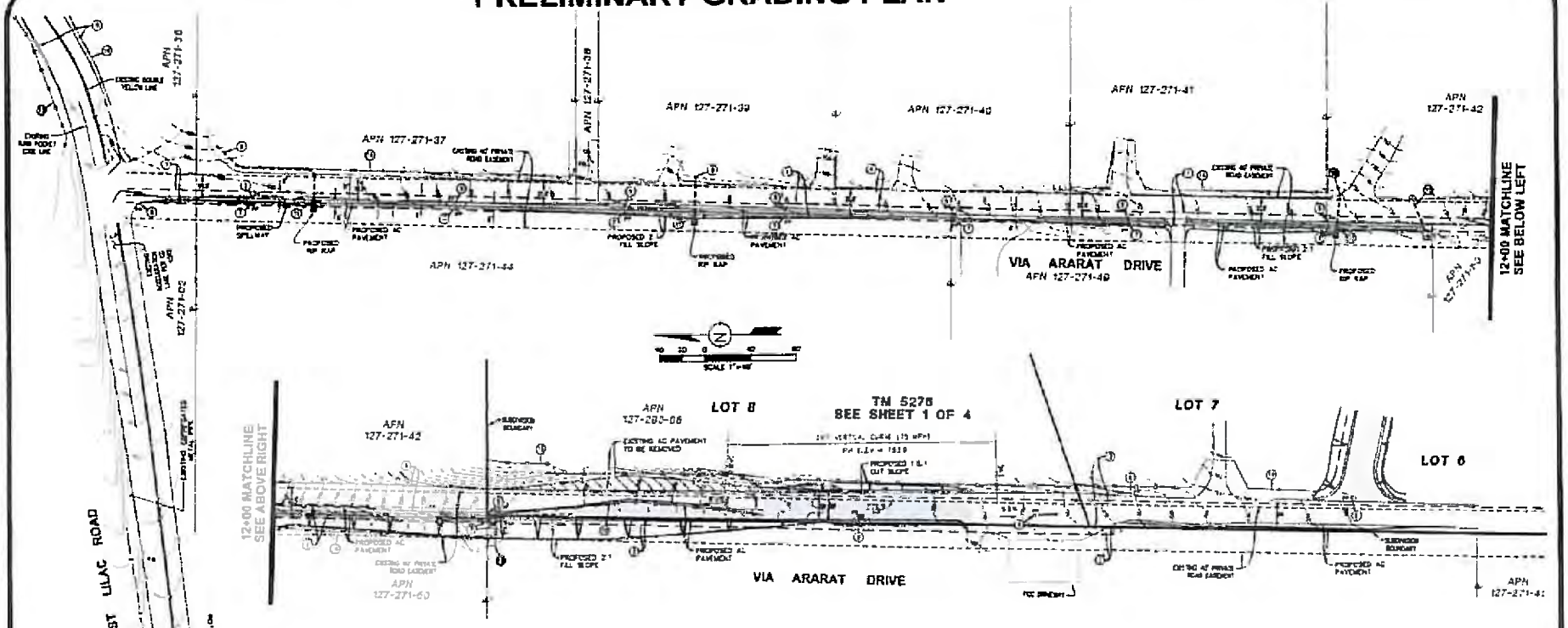
| Remedial & Mass Ex - Scrapers* | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Equipment Model / Labor Type | Equipment | | | |
| 657 Scraper | 6 | 6 | | |
| D-8 Dozer | 2 | 2 | | |
| 834B Rubber Tire Dozer | 1 | 1 | | |
| 16G Blade (Motor Grader) | 1 | 1 | | |
| 4,000 Gal Water Truck | 2 | 2 | | |
| Foreman w/ Pick-up Truck | 1 | 1 | | |
| Grade Checker | 2 | 2 | | |
| Laborer | 1 | 1 | Duration / Days | Total Trips |
| | | 16 | 12 | 192 |

| Finish Grading | Labor / Operator | Round Trips / Day | | |
|---|---|---|---|---|
| Equipment Model / Labor Type | Equipment | | | |
| D-8R Dozer | 2 | 2 | | |
| 623 Scraper | 1 | 1 | | |
| 16G Blade (Motor Grader) | 1 | 1 | | |
| 4,000 Gal Water Truck | 2 | 2 | | |
| Vibratory Compactor | 1 | 1 | | |
| Foreman w/ Pick-up Truck | 1 | 1 | | |
| Grade Checker | 1 | 1 | Duration / Days | Total Trips |
| | | 9 | 11 | 99 |
| | | | Total Days | |
| TOTAL TRIPS FOR GRADING OPERATIONS | | | 31 | 579 |
| | | Average Trips / Day | | 19 |

* Rock may be encountered. No Soils information was provided for this Analysis.

