Noise Analysis Report

Chula Vista Wash 'N Go

HMMH Project Number 309250
August 7, 2017

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Executive Summary

The purpose of this report is to assess the potential noise impacts of the Chula Vista Wash 'N Go project in the City of Chula Vista, California. The carwash will be located at 495 Telegraph Canyon Road in the City of Chula Vista, California. The location of the project is presented in Figure 1. The proposed project site plan is shown in Figure 2.

Figure 1. Location of the Project
Source: Map Image and Data © *ESRI 2017*

Figure 2. Proposed Project Site Plan
Sources: Gene Cipparone – Architect, Inc., Map Image and Data © *ESRI 2017*
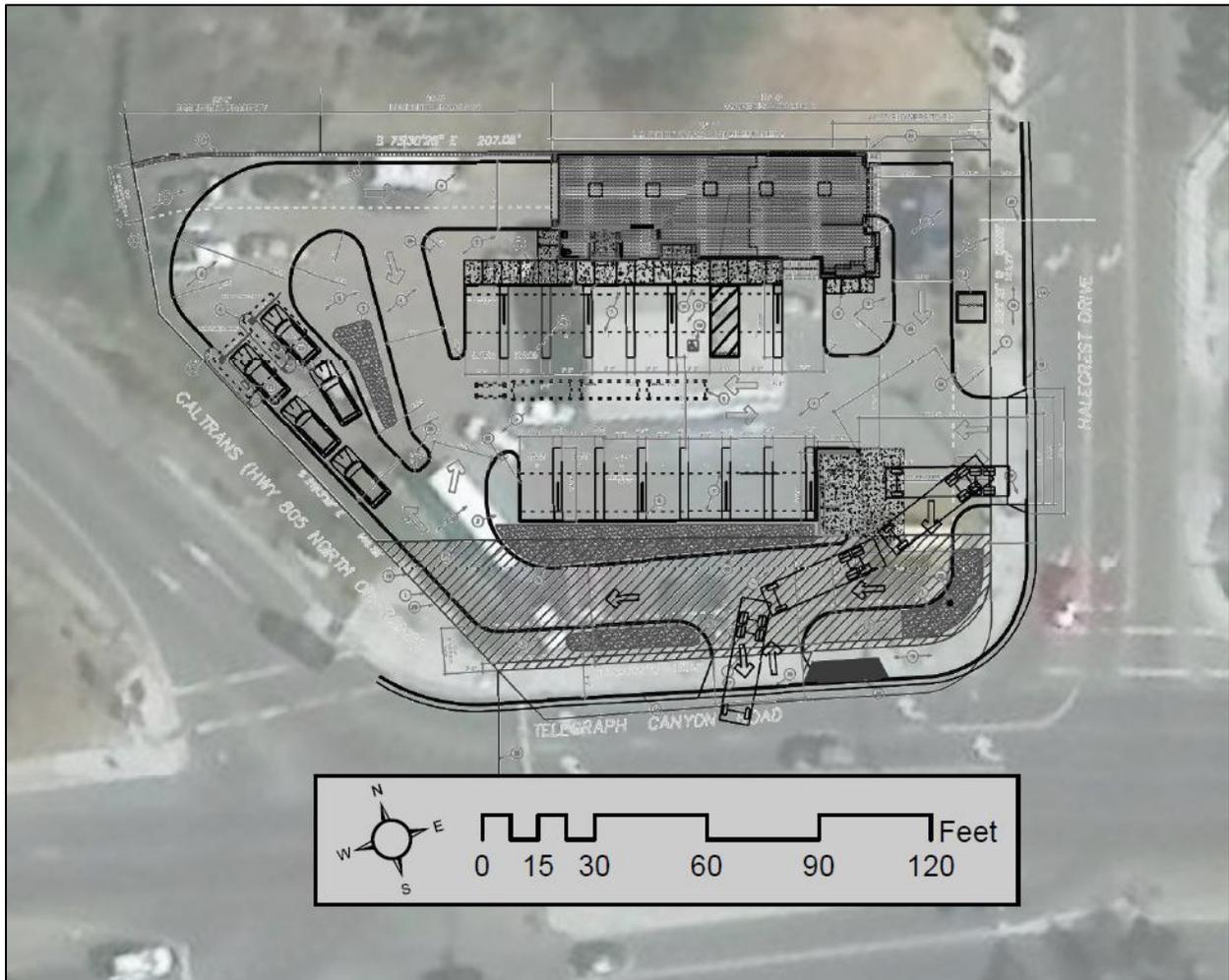
1 Noise Exposure Standards

1.1 City of Chula Vista's Noise Ordinance of the Municipal Code

Within City of Chula Vista's Municipal Code (Chapter 19- Planning and Zoning, Article 68 – Performance Standards and Noise Control, Section 30 – Exterior Noise Limits) it states noise standards for residential and commercial land use. The exterior noise levels for all residential (except multiple dwelling) and commercial are presented in Table 1. The noise standards shall apply to each property or portion of property substantially used for a particular type of land use reasonably similar to the land use types shown in Table 1. No person shall operate, or cause to be operated, any source of sound at any location within the city or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes the noise level to exceed the environmental and/or nuisance interpretation of the applicable limits give in Table 1. Environmental noise shall be measured by the equivalent sound level (Leq) for any hour. Nuisance noise shall be measured as a sound level not to be exceeded at any time. Sound levels by receiving land use shall be measured at the boundary or at any point within the boundary of the property affected.

The code also states corrections to exterior noise level limits. If the noise is continuous, the Leq for any hour will be represented by any lesser time period within that hour; noise measurements of a few minutes only will thus suffice. If the noise is intermittent, the Leq for any hour may be represented by a period typical of the operating cycle. Measurement should be made of a representative number of noisy/quiet periods. A measurement period of not less than 15 minutes is, however, strongly recommended when dealing with intermittent noise. In the event the alleged offensive noise, as judged by the enforcement officer, contains a steady, audible sound such as whine, screech, or hum or contains a repetitive impulsive noise such as hammering or riveting, the standard limits set forth in Table 1 shall be reduced by 5 dB. If the measured ambient noise level exceeds that permissible in Table 1, the allowable noise exposure standard shall be the ambient noise level. The ambient level shall be measured when the alleged noise violations source is not operating.

Table 1 – Exterior Noise Limits

Land Use	Weekday Time Period	Weekend Time Period	Noise Level (dBA)
Residential	7:00 a.m. to 10:00 p.m.	8:00 a.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	10:00 p.m. to 8:00 a.m.	45
Commercial	7:00 a.m. to 10:00 p.m.	8:00 a.m. to 10:00 p.m.	65
	10:00 p.m. to 7:00 a.m.	10:00 p.m. to 8:00 a.m.	60

2 Noise Measurement Survey

All of the information contained within this section of the report was provided to the client from BridgeNet International, who conducted the noise measurement survey on Thursday, July 28, 2016 from the hours of 7 a.m. to 9 p.m., which according to the client are the proposed operating hours of the carwash. The goal of the noise measurement survey was to determine the existing ambient noise environment. Noise measurements recorded one second A-weighted noise values at three locations. The noise measurement locations are given in Figure 3.

The sound level meters used to measure the noise levels were 01dB FUSION sound level meters. The microphones used were 01dB-Metravib 1/2" condenser microphones. The equipment used meets the American National Standards Institute (ANSI) S1.4 specification for a Type 1 precision sound level meter. The sound level meters were calibrated before and after the tests with a Brüel & Kjær Type 4231 sound level calibrator with calibration traceable to the National Institute of Standards and Technology (NIST).

The noise measurement locations were selected for their proximity to the adjacent residential and commercial land uses. The sound level meters at these locations were placed at a height of 5 feet.

Figure 3. Noise Measurement Locations
Source: Map Image and Data © *ESRI 2017*

2.1 Noise Measurement Results

The noise measurement survey results for Location 1 are presented in Table 2. The table lists the resulting minimum (LMin), maximum (LMax) and average (Leq) noise values in terms of dBA for each hour of the measurement. The noise at this location was dominated by transportation noise on the 805 Freeway and the 805 Freeway on-ramp. Location 1 is representative of the residences at 484 and 490 Hale Street.

Table 2 – Noise Measurement Results for Location 1

Date	Start Time	End Time	Minimum Noise Level (LMin dBA)	Maximum Noise Level (LMax dBA)	Average Noise Level (Leq dBA)
7/28/2016	7 a.m.	8 a.m.	61.2	85.0	68.1
	8 a.m.	9 a.m.	61.8	86.1	68.3
	9 a.m.	10 a.m.	60.7	88.6	68.7
	10 a.m.	11 a.m.	60.8	90.7	68.2
	11 a.m.	12 p.m.	61.4	83.1	68.1
	12 p.m.	1 p.m.	61.3	95.4	69.1
	1 p.m.	2 p.m.	62.2	88.3	68.5
	2 p.m.	3 p.m.	62.2	88.8	69.2
	3 p.m.	4 p.m.	62.2	90.9	69.4
	4 p.m.	5 p.m.	62.7	81.6	68.3
	5 p.m.	6 p.m.	61.0	92.7	70.4
	6 p.m.	7 p.m.	61.6	89.0	69.4
	7 p.m.	8 p.m.	60.2	91.0	67.8
	8 p.m.	9 p.m.	59.1	85.1	66.9

The noise measurement survey results for Location 2 are presented in Table 3. The table lists the resulting minimum (LMin), maximum (LMax) and average (Leq) noise values in terms of dBA for each hour of the measurement. The noise at this location was dominated by transportation noise on the 805 Freeway and the 805 Freeway on-ramp, and Halecrest Drive. Location 2 is representative of the commercial lot at 498 Hale Street.

Table 3 – Noise Measurement Results for Location 2

Date	Start Time	End Time	Minimum Noise Level (LMin dBA)	Maximum Noise Level (LMax dBA)	Average Noise Level (Leq dBA)
7/28/2016	7 a.m.	8 a.m.	61.0	88.8	67.7
	8 a.m.	9 a.m.	62.0	86.0	67.6
	9 a.m.	10 a.m.	59.6	87.4	67.7
	10 a.m.	11 a.m.	61.8	94.8	68.3
	11 a.m.	12 p.m.	61.9	81.6	67.4
	12 p.m.	1 p.m.	60.9	91.4	67.7
	1 p.m.	2 p.m.	62.1	83.3	67.4
	2 p.m.	3 p.m.	62.6	86.0	69.1
	3 p.m.	4 p.m.	62.6	81.1	67.8
	4 p.m.	5 p.m.	62.5	81.2	68.3
	5 p.m.	6 p.m.	61.3	92.2	69.5
	6 p.m.	7 p.m.	62.0	86.2	68.1
	7 p.m.	8 p.m.	60.6	85.1	67.1
	8 p.m.	9 p.m.	60.7	87.5	68.3

The noise measurement survey results for Location 3 are presented in Table 4. The table lists the resulting minimum (LMin), maximum (LMax) and average (Leq) noise values in terms of dBA for each hour of the measurement. The noise at this location was dominated by transportation noise on the Halecrest Drive, 805 Freeway, and the 805 Freeway on-ramp. Location 3 is representative of the residence at 876 Halecrest Drive.