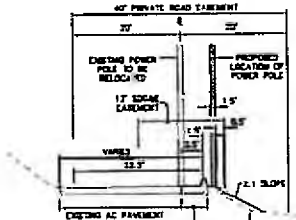
# PRELIMINARY GRADING PLAN

SHEET 4 OF 4

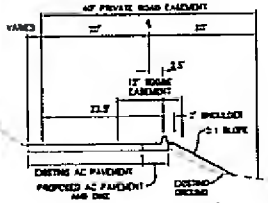



**LEGEND:**

1. EXISTING 12' SCENIC EASEMENT
2. EXISTING 8' SCENIC EASEMENT
3. EXISTING 25' SCENIC EASEMENT
4. EXISTING AC PAVEMENT
5. EXISTING POWER POLE TO BE RELOCATED
6. EXISTING POWER POLE TO BE REMOVED AND UTILITY LINES TO BE UNDERGROUNDED
7. PROPOSED LOCATION OF POWER POLE
8. EXISTING POWER POLE TO REMAIN
9. EXISTING 12" RCP TO REMAIN
10. EXISTING 12" RCP TO REMAIN
11. PROPOSED 6'-0" RCP AT 1% MIN
12. PROPOSED 6'-0" RCP AT 1% MIN
13. EXISTING WOOD FENCE TO REMAIN
14. EXISTING CHAINLINK FENCE TO REMAIN
15. EXISTING WOOD FENCE TO BE RELOCATED TO NEW EDGE OF PAVEMENT




VIA ARARAT DRIVE
TYPICAL SECTION
AT THE DAVY OFFICE POWER POLE LOCATIONS
NO SCALE




VIA ARARAT DRIVE
TYPICAL SECTION
@ BETWEEN POWER POLES
NO SCALE

NOTE:
THE EXISTING DITCH SLOPE VARIES BETWEEN A NORMAL DITCH AND A CONTINUOUS SLOPE TO ONE SIDE OR THE OTHER ALONG THE ENTIRE LENGTH OF THE ROAD. IN ORDER NOT TO DIVERT DRAINAGE, THE EXISTING DITCH SLOPE WILL BE MAINTAINED IN AREAS WHERE WIDENING IS PROPOSED.