Table 4 – Noise Measurement Results for Location 3

Date	Start Time	End Time	Minimum Noise Level (LMin dBA)	Maximum Noise Level (LMax dBA)	Average Noise Level (Leq dBA)
7/28/2016	7 a.m.	8 a.m.	56.6	90.9	65.9
	8 a.m.	9 a.m.	57.0	83.9	65.4
	9 a.m.	10 a.m.	57.0	79.2	64.0
	10 a.m.	11 a.m.	55.4	81.1	64.4
	11 a.m.	12 p.m.	58.8	85.2	65.6
	1 p.m.	2 p.m.	60.0	86.6	65.6
	2 p.m.	3 p.m.	59.8	85.9	66.0
	3 p.m.	4 p.m.	59.8	88.2	66.2
	4 p.m.	5 p.m.	59.5	85.3	66.1
	5 p.m.	6 p.m.	58.1	81.4	66.1
	6 p.m.	7 p.m.	57.4	89.9	66.0
	7 p.m.	8 p.m.	56.0	83.4	64.7
	8 p.m.	9 p.m.	57.3	87.9	64.8

3 Potential Noise Impacts

3.1 Noise Model

The potential carwash noise impacts of the project were calculated using data received from the client. The noise exposure in this report was computed using the acoustical planning and modeling program SoundPLAN (Version 7.4), which was created by Braunstein & Berndt GmbH. The calculations within SoundPLAN were performed in accordance with the ISO 9613-2 outdoor noise propagation standard, with a maximum acoustical ray reflection order of three.

The carwash is planning on installing nine 15 HP dryers (Model BCS-100-78-0.64OA-15HP), which will be the dominant noise source from the carwash tunnel. The source noise data for the dryers was provided by the client and was obtained from Twin City Fans & Blowers. The data received shows a worst-case noise level (Leq) of 86 dBA at a distance of five feet for each 15 HP dryer. More precise octave unweighted octave band sound power levels (Lw) were also provided, shown in Table 5 below.

Table 5 – Dryer Sound Power Levels

Source	Octave Band Sound Power Level (Lw dBA)								Total Sound Power Level (Lw dBA)
	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	
15 HP Dryer	95	92	92	96	93	95	93	88	101

The carwash is planning on installing two central vacuum systems, however they will be fully enclosed within the carwash building.

The above noise source information was used to calculate the worst-case carwash noise levels at the adjacent noise sensitive land uses. By worst-case, we mean that all of the noise sources were assumed to be operating for the maximum percentage of time that could be expected with the carwash tunnel at full capacity. Each of the nine dryers were determined to be in use at most 67% of time, using a 2 car maximum tunnel capacity, 20 second drying time, and one minute total carwash time.

Topographic data for the area surrounding the project site were retrieved from Google Earth Pro, and were incorporated into the model.

Figures 4 and 5 show the SoundPLAN model geometry in plan and wireframe views, respectively. The perimeter receptors were placed in three rows, directly at the project property line edge, about ten feet beyond the property line edge, and about forty feet beyond the property line edge. The first row models the property line edge directly, while the second and third account for the possibility that sound levels could be higher further away from property edge, either from diffraction effects over the perimeter barrier, or the increased ground elevation further away from the lot edge. Separate groups of receptors in each of these rows model the lots at 484, 490, and 498 Hale Street. 484 and 490 are residences, while 498 is a commercial lot.

A fourth row of receptors models the lot edge of the residence at 876 Halecrest Drive. No additional receptor rows were necessary at this lot edge, as the property edge receptors were not modeled directly behind a barrier, and the lot elevation is relatively flat.

Figure 4. Modeled Project Site Plan with All Source and Receiver Locations
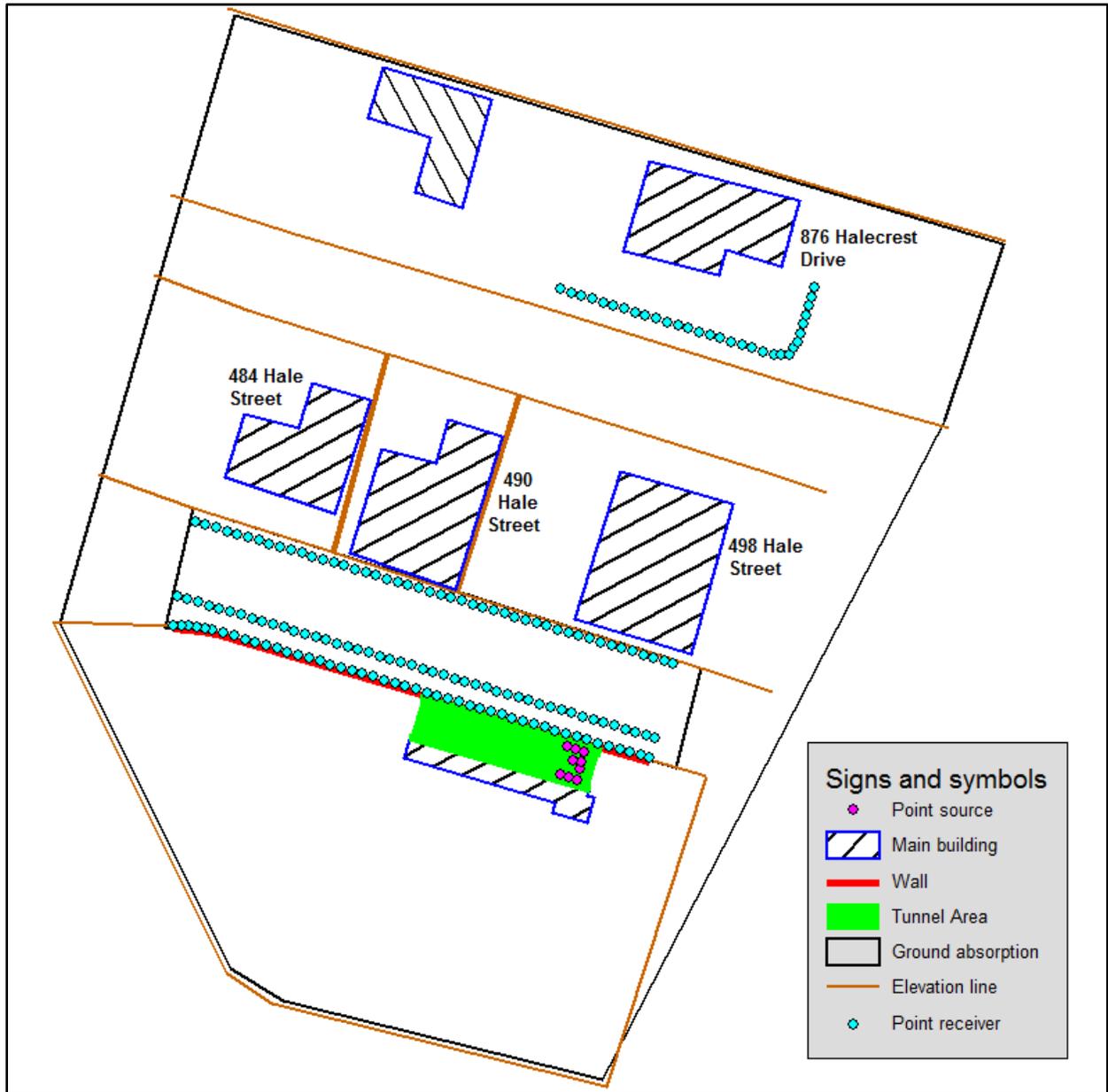
Figure 5. 3D Wireframe of Modeled Project Site Plan with All Source and Receiver Locations
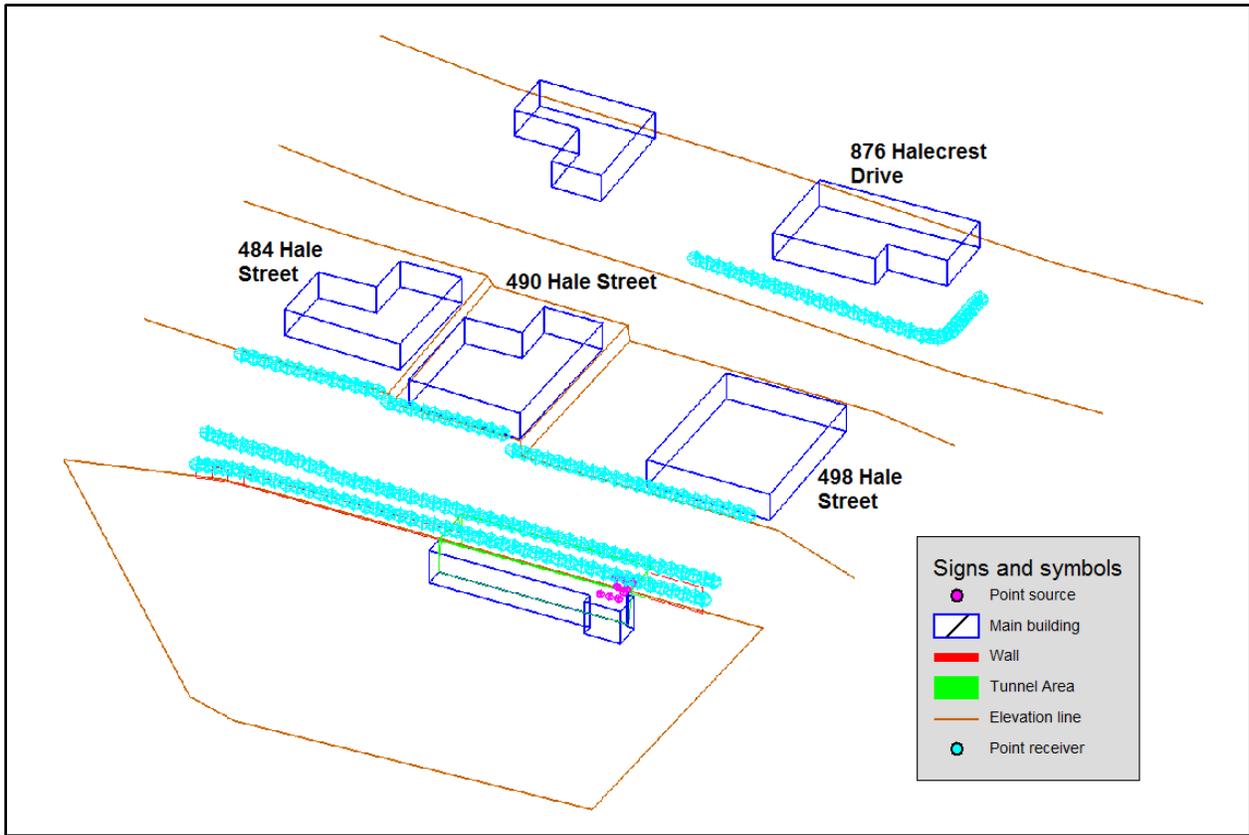
3.2 Calculation Results

A-weighted sound levels were calculated for all of the receptor locations detailed above, representing two neighboring residences (484 and 490 Hale Street), one additional nearby residence (876 Halecrest Drive), and one neighboring commercial lot (498 Hale Street). In all of these cases, the minimum measured ambient levels were greater than the exterior noise level limits given in the municipal code. Therefore, as detailed in the code, the exceedance criteria for all modeled receptors were taken from the minimum measured ambient levels.