**OWNER/SUBDIVIDER:**

JAMES D. PARKER, JR.
WEST LILAC FARMS II, LLC
369 STONERIDGE COURT
ROSEVILLE, CA 95661
1-530-373-3688

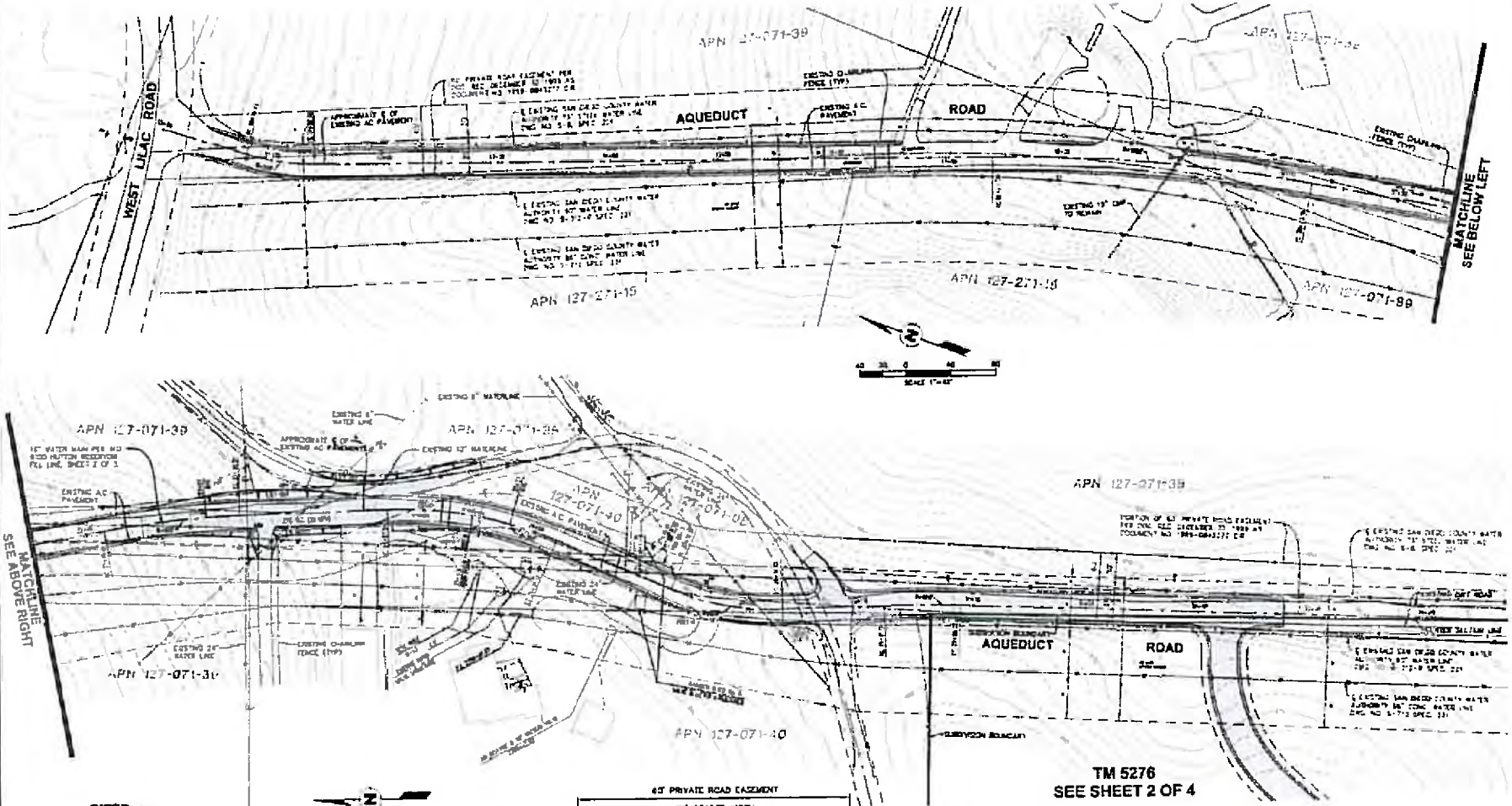
PREPARED BY:

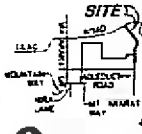
3/2/06

DATE

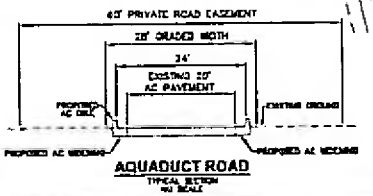
Welsh Engineering & Surveying, Inc.

# PRELIMINARY GRADING PLAN




NOTE:
THE EXISTING CROSS SLOPE VARIES BETWEEN A NORMAL CROWN AND A CONTINUOUS SLOPE TO ONE SIDE OR THE OTHER ALONG THE ENTIRE LENGTH OF THE ROAD. IN ORDER NOT TO IMPORT DRAINAGE, THE EXISTING CROSS SLOPE WILL BE MAINTAINED IN AREAS WHERE SECOND IS PROPOSED.