The worst-case carwash noise levels at the adjacent residential properties to the north were calculated to be as high as 66.0 dBA, slightly under the 66.9 dBA measured limit. The levels at the additional nearby residence were calculated to be as high as 35.2 dBA, over 28 dB beneath than the 64.0 dB limit. Therefore, there are no residential impacts from the carwash.

However, the worst-case carwash noise levels at the adjacent commercial property were calculated to be as high as 83.4 dBA, over 16 dB greater than the 67.1 measured minimum. In order to mitigate this large exceedance, a sound barrier of at least 12 feet in height, on the eastern end of the north property, will be necessary. Figure 6 shows the extent of this barrier in plan view, alongside the 6 foot western barrier which is already indicated in the architectural plans. With the barrier, the worst-case carwash noise levels at the commercial property are calculated to be 65.6 dBA at the highest, 1.5 dB underneath the limit.

Table 6 shows the worst-case carwash noise levels by location, both with and without the proposed eastern sound barrier. For the three adjacent lots, the "Near Property Line" levels correspond to the maximum modeled level in the first two receptor rows, and the "Near Building" to the third row. Since only property line receptors were modeled for the residence at 876 Halecrest Drive, no value is given for it in the "Near Building" level columns. The specific locations of each of the maximum values are shown in Figure 7. Levels with the eastern sound barrier are given in yellow labels, and where no barrier levels are significantly different, they are given in red labels.

Figure 6. Barrier Locations
Sources: Gene Cipparone – Architect, Inc., Map Image and Data © ESRI 2017
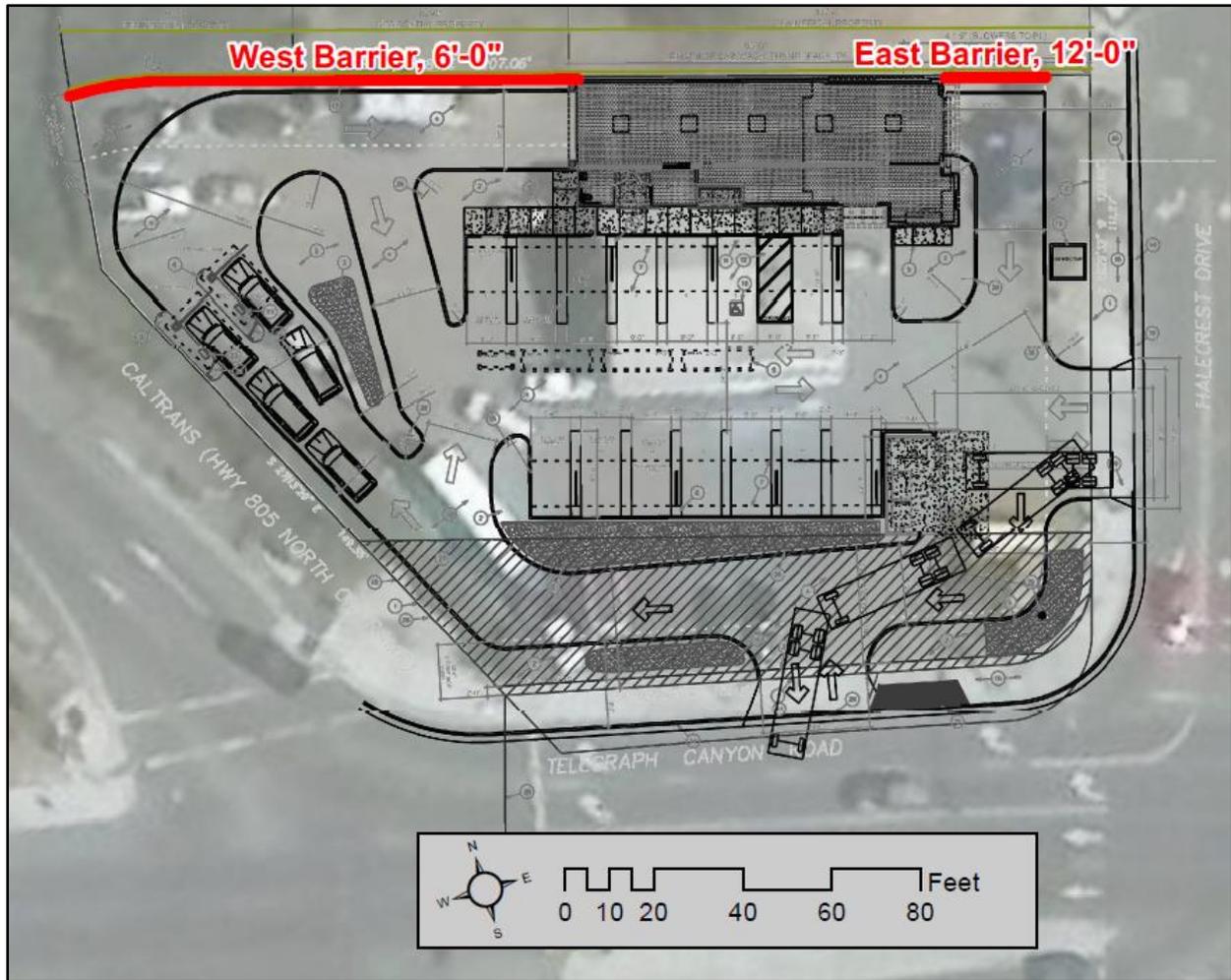
Table 6 – Maximum Sound Levels at Nearby Lots

Location	Type	Exceedance Limit	Maximum Modeled Leq			
			No East Barrier		12 ft East Barrier	
			Near Property Line	Near Building	Near Property Line	Near Building
484 Hale Street	Residential	66.9	66.0	52.5	66.0	52.4
490 Hale Street	Residential	66.9	65.6	49.0	65.6	48.9
876 Halecrest Drive	Residential	64.0	35.2	--	34.2	--
498 Hale Street	Commercial	67.1	**83.4**	**70.5**	65.0	65.6

Figure 7. Receptors with Highest Modeled Leq for All Sites
Sources: Gene Cipparone – Architect, Inc., Map Image and Data © ESRI 2017
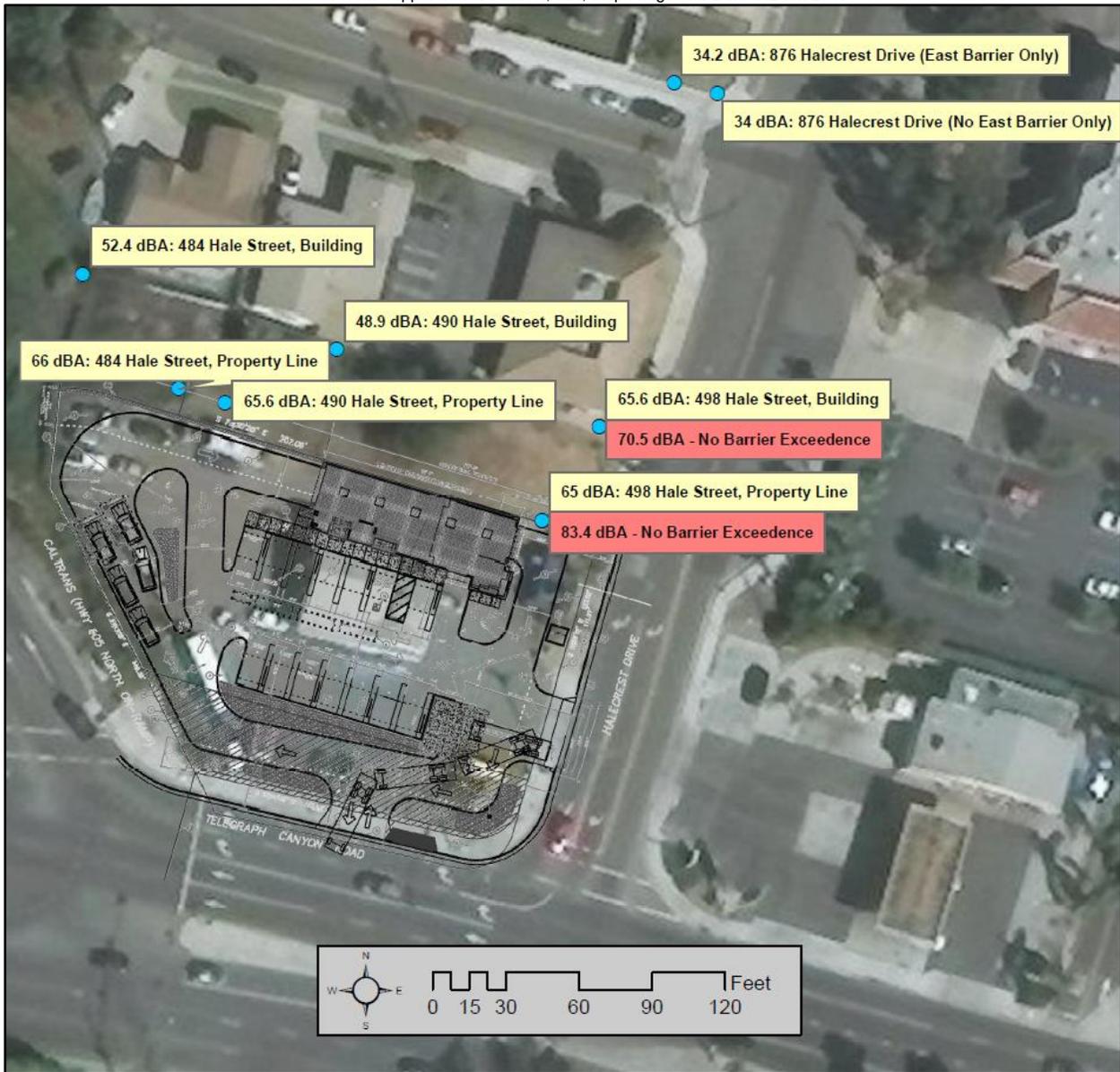
4 Conclusion

The noise emanating from the carwash must comply with the City of Chula Vista's noise standards for residential and commercial land use. The primary noise emanating from the carwash will be generated by the dryers that are located on the eastern end of the carwash tunnel.

The calculated carwash noise levels at the adjacent residential and commercial land uses were based on the maximum possible use of the carwash dryers (a worst-case scenario). In typical operation, the dryers will only be activated when cars pass through the tunnel, which will only occur sporadically throughout the business day. Therefore, the actual noise impact should be less. The carwash will only operate during daytime hours (8 a.m. to 9 p.m.) and therefore only the City of Chula Vista's daytime residential and commercial noise standards are applicable.

The lowest measured ambient hourly average noise levels at Locations 1-3 were 66.9, 67.1 and 64.0 dBA Leq respectively. The City of Chula Vista's Noise Ordinance of the Municipal Code states if the measured ambient noise level is greater than the carwash noise, the ambient becomes the noise standard. Therefore, the exterior noise standard at the residential land uses to the north would then become 66.9 dBA Leq. The exterior noise standard at the commercial land use to the north would then become 67.1 dBA Leq. The exterior noise standard at the residential land use to the north near the intersection of Hale Street and Halecrest Drive would then become 64.0 dBA Leq.

The calculated worst-case carwash noise level at the nearest residential land uses to the north was 66.0 dBA, which is less than 66.9 dBA. The calculated worst-case carwash noise level at the residential land use to the north near the intersection of Hale Street and Halecrest drive was 35.2 dBA, which is less than 64.0 dBA. The calculated worst-case carwash noise level at the commercial land use to the north was 83.4 dBA, which is greater than 67.1 dBA. With a barrier of at least 12 feet in height, as detailed in Figure 6, the carwash will comply with the City of Chula Vista's daytime noise standards at the adjacent residential and commercial land uses.

5 References and Endnotes

Coffey Engineering, Inc., Site Plan for Wash & Go Car Wash, 495 Telegraph Canyon Road, Chula Vista, California 91910, January 16, 2017.

Appendix A   Fundamentals of Acoustics

This attachment describes the noise terminology and metrics used in this report.

A.1 Decibels (dB), Frequency and the A-Weighted Sound Level

Loudness is a subjective quantity that enables a listener to order the magnitude of different sounds on a scale from soft to loud. Although the perceived loudness of a sound is based somewhat on its frequency and duration, chiefly it depends upon the sound pressure level. Sound pressure level is a measure of the sound pressure at a point relative to a standard reference value; sound pressure level is always expressed in decibels (dB).

Decibels are logarithmic quantities, so combining decibels is unlike common arithmetic. For example, if two sound sources each produce 100 dB operating individually and they are then operated together, they produce 103 dB. Each doubling of the number of sources produces another three decibels of noise. A tenfold increase in the number of sources makes the sound pressure level go up 10 dB, and a hundredfold increase makes the level go up 20 dB. If two sources differ in sound pressure level by more than 10 decibels, then operating together, the total level will approximately equal the level of the louder source; the quieter source doesn't contribute significantly to the total.

People hear changes in sound level according to the following rules of thumb: 1) a change of 1 decibel or less in a given sound's level is generally not readily perceptible except in a laboratory setting; 2) a 5-dB change in a sound is considered to be generally noticeable in a community setting; and 3) it takes approximately a 10-dB change to be heard as a doubling or halving of a sound's loudness.

Another important characteristic of sound is its frequency, or "pitch." This is the rate of repetition of sound pressure oscillations as they reach our ears. Frequency is expressed in units known as Hertz (abbreviated "Hz" and equivalent to one cycle per second). Sounds heard in the environment usually consist of a range of frequencies. The distribution of sound energy as a function of frequency is termed the "frequency spectrum."

The human ear does not respond equally to identical noise levels at different frequencies. Although the normal frequency range of hearing for most people extends from a low of about 20 Hz to a high of 10,000 Hz to 20,000 Hz, people are most sensitive to sounds in the voice range, between about 500 Hz to 2,000 Hz. Therefore, to correlate the amplitude of a sound with its level as perceived by people, the sound energy spectrum is adjusted, or "weighted."

The weighting system most commonly used to correlate with people's response to noise is "A-weighting" (or the "A-filter") and the resultant noise level is called the "A-weighted noise level" (dBA). A-weighting significantly de-emphasizes those parts of the frequency spectrum from a noise source that occurs both at lower frequencies (those below about 500 Hz) and at very high frequencies (above 10,000 Hz) where we do not hear as well. The filter has very little effect, or is nearly "flat," in the middle range of frequencies between 500 and 10,000 Hz. In addition to representing human hearing sensitivity, A-weighted sound levels have been found to correlate better than other weighting networks with human perception of "noisiness." One of the primary reasons for this is that the A-weighting network emphasizes the frequency range where human speech occurs, and noise in this range interferes with speech communication. Another reason is that the increased hearing sensitivity makes noise more annoying in this frequency range.

A.2 Point and Line Noise Sources

Noise may be generated from a point source, such as a piece of construction equipment, or from a line source, such as a roadway containing moving vehicles. Because noise spreads in an ever-widening pattern, the given amount of noise striking an object, such as an eardrum, is reduced with distance from the source. The typical distance reduction for point source noise is 6 dBA per doubling of the distance from the noise source.

A line source of noise, such as vehicles proceeding down a roadway, will also be reduced with distance, but the rate of reduction is affected by both distance and the type of terrain over which the noise passes. Hard sites, such as developed areas with paving, reduce noise at a rate of 3 dBA per doubling of distance, while soft sites, such as undeveloped areas, open space and vegetated areas reduce noise at a rate of 4.5 dBA per doubling of distance.

Objects that block the line of sight attenuate the noise source if the receptor is located within the "shadow" of the blockage (such as behind a sound wall). If a receptor is located behind the wall, but has a view of the source, the wall will do little to reduce the noise. Additionally, a receptor located on the same side of the wall as the noise source may experience an increase in the perceived noise level, as the wall will reflect noise back to the receptor compounding the noise.

A.3 Equivalent Sound Level (L_{eq})

The Equivalent Sound Level, abbreviated L_{eq}, is a measure of the total exposure resulting from the accumulation of A-weighted sound levels over a particular period of interest -- for example, an hour, an 8-hour school day, nighttime, or a full 24-hour day. However, because the length of the period can be different depending on the time frame of interest, the applicable period should always be identified or clearly understood when discussing the metric. Such durations are often identified through a subscript, for example L_{eq1h}, or $L_{eq(24)}$.

The L_{eq} may be thought of as a constant sound level over the period of interest that contains as much sound energy as (is "equivalent" to) the actual time-varying sound level with its normal peaks and valleys. It is important to recognize, however, that the two signals (the constant one and the time-varying one) would sound very different from each other. Also, the "average" sound level suggested by L_{eq} is not an arithmetic value, but a logarithmic, or "energy-averaged" sound level. Thus, the loudest events may dominate the noise environment described by the metric, depending on the relative loudness of the events.

Appendix B   SoundPLAN Receiver Results

Name	Leq (No Barrier)	Leq (12' Barrier)	Category
A-03	80	61.7	498 Hale St. (Near Property Line)
A-04	80.9	62.4	498 Hale St. (Near Property Line)
A-05	82	63.6	498 Hale St. (Near Property Line)
A-06	**83.4**	**65**	**498 Hale St. (Near Property Line)**
A-07	83.4	63.9	498 Hale St. (Near Property Line)
A-08	68.3	0	498 Hale St. (Near Property Line)
A-09	65.9	0	498 Hale St. (Near Property Line)
A-10	65.3	57.9	498 Hale St. (Near Property Line)
A-11	64.1	59.9	498 Hale St. (Near Property Line)
A-12	63.1	60.7	498 Hale St. (Near Property Line)
A-13	60.7	58.3	498 Hale St. (Near Property Line)
A-14	58.7	56.2	498 Hale St. (Near Property Line)
A-15	57.1	54.6	498 Hale St. (Near Property Line)
A-16	56	53.7	498 Hale St. (Near Property Line)
A-17	54.8	52.5	498 Hale St. (Near Property Line)
A-18	53.8	51.4	498 Hale St. (Near Property Line)
A-19	52.8	50.5	498 Hale St. (Near Property Line)
A-20	52	49.6	498 Hale St. (Near Property Line)
A-21	51.5	49.4	498 Hale St. (Near Property Line)
A-22	50.8	48.7	498 Hale St. (Near Property Line)
A-23	50.2	48	498 Hale St. (Near Property Line)
A-24	49.6	47.4	490 Hale St. (Near Property Line)
A-25	49.2	46.8	490 Hale St. (Near Property Line)
A-26	62.1	62	490 Hale St. (Near Property Line)
A-27	65.2	65.1	490 Hale St. (Near Property Line)
A-28	65.3	65.2	490 Hale St. (Near Property Line)
A-29	65.4	65.4	490 Hale St. (Near Property Line)
A-30	65.6	65.5	490 Hale St. (Near Property Line)
A-31	65.3	65.2	490 Hale St. (Near Property Line)
A-32	64.9	64.9	490 Hale St. (Near Property Line)
A-33	64.6	64.6	490 Hale St. (Near Property Line)
A-34	64.3	64.3	490 Hale St. (Near Property Line)
A-35	64	64	490 Hale St. (Near Property Line)
A-36	63.8	63.7	484 Hale St. (Near Property Line)
A-37	63.6	63.5	484 Hale St. (Near Property Line)
A-38	63.4	63.4	484 Hale St. (Near Property Line)
A-39	63.3	63.3	484 Hale St. (Near Property Line)
A-40	63.2	63.2	484 Hale St. (Near Property Line)
A-41	63	63	484 Hale St. (Near Property Line)
A-42	62.8	62.8	484 Hale St. (Near Property Line)