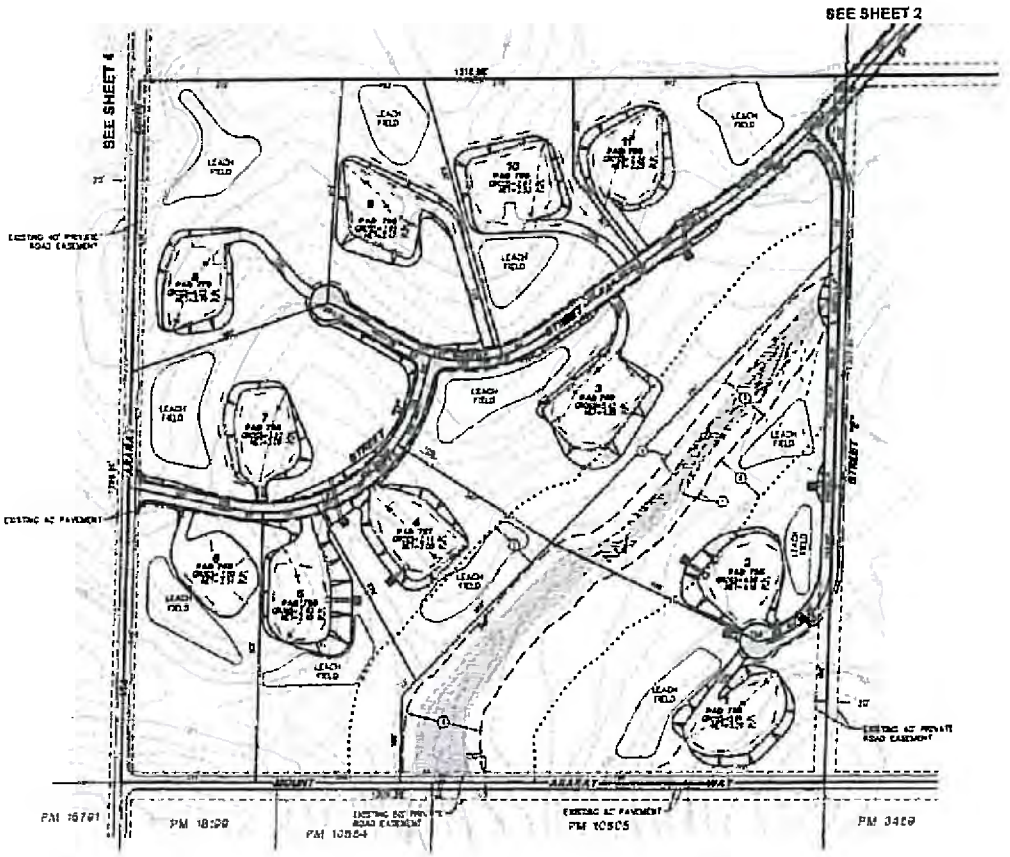

PREPARED BY

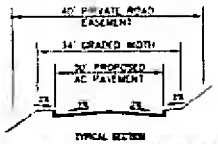
Laurence W. Walsh 3/2/06

LAURENCE W. WALSH RCE 46168 DATE

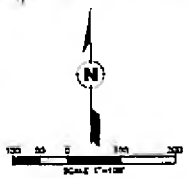
Walsh Engineering & Surveying, Inc.

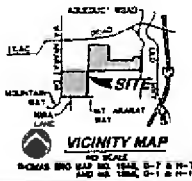
# PRELIMINARY GRADING PLAN




STREETS "A" - "E" (PRIVATE ROADS)
NO SCALE




VICINITY MAP
NO SCALE

LEGEND

- DISTURBED WETLANDS (HOLLAND CODE # 1200)
- ① 25' BUFFER
- ② PROPOSED 100' FIRE CLEARING OPEN SPACE EASEMENT
- ③ PROPOSED BIOLOGICAL OPEN SPACE EASEMENT

NOTE:
ALL EASEMENTS OF 25' IN WIDTH OR GREATER ARE SHOWN ON THIS PLAN

NOTE:
THIS PLAN IS PROVIDED TO ALLOW FOR FULL AND ADEQUATE DISCRETIONARY REVIEW OF A PROPOSED DEVELOPMENT PROJECT. THE PROPERTY OWNER ACKNOWLEDGES THAT ACCEPTANCE OR APPROVAL OF THIS PLAN DOES NOT CONSTITUTE AN APPROVAL TO PERFORM ANY GRADING SHOWN HEREON, AND AGREES TO OBTAIN A VALID GRADING PERMIT BEFORE COMMENCING SUCH ACTIVITY.