Name	Leq (No Barrier)	Leq (12' Barrier)	Category
A-43	62.2	62.2	484 Hale St. (Near Property Line)
A-44	62	61.9	484 Hale St. (Near Property Line)
A-45	61.6	61.6	484 Hale St. (Near Property Line)
A-46	61.3	61.2	484 Hale St. (Near Property Line)
A-47	60.6	60.5	484 Hale St. (Near Property Line)
A-48	60.2	60.1	484 Hale St. (Near Property Line)
A-49	59.2	58.7	484 Hale St. (Near Property Line)
B-01	63.9	63.9	484 Hale St. (Near Property Line)
B-02	64.2	64.2	484 Hale St. (Near Property Line)
B-03	64.3	64.3	484 Hale St. (Near Property Line)
B-04	64.5	64.5	484 Hale St. (Near Property Line)
B-05	64.7	64.7	484 Hale St. (Near Property Line)
B-06	65	64.9	484 Hale St. (Near Property Line)
B-07	65.2	65.2	484 Hale St. (Near Property Line)
B-08	65.5	65.5	484 Hale St. (Near Property Line)
B-09	65.8	65.8	484 Hale St. (Near Property Line)
B-10	65.9	65.9	484 Hale St. (Near Property Line)
B-11	**66**	**66**	**484 Hale St. (Near Property Line)**
B-12	65.4	65.4	484 Hale St. (Near Property Line)
B-13	65.1	65.1	484 Hale St. (Near Property Line)
B-14	65.2	65.2	490 Hale St. (Near Property Line)
B-15	**65.6**	**65.6**	**490 Hale St. (Near Property Line)**
B-16	65.3	65.3	490 Hale St. (Near Property Line)
B-17	64.6	64.6	490 Hale St. (Near Property Line)
B-18	64.2	63.7	490 Hale St. (Near Property Line)
B-19	62.3	61.6	490 Hale St. (Near Property Line)
B-20	53.6	43.7	490 Hale St. (Near Property Line)
B-21	53	44.2	490 Hale St. (Near Property Line)
B-22	52.4	44.7	490 Hale St. (Near Property Line)
B-23	51.6	44.6	490 Hale St. (Near Property Line)
B-24	51	45.1	490 Hale St. (Near Property Line)
B-25	50.3	45.7	490 Hale St. (Near Property Line)
B-26	50.3	46.3	498 Hale St. (Near Property Line)
B-27	50.5	47	498 Hale St. (Near Property Line)
B-28	51	47.6	498 Hale St. (Near Property Line)
B-29	51.5	48.4	498 Hale St. (Near Property Line)
B-30	51.9	48.6	498 Hale St. (Near Property Line)
B-31	52.7	49.5	498 Hale St. (Near Property Line)
B-32	53.6	50.4	498 Hale St. (Near Property Line)
B-33	54.6	51.5	498 Hale St. (Near Property Line)
B-34	55.7	52.6	498 Hale St. (Near Property Line)

Name	Leq (No Barrier)	Leq (12' Barrier)	Category
B-35	56.9	53.8	498 Hale St. (Near Property Line)
B-36	57.2	52.8	498 Hale St. (Near Property Line)
B-37	58.3	53.3	498 Hale St. (Near Property Line)
B-38	58.7	49.9	498 Hale St. (Near Property Line)
B-39	59.6	0	498 Hale St. (Near Property Line)
B-40	61	0	498 Hale St. (Near Property Line)
B-41	62.9	0	498 Hale St. (Near Property Line)
B-42	71.7	55.6	498 Hale St. (Near Property Line)
B-43	77.4	63.2	498 Hale St. (Near Property Line)
B-44	78.6	64.7	498 Hale St. (Near Property Line)
B-45	78.2	64.6	498 Hale St. (Near Property Line)
B-46	77.7	64.2	498 Hale St. (Near Property Line)
C-01	**52.5**	**52.4**	**484 Hale St. (Near Building)**
C-02	52.2	52.1	484 Hale St. (Near Building)
C-03	52	51.9	484 Hale St. (Near Building)
C-04	51.2	51	484 Hale St. (Near Building)
C-05	49.3	49.1	484 Hale St. (Near Building)
C-06	45.3	44.8	484 Hale St. (Near Building)
C-07	42.7	41.8	484 Hale St. (Near Building)
C-08	42.9	42.1	484 Hale St. (Near Building)
C-09	43.1	42.4	484 Hale St. (Near Building)
C-10	43.3	42.6	484 Hale St. (Near Building)
C-11	43.5	42.9	484 Hale St. (Near Building)
C-12	45	44.6	484 Hale St. (Near Building)
C-13	46.1	45.8	484 Hale St. (Near Building)
C-14	46.4	46.2	490 Hale St. (Near Building)
C-15	46.7	46.5	490 Hale St. (Near Building)
C-16	47	46.8	490 Hale St. (Near Building)
C-17	47.3	47.1	490 Hale St. (Near Building)
C-18	47.5	47.3	490 Hale St. (Near Building)
C-19	47.8	47.6	490 Hale St. (Near Building)
C-20	48.2	48	490 Hale St. (Near Building)
C-21	48.5	48.3	490 Hale St. (Near Building)
C-22	48.9	48.7	490 Hale St. (Near Building)
C-23	**49**	**48.9**	**490 Hale St. (Near Building)**
C-24	47.4	47.1	490 Hale St. (Near Building)
C-25	47.8	47.6	490 Hale St. (Near Building)
C-26	47.7	47.5	498 Hale St. (Near Building)
C-27	47.7	47.5	498 Hale St. (Near Building)
C-28	48.1	47.9	498 Hale St. (Near Building)
C-29	47.8	47.5	498 Hale St. (Near Building)

Name	Leq (No Barrier)	Leq (12' Barrier)	Category
C-30	47.8	47.6	498 Hale St. (Near Building)
C-31	47.8	47.5	498 Hale St. (Near Building)
C-32	47.8	47.6	498 Hale St. (Near Building)
C-33	45.8	45.4	498 Hale St. (Near Building)
C-34	45.8	44.8	498 Hale St. (Near Building)
C-35	47.8	44.1	498 Hale St. (Near Building)
C-36	49.6	39.5	498 Hale St. (Near Building)
C-37	50.3	0	498 Hale St. (Near Building)
C-38	51	0	498 Hale St. (Near Building)
C-39	51.7	0	498 Hale St. (Near Building)
C-40	52.5	0	498 Hale St. (Near Building)
C-41	53.3	0	498 Hale St. (Near Building)
C-42	55.2	0	498 Hale St. (Near Building)
C-43	56.2	0	498 Hale St. (Near Building)
C-44	65.1	60	498 Hale St. (Near Building)
C-45	69.2	64.2	498 Hale St. (Near Building)
C-46	**70.5**	**65.6**	**498 Hale St. (Near Building)**
D-01	26	0	876 Halecrest Dr. (Near Property Line)
D-02	26.1	0	876 Halecrest Dr. (Near Property Line)
D-03	26.1	0	876 Halecrest Dr. (Near Property Line)
D-04	30.1	27.8	876 Halecrest Dr. (Near Property Line)
D-05	31.2	29.5	876 Halecrest Dr. (Near Property Line)
D-06	31.1	29.3	876 Halecrest Dr. (Near Property Line)
D-07	31	29.2	876 Halecrest Dr. (Near Property Line)
D-08	31	29.1	876 Halecrest Dr. (Near Property Line)
D-09	33	31.8	876 Halecrest Dr. (Near Property Line)
D-10	32.9	31.7	876 Halecrest Dr. (Near Property Line)
D-11	32.8	31.6	876 Halecrest Dr. (Near Property Line)
D-12	33.5	32.4	876 Halecrest Dr. (Near Property Line)
D-13	33.8	32.8	876 Halecrest Dr. (Near Property Line)
D-14	34	32.9	876 Halecrest Dr. (Near Property Line)
D-15	34	32.9	876 Halecrest Dr. (Near Property Line)
D-16	34.3	33.2	876 Halecrest Dr. (Near Property Line)
D-17	34.7	33.7	876 Halecrest Dr. (Near Property Line)
D-18	**35.1**	**34.2**	**876 Halecrest Dr. (Near Property Line)**
D-19	34.8	33.8	876 Halecrest Dr. (Near Property Line)
D-20	35	33.9	876 Halecrest Dr. (Near Property Line)
D-21	34.8	33.6	876 Halecrest Dr. (Near Property Line)
D-22	**35.2**	**34**	**876 Halecrest Dr. (Near Property Line)**
D-23	34.7	33.5	876 Halecrest Dr. (Near Property Line)
D-24	34.8	33.6	876 Halecrest Dr. (Near Property Line)

Name	Leq (No Barrier)	Leq (12' Barrier)	Category
D-25	34.7	33.4	876 Halecrest Dr. (Near Property Line)
D-26	34.5	33.2	876 Halecrest Dr. (Near Property Line)
D-27	34.4	33.2	876 Halecrest Dr. (Near Property Line)
D-28	33.8	32.4	876 Halecrest Dr. (Near Property Line)
D-29	33.8	32.4	876 Halecrest Dr. (Near Property Line)
D-30	32.8	31	876 Halecrest Dr. (Near Property Line)
D-31	32.1	30	876 Halecrest Dr. (Near Property Line)

***Bold** rows indicate either one or both levels are maximums for the category

**"0" levels occur in the barrier case due to limitations within the ISO-9613 standard. All of the receptors with these levels are shielded both by the tunnel wall and the eastern barrier, and if ISO-9613 could handle the diffraction paths necessary to calculate non-zero values, their levels would be very small.

***The first letter of each receptor name corresponds to the which row it is in. Using the row numbers given in Section 3.1, "A" corresponds to 1, "B" to 2, "C" to 3, and "D" to 4.

Appendix C   SoundPLAN Geometry Documentation

This appendix contains the raw geometry output from a SoundPLAN situation containing every geofile used in the acoustical model for this project. All units are in meters, and XY coordinate values are referenced to NAD 1983 California State Plane Zone 6. To create a model from the data below, a DGM will need to be generated from the elevation lines, and the point sources will need to be defined with the spectral and time history data given in Section 3.1. The larger ground absorption polygon should be set to 1.0, and the smaller one should be at 0.6. Also note that only receivers and point sources have been given meaningful names; no consistent effort was made to name any of the other object types.

Geometry Output:

```
Calculation area


_____x_____ _____y_____
 1925566.05  551612.20
 1925589.14  551566.02
 1925596.26  551561.79
 1925639.55  551551.20
 1925685.73  551639.13
 1925693.81  551662.99
 1925589.72  551693.58


Ground absorption

NAME                        =

_____x_____ _____y_____
 1925649.42  551592.92
 1925652.86  551606.21
 1925584.12  551627.61
 1925580.41  551611.67
 1925585.11  551611.56
 1925649.42  551592.92


Ground absorption

NAME                        =

_____x_____ _____y_____
 1925566.05  551612.20
 1925589.14  551566.02
 1925596.26  551561.79
 1925639.55  551551.20
 1925685.73  551639.13
 1925693.81  551662.99
 1925589.72  551693.58


Floating screen
```

```
_____x_____  _____y_____  ___z___

NAME                             =

 1925613.37   551596.74        69.80
 1925637.69   551589.75        69.80


 1925637.94   551590.63        69.80
 1925639.05   551594.47        69.80


 1925639.36   551595.53        69.80
 1925615.15   551602.62        69.80


 1925614.91   551601.83        69.80
 1925613.59   551597.46        69.80


 1925613.37   551596.74        69.80
```

Elevation line

```
_____x_____  _____y_____  ___z___
 1925581.09   551669.59       74.07
 1925598.08   551664.27       72.24
 1925630.94   551654.75       71.02
 1925667.37   551643.71       68.88
 1925686.50   551638.31       68.88
```

Elevation line

```
_____x_____  _____y_____  ___z___
 1925588.89   551694.64       74.07
 1925605.88   551689.32       72.24
 1925638.74   551679.80       71.02
 1925675.17   551668.76       68.88
 1925694.30   551663.37       68.88
```

Elevation line

```
_____x_____  _____y_____  ___z___
 1925571.44   551632.28       72.85
 1925584.12   551627.61       72.85
 1925602.84   551621.78       72.85
 1925603.31   551621.63       71.63
 1925619.82   551616.50       71.63
 1925619.98   551616.45       69.49
 1925652.86   551606.21       69.49
 1925662.69   551603.16       65.84
```

Elevation line

x	y	z
1925653.57	551591.81	65.23
1925591.25	551609.90	65.23
1925584.64	551611.63	65.23
1925582.64	551611.76	65.23
1925581.49	551611.84	65.23
1925565.17	551612.51	65.23

Elevation line

x	y	z
1925565.17	551612.51	65.23
1925588.72	551565.58	65.23
1925594.86	551561.45	65.23
1925640.15	551550.34	65.23
1925653.57	551591.81	65.23

Elevation line

x	y	z
1925602.84	551621.78	72.85
1925610.21	551648.44	72.85

Elevation line

x	y	z
1925603.31	551621.63	71.63
1925610.68	551648.29	71.63

Elevation line

x	y	z
1925620.09	551616.41	69.49
1925628.46	551642.74	69.49

Elevation line

x	y	z
1925578.81	551658.94	72.85
1925591.48	551654.27	72.85
1925610.21	551648.44	72.85
1925610.91	551648.19	71.63
1925628.13	551642.84	71.63
1925628.46	551642.74	69.49
1925660.23	551632.87	69.49
1925670.06	551629.81	67.97

Elevation line

x	y	z
1925619.82	551616.50	71.63
1925628.13	551642.84	71.63

Building

NAME	=Building186
HEIGHT	=4.57
REFLOSS	=1.00

x	y	z
1925613.37	551596.74	65.23
1925612.64	551594.34	65.23
1925633.18	551588.30	65.23
1925632.78	551586.95	65.23
1925637.41	551585.52	65.23
1925638.44	551588.99	65.23
1925637.54	551589.26	65.23
1925637.69	551589.75	65.23
1925613.37	551596.74	65.23

Building

NAME	=
HEIGHT	=3.66
REFLOSS	=1.00

x	y	z
1925619.68	551616.83	71.63
1925626.11	551637.30	71.63
1925618.65	551639.53	71.63
1925616.98	551633.73	71.63
1925609.68	551635.64	71.63
1925605.40	551621.59	71.63
1925619.68	551616.83	71.63

Building

NAME	=
HEIGHT	=3.66
REFLOSS	=1.00

x	y	z
1925600.32	551644.37	72.85
1925598.49	551638.42	72.85
1925591.11	551640.32	72.85
1925588.49	551631.83	72.85
1925603.33	551626.99	72.85

```
1925608.17   551642.23        72.85
1925600.32   551644.37        72.85
```

Building

```
NAME                    =
HEIGHT                  =3.66
REFLOSS                 =1.00
```

x	y	z
1925641.91	551632.62	69.49
1925635.80	551612.86	69.49
1925651.51	551608.17	69.49
1925657.23	551628.33	69.49
1925641.91	551632.62	69.49

Building

```
NAME                    =
HEIGHT                  =3.66
REFLOSS                 =1.00
```

x	y	z
1925645.85	551674.16	69.98
1925642.36	551662.16	69.98
1925655.38	551658.84	69.98
1925656.25	551662.18	69.98
1925663.87	551660.03	69.98
1925666.25	551668.76	69.98
1925645.85	551674.16	69.98

Building

```
NAME                    =
HEIGHT                  =3.66
REFLOSS                 =1.00
```

x	y	z
1925624.50	551682.27	71.75
1925609.81	551686.64	71.75
1925607.83	551679.89	71.75
1925616.16	551677.38	71.75
1925614.18	551669.97	71.75
1925620.53	551667.98	71.75
1925624.50	551682.27	71.75

Noise protection wall

x	y	z

```
NAME                    =
```

```
REFFLAG                        =  5
WALLHEIGHT                     =1.83
FLOATING                       =  0

 1925615.15   551602.62        65.23
 1925587.31   551610.79        65.23
 1925585.29   551611.21        65.23
 1925583.41   551611.40        65.23
 1925581.44   551611.45        65.23
```

Noise protection wall

```
_____x_____  _____y_____  ___z___

NAME                           =
REFFLAG                        =  5
WALLHEIGHT                     =3.66
FLOATING                       =  0

 1925639.36   551595.53        65.23

WALLHEIGHT                     =3.66
FLOATING                       =  0

 1925645.95   551593.61        65.23
```

Receiver

```
NAME                      =B-10
RELHEIGHT1FLOOR                =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                   =  1


_____x_____  _____y_____  ___z___
 1925595.01   551612.07        68.13
```

Receiver

```
NAME                      =B-11
RELHEIGHT1FLOOR                =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                   =  1


_____x_____  _____y_____  ___z___
 1925596.45   551611.64        68.14
```

Receiver

```
NAME                      =B-12
RELHEIGHT1FLOOR                =2.40
FLOORHEIGHT                    =2.80
```

```
NUMBERFLOORS                     =   1


_____x_____  _____y_____  ____z____
  1925597.90       551611.22        67.69



Receiver

NAME                     =B-13
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                     =   1


_____x_____  _____y_____  ____z____
  1925599.34       551610.80        67.69



Receiver

NAME                     =B-14
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                     =   1


_____x_____  _____y_____  ____z____
  1925600.79       551610.37        67.70



Receiver

NAME                     =B-15
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                     =   1


_____x_____  _____y_____  ____z____
  1925602.23       551609.95        67.71



Receiver

NAME                     =B-16
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                     =   1


_____x_____  _____y_____  ____z____
  1925603.68       551609.53        67.71



Receiver

NAME                     =B-17
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                  =2.80
```

```
NUMBERFLOORS                           =    1


_____x_____  _____y_____  ___z___
 1925605.12   551609.10      67.72



Receiver

NAME                       =B-18
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                       =    1


_____x_____  _____y_____  ___z___
 1925606.57   551608.68      67.72



Receiver

NAME                       =B-19
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                       =    1


_____x_____  _____y_____  ___z___
 1925608.01   551608.26      67.72



Receiver

NAME                       =B-20
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                       =    1


_____x_____  _____y_____  ___z___
 1925609.45   551607.83      67.72



Receiver

NAME                       =B-21
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                       =    1


_____x_____  _____y_____  ___z___
 1925610.90   551607.41      67.72



Receiver

NAME                       =B-22
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                     =2.80
```

NUMBERFLOORS   =   1

_____x_____	_____y_____	___z___
1925612.34	551606.98	67.72

Receiver

NAME   =B-23
RELHEIGHT1FLOOR   =2.40
FLOORHEIGHT   =2.80
NUMBERFLOORS   =   1

_____x_____	_____y_____	___z___
1925613.79	551606.56	67.71

Receiver

NAME   =B-24
RELHEIGHT1FLOOR   =2.40
FLOORHEIGHT   =2.80
NUMBERFLOORS   =   1

_____x_____	_____y_____	___z___
1925615.23	551606.14	67.71

Receiver

NAME   =B-25
RELHEIGHT1FLOOR   =2.40
FLOORHEIGHT   =2.80
NUMBERFLOORS   =   1

_____x_____	_____y_____	___z___
1925616.68	551605.71	67.71

Receiver

NAME   =B-26
RELHEIGHT1FLOOR   =2.40
FLOORHEIGHT   =2.80
NUMBERFLOORS   =   1

_____x_____	_____y_____	___z___
1925618.12	551605.29	67.71

Receiver

NAME   =B-27
RELHEIGHT1FLOOR   =2.40
FLOORHEIGHT   =2.80

```
NUMBERFLOORS                      =   1


_____x_____  _____y_____  ___z___
 1925619.57   551604.87      67.71



Receiver

NAME                    =B-28
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                      =   1


_____x_____  _____y_____  ___z___
 1925621.01   551604.44      67.71



Receiver

NAME                    =B-29
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                      =   1


_____x_____  _____y_____  ___z___
 1925622.46   551604.02      67.71



Receiver

NAME                    =B-30
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                      =   1


_____x_____  _____y_____  ___z___
 1925623.90   551603.60      67.71



Receiver

NAME                    =B-31
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                      =   1


_____x_____  _____y_____  ___z___
 1925625.35   551603.17      67.70



Receiver

NAME                    =B-32
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                    =2.80
```

```
NUMBERFLOORS                      =  1


_____x_____ _____y_____ ___z___
 1925626.79  551602.75      67.70



Receiver

NAME                    =B-33
RELHEIGHT1FLOOR                  =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                  =  1


_____x_____ _____y_____ ___z___
 1925628.24  551602.32      67.70



Receiver

NAME                    =B-34
RELHEIGHT1FLOOR                  =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                  =  1


_____x_____ _____y_____ ___z___
 1925629.68  551601.90      67.70



Receiver

NAME                    =B-35
RELHEIGHT1FLOOR                  =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                  =  1


_____x_____ _____y_____ ___z___
 1925631.12  551601.48      67.70



Receiver

NAME                    =B-36
RELHEIGHT1FLOOR                  =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                  =  1


_____x_____ _____y_____ ___z___
 1925632.57  551601.05      67.70



Receiver

NAME                    =B-37
RELHEIGHT1FLOOR                  =2.40
FLOORHEIGHT                  =2.80
```

```
NUMBERFLOORS                            =    1


_____x_____  _____y_____  ____z____
 1925634.01      551600.63        67.70



Receiver

NAME                      =B-38
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                    =    1


_____x_____  _____y_____  ____z____
 1925635.46      551600.21        67.70



Receiver

NAME                      =B-39
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                    =    1


_____x_____  _____y_____  ____z____
 1925636.90      551599.78        67.69



Receiver

NAME                      =B-40
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                    =    1


_____x_____  _____y_____  ____z____
 1925638.35      551599.36        67.69



Receiver

NAME                      =B-41
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                    =    1


_____x_____  _____y_____  ____z____
 1925639.79      551598.94        67.69



Receiver

NAME                      =B-42
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                     =2.80
```

```
NUMBERFLOORS                        =    1


_____x_____  _____y_____  ____z____
 1925641.24      551598.51        67.69



Receiver

NAME                     =B-43
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                     =    1


_____x_____  _____y_____  ____z____
 1925642.68       551598.09        67.69



Receiver

NAME                     =B-44
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                     =    1


_____x_____  _____y_____  ____z____
 1925644.13       551597.66        67.69



Receiver

NAME                     =B-45
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                     =    1


_____x_____  _____y_____  ____z____
 1925645.57       551597.24        67.69



Receiver

NAME                     =A-10
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                     =    1


_____x_____  _____y_____  ____z____
 1925636.13       551597.06        66.81



Receiver

NAME                     =A-11
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                     =2.80
```

```
NUMBERFLOORS                        =   1


_____x_____    _____y_____    ___z___
 1925634.68     551597.48           66.81



Receiver

NAME                     =A-12
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                      =   1


_____x_____    _____y_____    ___z___
 1925633.23     551597.90           66.81



Receiver

NAME                     =A-13
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                      =   1


_____x_____    _____y_____    ___z___
 1925631.78     551598.33           66.81



Receiver

NAME                     =A-14
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                      =   1


_____x_____    _____y_____    ___z___
 1925630.33     551598.75           66.81



Receiver

NAME                     =A-15
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                      =   1


_____x_____    _____y_____    ___z___
 1925628.88     551599.17           66.81



Receiver

NAME                     =A-16
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
```

```
NUMBERFLOORS                              =    1


_____x_____  _____y_____  ____z____
 1925627.43     551599.59        66.81



Receiver

NAME                        =A-17
RELHEIGHT1FLOOR                       =2.40
FLOORHEIGHT                        =2.80
NUMBERFLOORS                        =    1


_____x_____  _____y_____  ____z____
 1925625.98     551600.01        66.81



Receiver

NAME                        =A-18
RELHEIGHT1FLOOR                       =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                        =    1


_____x_____  _____y_____  ____z____
 1925624.53     551600.43        66.81



Receiver

NAME                        =A-19
RELHEIGHT1FLOOR                       =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                        =    1


_____x_____  _____y_____  ____z____
 1925623.08     551600.85        66.81



Receiver

NAME                        =A-20
RELHEIGHT1FLOOR                       =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                        =    1


_____x_____  _____y_____  ____z____
 1925621.64     551601.27        66.81



Receiver

NAME                        =A-21
RELHEIGHT1FLOOR                       =2.40
FLOORHEIGHT                      =2.80
```

```
NUMBERFLOORS                      =   1


_____x_____   _____y_____   ____z____
  1925620.19       551601.69       66.81



Receiver

NAME                    =A-22
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                    =   1


_____x_____   _____y_____   ____z____
  1925618.74       551602.11       66.81



Receiver

NAME                    =A-23
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                    =   1


_____x_____   _____y_____   ____z____
  1925617.29       551602.53       66.81



Receiver

NAME                    =A-24
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                    =   1


_____x_____   _____y_____   ____z____
  1925615.84       551602.95       66.81



Receiver

NAME                    =A-25
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                    =   1


_____x_____   _____y_____   ____z____
  1925614.39       551603.37       66.81



Receiver

NAME                    =A-26
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                     =2.80
```

```
NUMBERFLOORS                         =   1


_____x_____  _____y_____  ___z___
 1925612.94     551603.80          66.81



Receiver

NAME                      =A-27
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                         =   1


_____x_____  _____y_____  ___z___
 1925611.49     551604.22          66.81



Receiver

NAME                      =A-28
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                         =   1


_____x_____  _____y_____  ___z___
 1925610.04     551604.64          66.81



Receiver

NAME                      =A-29
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                         =   1


_____x_____  _____y_____  ___z___
 1925608.59     551605.06          66.81



Receiver

NAME                      =A-30
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                         =   1


_____x_____  _____y_____  ___z___
 1925607.14     551605.48          66.81



Receiver

NAME                      =A-31
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                    =2.80
```

```
NUMBERFLOORS                         =   1


____x_____  _____y_____  ___z___
 1925605.69   551605.90        66.81



Receiver

NAME                      =A-32
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                    =   1


____x_____  _____y_____  ___z___
 1925604.24   551606.32        66.81



Receiver

NAME                      =A-33
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                    =   1


____x_____  _____y_____  ___z___
 1925602.79   551606.74        66.81



Receiver

NAME                      =A-34
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                    =   1


____x_____  _____y_____  ___z___
 1925601.34   551607.16        66.81



Receiver

NAME                      =A-35
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                    =   1


____x_____  _____y_____  ___z___
 1925599.89   551607.58        66.81



Receiver

NAME                      =A-36
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
```