CUT/FILL= 33,000 C.Y. ± SHEET 1 ONLY (PLUS MINOR ROAD GRADING) THIS QUANTITY IS BASED ON 3,000 C.Y. PER LOT AVERAGE. ALL CUT & FILL SLOPES TO BE 2:1 RATIO

OWNER/SUBDIVIDER:

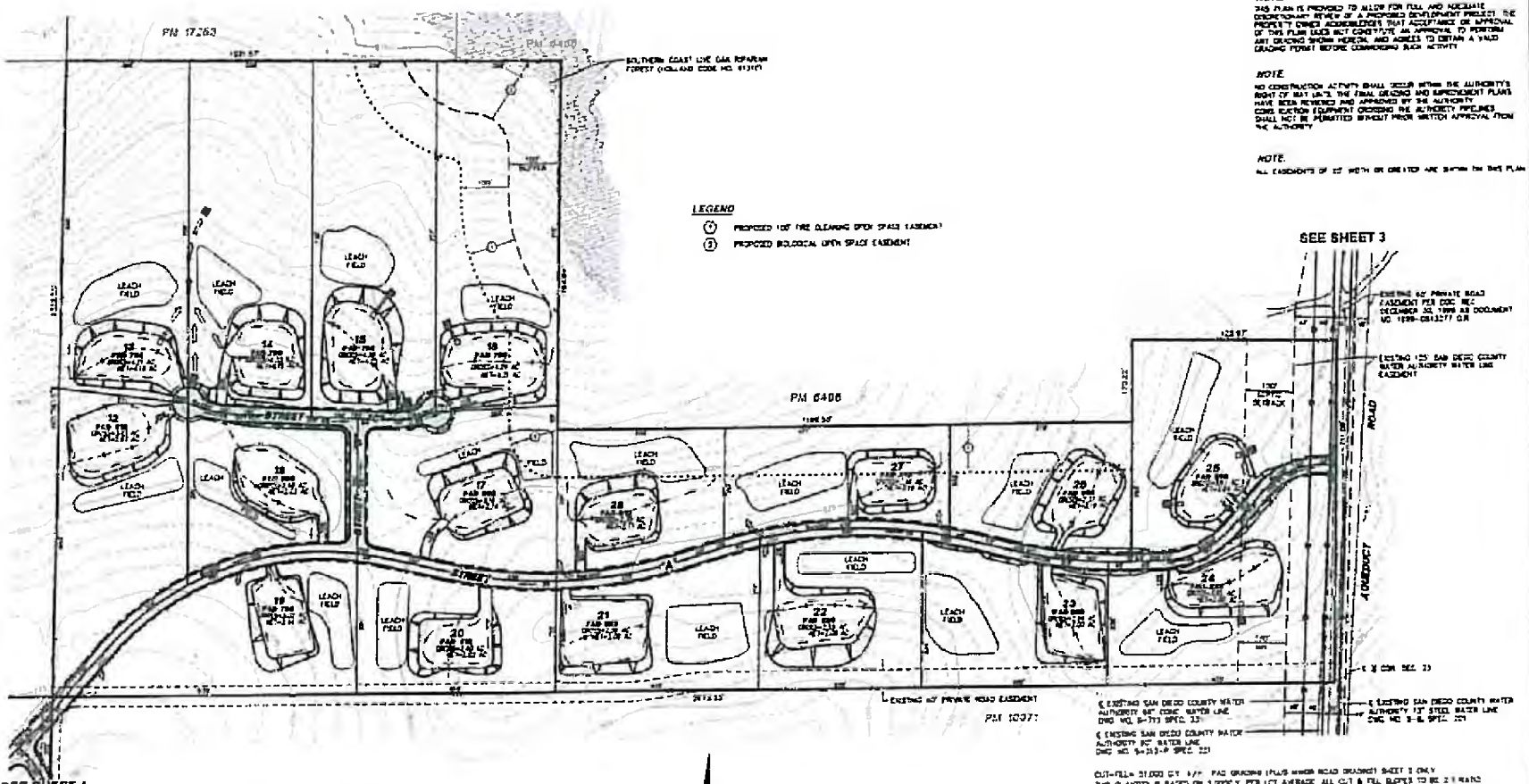
JAMES D. FAVERO, JR.
WEST LEAC FARMS II, LLC
249 STONECREEK COURT
STONECREEK VILLAGE, CA 91761
1-909-373-5225

PREPARED BY:

LAWRENCE W. WALSH — RCE 44974 — DATE

Walsh Engineering & Surveying, Inc.

# PRELIMINARY GRADING PLAN




NOTE

THIS PLAN IS PROVIDED TO ALLOW FOR FULL AND ADEQUATE DISCRETIONARY REVIEW OF A PROPOSED DEVELOPMENT PROJECT. THE PROPERTY OWNER ACKNOWLEDGES THAT ACCEPTANCE OR APPROVAL OF THIS PLAN DOES NOT CONSTITUTE AN APPROVAL TO PERFORM ANY GRADING SHOWN HEREON, AND AGREES TO OBTAIN A VALID GRADING PERMIT BEFORE COMMENCING SUCH ACTIVITY.