NUMBERFLOORS   =   1

x	y	z
1925598.45	551608.00	66.81

Receiver

NAME   =A-37
RELHEIGHT1FLOOR   =2.40
FLOORHEIGHT   =2.80
NUMBERFLOORS   =   1

x	y	z
1925597.00	551608.42	66.81

Receiver

NAME   =A-38
RELHEIGHT1FLOOR   =2.40
FLOORHEIGHT   =2.80
NUMBERFLOORS   =   1

x	y	z
1925595.55	551608.84	66.81

Receiver

NAME   =A-39
RELHEIGHT1FLOOR   =2.40
FLOORHEIGHT   =2.80
NUMBERFLOORS   =   1

x	y	z
1925594.10	551609.27	66.81

Receiver

NAME   =A-40
RELHEIGHT1FLOOR   =2.40
FLOORHEIGHT   =2.80
NUMBERFLOORS   =   1

x	y	z
1925592.65	551609.69	66.81

Receiver

NAME   =A-41
RELHEIGHT1FLOOR   =2.40
FLOORHEIGHT   =2.80

```
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ____z____
 1925591.20     551610.11         66.85



Receiver

NAME                    =A-42
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ____z____
 1925589.75     551610.53         66.86



Receiver

NAME                    =A-43
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ____z____
 1925588.30     551610.95         66.88



Receiver

NAME                    =A-44
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ____z____
 1925586.85     551611.37         66.90



Receiver

NAME                    =A-45
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ____z____
 1925585.75     551611.58         66.87



Receiver

NAME                    =A-46
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
```

```
NUMBERFLOORS                      =  1


_____x_____  _____y_____  ___z___
 1925584.66    551611.78        66.83



Receiver

NAME                    =A-47
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                      =  1


_____x_____  _____y_____  ___z___
 1925583.65    551611.85        66.82



Receiver

NAME                    =A-48
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                      =  1


_____x_____  _____y_____  ___z___
 1925582.64    551611.92        66.82



Receiver

NAME                    =A-49
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                      =  1


_____x_____  _____y_____  ___z___
 1925581.51    551611.92        66.79



Receiver

NAME                    =B-01
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                      =  1


_____x_____  _____y_____  ___z___
 1925582.01    551615.88        68.70



Receiver

NAME                    =B-02
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                   =2.80
```

```
NUMBERFLOORS                          =   1


_____x_____  _____y_____  ___z____
 1925583.45     551615.46        68.54



Receiver

NAME                    =B-03
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                      =   1


_____x_____  _____y_____  ___z____
 1925584.90     551615.03        68.42



Receiver

NAME                    =B-04
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                      =   1


_____x_____  _____y_____  ___z____
 1925586.34     551614.61        68.40



Receiver

NAME                    =B-05
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                      =   1


_____x_____  _____y_____  ___z____
 1925587.78     551614.19        68.38



Receiver

NAME                    =B-06
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                      =   1


_____x_____  _____y_____  ___z____
 1925589.23     551613.76        68.36



Receiver

NAME                    =B-07
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
```

```
NUMBERFLOORS                      =  1


____x_____ _____y_____ ___z___
 1925590.67  551613.34       68.36



Receiver

NAME                 =B-08
RELHEIGHT1FLOOR             =2.40
FLOORHEIGHT              =2.80
NUMBERFLOORS              =  1


____x_____ _____y_____ ___z___
 1925592.12  551612.91       68.37



Receiver

NAME                 =B-09
RELHEIGHT1FLOOR             =2.40
FLOORHEIGHT              =2.80
NUMBERFLOORS              =  1


____x_____ _____y_____ ___z___
 1925593.56  551612.49       68.38



Receiver

NAME                 =A-04
RELHEIGHT1FLOOR             =2.40
FLOORHEIGHT              =2.80
NUMBERFLOORS              =  1


____x_____ _____y_____ ___z___
 1925644.83  551594.54       66.81



Receiver

NAME                 =A-05
RELHEIGHT1FLOOR             =2.40
FLOORHEIGHT              =2.80
NUMBERFLOORS              =  1


____x_____ _____y_____ ___z___
 1925643.38  551594.96       66.81



Receiver

NAME                 =A-06
RELHEIGHT1FLOOR             =2.40
FLOORHEIGHT              =2.80
```

```
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ____z____
  1925641.93    551595.38        66.81



Receiver

NAME                     =A-07
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                     =   1


_____x_____  _____y_____  ____z____
  1925640.48    551595.80        66.81



Receiver

NAME                     =A-08
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                     =   1


_____x_____  _____y_____  ____z____
  1925639.03    551596.22        66.81



Receiver

NAME                     =A-09
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                     =   1


_____x_____  _____y_____  ____z____
  1925637.58    551596.64        66.81



Receiver

NAME                     =C-17
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                     =   1


_____x_____  _____y_____  ____z____
  1925607.56    551619.05        72.63



Receiver

NAME                     =C-30
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                   =2.80
```

```
NUMBERFLOORS                          =   1


_____x_____ _____y_____ ___z___
 1925626.34   551613.54       70.76



Receiver

NAME                     =C-02
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                      =   1


_____x_____ _____y_____ ___z___
 1925585.89   551625.40       73.56



Receiver

NAME                     =C-35
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT               =2.80
NUMBERFLOORS                      =   1


_____x_____ _____y_____ ___z___
 1925633.56   551611.43       70.80



Receiver

NAME                     =C-18
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT               =2.80
NUMBERFLOORS                      =   1


_____x_____ _____y_____ ___z___
 1925609.00   551618.63       72.64



Receiver

NAME                     =C-29
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT               =2.80
NUMBERFLOORS                      =   1


_____x_____ _____y_____ ___z___
 1925624.89   551613.97       70.76



Receiver

NAME                     =C-42
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT               =2.80
```

```
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ____z____
  1925643.67       551608.46         70.85



Receiver

NAME                       =C-19
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                       =2.80
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ____z____
  1925610.44       551618.20         72.65



Receiver

NAME                       =C-05
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                       =2.80
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ____z____
  1925590.22       551624.13         73.60



Receiver

NAME                       =C-07
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                       =2.80
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ____z____
  1925593.11       551623.29         73.62



Receiver

NAME                       =C-11
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                       =2.80
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ____z____
  1925598.89       551621.59         73.67



Receiver

NAME                       =C-21
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                       =2.80
```

```
NUMBERFLOORS                          =    1


_____x_____   _____y_____   ___z___
 1925613.33     551617.36          72.67



Receiver

NAME                      =C-38
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                       =    1


_____x_____   _____y_____   ___z___
 1925637.89     551610.15          70.82



Receiver

NAME                      =C-32
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                       =    1


_____x_____   _____y_____   ___z___
 1925629.22     551612.70          70.78



Receiver

NAME                      =C-01
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                       =    1


_____x_____   _____y_____   ___z___
 1925584.44     551625.83          73.55



Receiver

NAME                      =C-44
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                       =    1


_____x_____   _____y_____   ___z___
 1925646.56     551607.61          70.86



Receiver

NAME                      =C-39
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                   =2.80
```

```
NUMBERFLOORS                         =    1
```

```
        x              y              z
  1925639.34     551609.73         70.83
```

Receiver

```
NAME                      =C-34
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                   =    1
```

```
        x              y              z
  1925632.11     551611.85         70.79
```

Receiver

```
NAME                      =C-12
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                   =    1
```

```
        x              y              z
  1925600.33     551621.17         73.69
```

Receiver

```
NAME                      =C-20
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                   =    1
```

```
        x              y              z
  1925611.89     551617.78         72.66
```

Receiver

```
NAME                      =C-26
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                   =    1
```

```
        x              y              z
  1925620.56     551615.24         70.74
```

Receiver

```
NAME                      =C-24
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                  =2.80
```

```
NUMBERFLOORS                        =    1
```

_____x_____	_____y_____	___z___
1925617.67	551616.09	72.71

```
Receiver

NAME                     =C-36
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                       =    1
```

_____x_____	_____y_____	___z___
1925635.00	551611.00	70.81

```
Receiver

NAME                     =C-10
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                       =    1
```

_____x_____	_____y_____	___z___
1925597.44	551622.02	73.66

```
Receiver

NAME                     =C-04
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                       =    1
```

_____x_____	_____y_____	___z___
1925588.77	551624.56	73.58

```
Receiver

NAME                     =C-14
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                       =    1
```

_____x_____	_____y_____	___z___
1925603.22	551620.32	72.60

```
Receiver

NAME                     =C-03
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                  =2.80
```

```
NUMBERFLOORS                          =   1


_____x_____ _____y_____ ____z____
 1925587.33     551624.98         73.57



Receiver

NAME                     =C-37
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                      =   1


_____x_____ _____y_____ ____z____
 1925636.45     551610.58         70.81



Receiver

NAME                     =C-41
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                      =   1


_____x_____ _____y_____ ____z____
 1925642.23     551608.88         70.84



Receiver

NAME                     =C-22
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                      =   1


_____x_____ _____y_____ ____z____
 1925614.78     551616.93         72.68



Receiver

NAME                     =C-06
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                      =   1


_____x_____ _____y_____ ____z____
 1925591.66     551623.71         73.61



Receiver

NAME                     =C-13
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
```

```
NUMBERFLOORS                       =   1
```

x	y	z
1925601.78	551620.75	73.70

```
Receiver

NAME                    =C-08
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                     =   1
```

x	y	z
1925594.55	551622.86	73.63

```
Receiver

NAME                    =C-40
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                     =   1
```

x	y	z
1925640.78	551609.31	70.84

```
Receiver

NAME                    =C-25
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                     =   1
```

x	y	z
1925619.11	551615.66	70.73

```
Receiver

NAME                    =C-16
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                     =   1
```

x	y	z
1925606.11	551619.47	72.62

```
Receiver

NAME                    =C-31
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                   =2.80
```

```
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ___z___
 1925627.78    551613.12        70.77



Receiver

NAME                      =C-28
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                    =   1


_____x_____  _____y_____  ___z___
 1925623.45    551614.39        70.75



Receiver

NAME                      =C-45
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                 =2.80
NUMBERFLOORS                    =   1


_____x_____  _____y_____  ___z___
 1925648.01    551607.19        70.87



Receiver

NAME                      =C-15
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                 =2.80
NUMBERFLOORS                    =   1


_____x_____  _____y_____  ___z___
 1925604.67    551619.90        72.61



Receiver

NAME                      =C-43
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                 =2.80
NUMBERFLOORS                    =   1


_____x_____  _____y_____  ___z___
 1925645.12    551608.04        70.86



Receiver

NAME                      =C-27
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                 =2.80
```

```
NUMBERFLOORS                        =    1


_____x_____  _____y_____  ____z____
  1925622.00      551614.81        70.74



Receiver

NAME                      =C-33
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                     =    1


_____x_____  _____y_____  ____z____
  1925630.67      551612.27        70.79



Receiver

NAME                      =C-23
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                     =    1


_____x_____  _____y_____  ____z____
  1925616.22      551616.51        72.69



Receiver

NAME                      =C-09
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                     =    1


_____x_____  _____y_____  ____z____
  1925596.00      551622.44        73.65



Receiver

NAME                      =D-10
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
NUMBERFLOORS                     =    1


_____x_____  _____y_____  ____z____
  1925646.91      551652.99        71.66



Receiver

NAME                      =D-11
RELHEIGHT1FLOOR                      =2.40
FLOORHEIGHT                      =2.80
```

```
NUMBERFLOORS                          =    1
```

```
_____x_____  _____y_____  ____z____
 1925648.36       551652.56           71.57
```

```
Receiver
```

```
NAME                      =D-12
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                        =    1
```

```
_____x_____  _____y_____  ____z____
 1925649.80       551652.12          71.49
```

```
Receiver
```

```
NAME                      =D-13
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                        =    1
```

```
_____x_____  _____y_____  ____z____
 1925651.25      551651.68          71.40
```

```
Receiver
```

```
NAME                      =D-14
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                        =    1
```

```
_____x_____  _____y_____  ____z____
 1925652.70      551651.25          71.32
```

```
Receiver
```

```
NAME                      =D-15
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                        =    1
```

```
_____x_____  _____y_____  ____z____
 1925654.14      551650.81          71.24
```

```
Receiver
```

```
NAME                      =D-16
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                    =2.80
```

```
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ____z____
 1925655.59      551650.38         71.15



Receiver

NAME                    =D-17
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                     =2.80
NUMBERFLOORS                      =   1


_____x_____  _____y_____  ___z____
 1925657.03      551649.94         71.07



Receiver

NAME                    =D-18
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                      =   1


_____x_____  _____y_____  ___z____
 1925658.48      551649.50         70.98



Receiver

NAME                    =D-19
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                      =   1


_____x_____  _____y_____  ___z____
 1925659.92      551649.07         70.90



Receiver

NAME                    =D-20
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                      =   1


_____x_____  _____y_____  ___z____
 1925661.37      551648.63         70.81



Receiver

NAME                    =D-21
RELHEIGHT1FLOOR                    =2.40
FLOORHEIGHT                   =2.80
```

```
NUMBERFLOORS                          =   1


_____x_____ _____y_____ ___z___
 1925662.81   551648.19       70.73



Receiver

NAME                    =D-22
RELHEIGHT1FLOOR                =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                 =   1


_____x_____ _____y_____ ___z___
 1925663.84   551648.23       70.67



Receiver

NAME                    =D-23
RELHEIGHT1FLOOR                =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                 =   1


_____x_____ _____y_____ ___z___
 1925664.86   551648.26       70.62



Receiver

NAME                    =D-24
RELHEIGHT1FLOOR                =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                 =   1


_____x_____ _____y_____ ___z___
 1925665.49   551649.02       70.60



Receiver

NAME                    =D-25
RELHEIGHT1FLOOR                =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                 =   1


_____x_____ _____y_____ ___z___
 1925666.12   551649.78       70.58



Receiver

NAME                    =D-26
RELHEIGHT1FLOOR                =2.40
FLOORHEIGHT                  =2.80
```

```
NUMBERFLOORS                            =   1


_____x_____  _____y_____  ___z___
 1925666.48   551651.01          70.58



Receiver

NAME                       =D-27
RELHEIGHT1FLOOR                  =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                   =   1


_____x_____  _____y_____  ___z___
 1925666.85   551652.25          70.58



Receiver

NAME                       =D-28
RELHEIGHT1FLOOR                  =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                   =   1


_____x_____  _____y_____  ___z___
 1925667.21   551653.48          70.58



Receiver

NAME                       =D-29
RELHEIGHT1FLOOR                  =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                   =   1


_____x_____  _____y_____  ___z___
 1925667.57   551654.72          70.58



Receiver

NAME                       =D-30
RELHEIGHT1FLOOR                  =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                   =   1


_____x_____  _____y_____  ___z___
 1925667.94   551655.95          70.58



Receiver

NAME                       =D-31
RELHEIGHT1FLOOR                  =2.40
FLOORHEIGHT                  =2.80
```

```
NUMBERFLOORS                          =  1


_____x_____  _____y_____  ____z____
 1925668.30     551657.19         70.58



Receiver

NAME                    =D-01
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                    =2.80
NUMBERFLOORS                   =  1


_____x_____  _____y_____  ____z____
 1925633.91     551656.92         72.42



Receiver

NAME                    =D-02
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                   =  1


_____x_____  _____y_____  ___z___
 1925635.35     551656.49       72.34



Receiver

NAME                    =D-03
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                   =  1


_____x_____  _____y_____  ___z___
 1925636.80     551656.05       72.25



Receiver

NAME                    =D-04
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                  =2.80
NUMBERFLOORS                   =  1


_____x_____  _____y_____  ___z___
 1925638.24     551655.61       72.17



Receiver

NAME                    =D-05
RELHEIGHT1FLOOR                   =2.40
FLOORHEIGHT                  =2.80
```

```
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ___z___
 1925639.69    551655.18         72.08



Receiver

NAME                        =D-06
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                       =2.80
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ___z___
 1925641.13    551654.74         72.00



Receiver

NAME                        =D-07
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                       =2.80
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ___z___
 1925642.58    551654.30         71.91



Receiver

NAME                        =D-08
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                       =2.80
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ___z___
 1925644.02    551653.87         71.83



Receiver

NAME                        =D-09
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                       =2.80
NUMBERFLOORS                        =   1


_____x_____  _____y_____  ___z___
 1925645.47    551653.43         71.74



Receiver

NAME                        =B-46
RELHEIGHT1FLOOR                     =2.40
FLOORHEIGHT                       =2.80
```

```
NUMBERFLOORS                    =   1


_____x_____  _____y_____  ___z____
 1925646.63     551596.93        67.69



Receiver

NAME                     =A-03
RELHEIGHT1FLOOR                  =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                    =   1


_____x_____  _____y_____  ___z____
 1925645.89     551594.23        66.81



Receiver

NAME                     =C-46
RELHEIGHT1FLOOR                  =2.40
FLOORHEIGHT                   =2.80
NUMBERFLOORS                    =   1


_____x_____  _____y_____  ___z____
 1925649.07     551606.88        70.88



Point source

NAME                     =Blower_1


_____x_____  _____y_____  ___z____
 1925636.12     551591.32        67.67



Point source

NAME                     =Blower_2


_____x_____  _____y_____  ___z____
 1925634.99     551591.65        67.67



Point source

NAME                     =Blower_3


_____x_____  _____y_____  ___z____
 1925633.84     551591.99        67.67



Point source

NAME                     =Blower_4
```

```
_____x_____  _____y_____  ___z___
 1925636.50     551592.75        67.67
```

Point source

NAME   =Blower_5

```
_____x_____  _____y_____  ___z___
 1925636.75     551593.64        67.67
```

Point source

NAME   =Blower_6

```
_____x_____  _____y_____  ___z___
 1925635.56     551593.82        67.67
```

Point source

NAME   =Blower_7

```
_____x_____  _____y_____  ___z___
 1925637.18     551595.07        67.67
```

Point source

NAME   =Blower_8

```
_____x_____  _____y_____  ___z___
 1925636.05     551595.40        67.67
```

Point source

NAME   =Blower_9

```
_____x_____  _____y_____  ___z___
 1925634.91     551595.75        67.67
```