NOTE

NO CONSTRUCTION ACTIVITY SHALL OCCUR WITHIN THE AUTHORITY'S RIGHT OF WAY UNTIL THE FINAL GRADING AND IMPROVEMENT PLANS HAVE BEEN REVIEWED AND APPROVED BY THE AUTHORITY. CONSTRUCTION EQUIPMENT CROSSING THE AUTHORITY PIPELINES SHALL NOT BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL FROM THE AUTHORITY.

NOTE

ALL EASEMENTS OF 10' WIDTH OR GREATER ARE SHOWN ON THIS PLAN.

CUT=FILL= 31,000 CY +/- PAD GRADING (PLUS MINOR ROAD GRADING) SHEET 3 ONLY
THIS QUANTITY IS BASED ON 3,000CY PER LOT AVERAGE. ALL CUT & FILL SLOPES TO BE 2:1 MAX.

VICINITY MAP
NO SCALE
THOMAS BRO MAP NO. 1048, G-7 & H-7
AND NO. 1068, C-1 & H-1

STREETS "A" - "E" (PRIVATE ROADS)
NO SCALE

SCALE 1"=100'

OWNER/SUBDIVIDER
JAMES D. PARDEE, JR.
WEST LILAC FARMS II, LLC
2810 STONECREEK COURT
WESTLAKE VILLAGE, CA 91361
1-805-373-2500

PREPARED BY:
LAWRENCE W. WALSH RCE 34218 DATE
Wilson Engineering & Surveying, Inc.

# ATTACHMENT B

FUTURE NOISE MODEL INPUT AND OUTPUT FILES

09-48 TM 5276 Ground Level Unmitigated
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 750 , 45 , 24 , 45 , 16 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 47 , 35 , 2 , 35 , 1 , 35
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 47 , 35 , 2 , 35 , 1 , 35
L-West Lilac Road, 1
N,368.,3526,610,
N,1726.,3706,660,
N,4394.,4149,725,
L-Via Ararat Drive, 2
N,315.,-17,760,
N,326.,355,717,
N,349.,1125,783,
N,364.,1674,740,
L-Aqueduct Road, 3
N,4343.,1247,800,
N,4356.,1726,850,
N,4366.,2067,865,
N,4366.,2282,875,
N,4477.,2575,825,
R, 1 , 67 ,500
1469,260,750.,1
R, 2 , 67 ,500
1488,530,740.,2
R, 3 , 67 ,500
1220,840,745.,3
R, 4 , 67 ,500
876,605,732.,4
R, 5 , 67 ,500
662,474,740.,5
R, 6 , 67 ,500
504,532,750.,6
R, 7 , 67 ,500
573,884,752.,7
R, 8 , 67 ,500
483,1061,775.,8
R, 9 , 67 ,500
787,1235,785.,9
R, 10 , 67 ,500
1050,1266,785.,10
R, 11 , 67 ,500
1278,1334,765.,11
R, 12 , 67 ,500
1784,1993,815.,12
R, 13 , 67 ,500
1810,2160,810.,13
R, 14 , 67 ,500
2132,2180,780.,14
R, 15 , 67 ,500
2316,2204,775.,15
R, 16 , 67 ,500
2597,2179,765.,16
R, 17 , 67 ,500
2595,1851,805.,17
R, 18 , 67 ,500
2110,1922,810.,18
R, 19 , 67 ,500
2165,1580,790.,19
R, 20 , 67 ,500
2498,1512,820.,20
R, 21 , 67 ,500
2872,1579,825.,21

R, 22 , 67 ,500
3335,1603,830.,22
R, 23 , 67 ,500
3813,1558,865.,23
R, 24 , 67 ,500
4196,1672,870.,24
R, 25 , 67 ,500
4114,1925,885.,25
R, 26 , 67 ,500
3854,1877,865.,26
R, 27 , 67 ,500
3467,1884,830.,27
R, 28 , 67 ,500
2901,1830,815.,28
C,C

SOUND32 - RELEASE 07/30/91

TITLE:
09-48 TM 5276 Ground Level Unmitigated

BASED ON FHWA-RD-108 AND
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

| RECEIVER | LEQ |
|---|---|
| 1 | 44.0 |
| 2 | 44.7 |
| 3 | 45.7 |
| 4 | 46.0 |
| 5 | 47.0 |
| 6 | 49.4 |
| 7 | 48.8 |
| 8 | 50.8 |
| 9 | 47.6 |
| 10 | 47.0 |
| 11 | 47.1 |
| 12 | 49.4 |
| 13 | 50.2 |
| 14 | 50.2 |
| 15 | 50.3 |
| 16 | 50.0 |
| 17 | 48.6 |
| 18 | 49.1 |
| 19 | 47.8 |
| 20 | 47.4 |
| 21 | 47.4 |
| 22 | 47.3 |
| 23 | 47.3 |
| 24 | 50.4 |
| 25 | 49.6 |
| 26 | 48.3 |
| 27 | 48.2 |
| 28 | 48.3 |

09-85 TM 5498 Future Contours Second Level
09-48 TM 5276 Second Level Unmitigated
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 750 , 45 , 24 , 45 , 16 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 47 , 35 , 2 , 35 , 1 , 35
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 47 , 35 , 2 , 35 , 1 , 35
L-West Lilac Road, 1
N,368.,3526,610,
N,1726.,3706,660,
N,4394.,4149,725,
L-Via Ararat Drive, 2
N,315.,-17,760,
N,326.,355,717,
N,349.,1125,783,
N,364.,1674,740,
L-Aqueduct Road, 3
N,4343.,1247,800,
N,4356.,1726,850,
N,4366.,2067,865,
N,4366.,2282,875,
N,4477.,2575,825,
R, 1 , 67 ,500
1469,260,760.,1
R, 2 , 67 ,500
1488,530,750.,2
R, 3 , 67 ,500
1220,840,755.,3
R, 4 , 67 ,500
876,605,742.,4
R, 5 , 67 ,500
662,474,750.,5
R, 6 , 67 ,500
504,532,760.,6
R, 7 , 67 ,500
573,884,762.,7
R, 8 , 67 ,500
483,1061,785.,8
R, 9 , 67 ,500
787,1235,795.,9
R, 10 , 67 ,500
1050,1266,795.,10
R, 11 , 67 ,500
1278,1334,775.,11
R, 12 , 67 ,500
1784,1993,825.,12
R, 13 , 67 ,500
1810,2160,820.,13
R, 14 , 67 ,500
2132,2180,790.,14
R, 15 , 67 ,500
2316,2204,785.,15
R, 16 , 67 ,500
2597,2179,775.,16
R, 17 , 67 ,500
2595,1851,815.,17
R, 18 , 67 ,500
2110,1922,820.,18
R, 19 , 67 ,500
2165,1580,800.,19
R, 20 , 67 ,500
2498,1512,830.,20
R, 21 , 67 ,500
2872,1579,835.,21
R, 22 , 67 ,500
3335,1603,840.,22
R, 23 , 67 ,500
3813,1558,875.,23
R, 24 , 67 ,500
4196,1672,880.,24
R, 25 , 67 ,500
4114,1925,895.,25
R, 26 , 67 ,500
3854,1877,875.,26
R, 27 , 67 ,500

3467,1884,840.,27
R, 28 , 67 ,500
2901,1830,825.,28
C,C

SOUND32 - RELEASE 07/30/91

TITLE:
09-48 TM 5276 Second Level Unmitigated

BASED ON FHWA-RD-108 AND
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

| RECEIVER | LEQ |
|---|---|
| 1 | 44.0 |
| 2 | 44.7 |
| 3 | 45.7 |
| 4 | 46.0 |
| 5 | 47.0 |
| 6 | 49.4 |
| 7 | 48.8 |
| 8 | 50.7 |
| 9 | 47.6 |
| 10 | 47.0 |
| 11 | 47.1 |
| 12 | 49.4 |
| 13 | 50.2 |
| 14 | 50.2 |
| 15 | 50.3 |
| 16 | 50.0 |
| 17 | 48.6 |
| 18 | 49.1 |
| 19 | 47.8 |
| 20 | 47.4 |
| 21 | 47.4 |
| 22 | 47.3 |
| 23 | 47.3 |
| 24 | 50.3 |
| 25 | 49.6 |
| 26 | 48.3 |
| 27 | 48.2 |
| 28 | 48.3 |