

COBBLE HILL
GRADING SPECIAL USE PERMIT
FOR TEMPORARY MATERIAL PROCESSING

PREPARED FOR:

8900 LAKESIDE, LLC

PREPARED BY:



NOVEMBER 8, 2023

PROJECT: 21087.05

Cobble Hill Grading Special Use Permit for Temporary Material Processing

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TAB A

Washoe County Development Application

Your entire application is a public record. If you have a concern about releasing personal information, please contact Planning and Building staff at 775.328.6100.

| | | | |
|---|-----------------|--|-----------------|
| Project Information | | Staff Assigned Case No.: _____ | |
| Project Name: CobbleHill Grading SUP for Temporary Material Processing | | | |
| Project Description: Requested is a grading special use permit to allow for grading of a site of 1.02+/- acres to be used temporarily for on-site material processing. The proposed facility will allow for the efficient creation of rip-rap and structural material for use on the site for lining drainage channels and the construction of private streets and the emergency access road within the approved Cobble Hill (formerly Lakeside) Custom Lot Subdivision | | | |
| Project Address: 8900 Lakeside Drive | | | |
| Project Area (acres or square feet): 72.8+/- acres | | | |
| Project Location (with point of reference to major cross streets AND area locator): The subject parcel is located northwest of the intersection of Lakeside Drive and Holcomb Ranch Road | | | |
| Assessor's Parcel No.(s): | Parcel Acreage: | Assessor's Parcel No.(s): | Parcel Acreage: |
| 041-130-58 | 72.8+/- ac | | |
| Indicate any previous Washoe County approvals associated with this application: Case No.(s). WTM21-013, WSUP22-0010, WAC22-005 | | | |
| Applicant Information (attach additional sheets if necessary) | | | |
| Property Owner: | | Professional Consultant: | |
| Name: 8900 Lakeside LLC | | Name: CFA, Inc. | |
| Address: 2100 Manzanita Lane | | Address: 1150 Corporate Blvd | |
| Reno, NV | Zip: 89505 | Reno, NV | Zip: 89502 |
| Phone: | Fax: | Phone: 775-856-7073 | Fax: |
| Email: roger@thomas creekdevelopment.com | | Email: dsnelgrove@cfareno.com | |
| Cell: 775-750-9583 | Other: | Cell: | Other: |
| Contact Person: Roger Davidson | | Contact Person: R. David Snelgrove, AICP | |
| Applicant/Developer: | | Other Persons to be Contacted: | |
| Name: Same as Owner | | Name: 8900 Lakeside LLC | |
| Address: | | Address: 2100 Manzanita Lane | |
| | Zip: | Reno, NV | Zip: 89505 |
| Phone: | Fax: | Phone: | Fax: |
| Email: | | Email: adam@thomas creekdevelopment.com | |
| Cell: | Other: | Cell: 775-470-0650 | Other: |
| Contact Person: | | Contact Person: Adam Giordano | |
| For Office Use Only | | | |
| Date Received: | Initial: | Planning Area: | |
| County Commission District: | | Master Plan Designation(s): | |
| CAB(s): | | Regulatory Zoning(s): | |

Special Use Permit Application Supplemental Information

(All required information may be separately attached)

1. What is the project being requested?

Requested is a grading special use permit to allow for grading of a site of 1.02+/- acres to be used temporarily for on-site material processing. The proposed facility will allow for the efficient creation of rip-rap and structural material for use on the site for lining drainage channels and the construction of private streets and the emergency access road within the approved Cobble Hill (formerly Lakeside) Custom Lot Subdivision

2. Provide a site plan with all existing and proposed structures (e.g. new structures, roadway improvements, utilities, sanitation, water supply, drainage, parking, signs, etc.)

A preliminary site plan has been provided with this application showing a pad area where the equipment, sound barrier and stockpiling is proposed to occur.

3. What is the intended phasing schedule for the construction and completion of the project?

The proposed use will not be phased and will only be operated during the construction of the project roadways and other infrastructure improvements to serve the approved custom lot subdivision.

4. What physical characteristics of your location and/or premises are especially suited to deal with the impacts and the intensity of your proposed use?

The processing equipment has been located such that it is a reasonably distant from all surrounding, existing uses. Sound barrier screening that will be 16 feet tall is proposed to be incorporated. A noise analysis, modeling the proposed location of the equipment, has been prepared and is provided with this application.

5. What are the anticipated beneficial aspects or affects your project will have on adjacent properties and the community?

It is estimated that approximately 1,800 round trips of construction trucks can be reduced by allowing for the processing of materials on-site. Additionally, since the materials that will be processed onsite come from the site, the color of the processed materials will match the color characteristics of the site, rather than requiring artificial coloration of such materials as rip-rap to help appear natural for the location.

6. What are the anticipated negative impacts or affect your project will have on adjacent properties? How will you mitigate these impacts?

Noises in association with the processing machinery operation is the primary negative impact. A noise analysis that models the proposed equipment noise levels is provided. Hours of operation of the processing machinery can be limited and the applicant is willing to commit to a limited number of months/days that the equipment can be located on the site for operation.

7. Provide specific information on landscaping, parking, type of signs and lighting, and all other code requirements pertinent to the type of use being purposed. Show and indicate these requirements on submitted drawings with the application.

No parking, landscaping or signage are proposed for this specific use.

8. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that apply to the area subject to the special use permit request? (If so, please attach a copy.)

| | |
|------------------------------|--|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|------------------------------|--|

9. Utilities:

| | |
|---------------------------------|------------------|
| a. Sewer Service | Washoe County |
| b. Electrical Service | NV Energy |
| c. Telephone Service | AT&T |
| d. LPG or Natural Gas Service | NV Energy |
| e. Solid Waste Disposal Service | Waste Management |
| f. Cable Television Service | Charter Spectrum |
| g. Water Service | Well |

For most uses, Washoe County Code, Chapter 110, Article 422, Water and Sewer Resource Requirements, requires the dedication of water rights to Washoe County. Please indicate the type and quantity of water rights you have available should dedication be required.

| | | | |
|--------------------|-------------------|--------------------|-------|
| h. Permit # | portion of #78528 | acre-feet per year | 60 |
| i. Certificate # | | acre-feet per year | |
| j. Surface Claim # | Claim #70 | acre-feet per year | 184.5 |
| k. Other # | | acre-feet per year | |

Title of those rights (as filed with the State Engineer in the Division of Water Resources of the Department of Conservation and Natural Resources).

| |
|--|
| |
|--|

10. Community Services (provided and nearest facility):

| | |
|-------------------------|----------------|
| a. Fire Station | Not Applicable |
| b. Health Care Facility | Not Applicable |
| c. Elementary School | Not Applicable |
| d. Middle School | Not Applicable |
| e. High School | Not Applicable |
| f. Parks | Not Applicable |
| g. Library | Not Applicable |
| h. Citifare Bus Stop | Not Applicable |

**Special Use Permit Application
for Grading
Supplemental Information**
(All required information may be separately attached)

1. What is the purpose of the grading?

Grading is proposed to create a pad area for the location of the processing machinery, location of sound barrier and stockpiling areas of material to be processed and materials that have been processed.

2. How many cubic yards of material are you proposing to excavate on site?

The proposed pad grading for this facility will account for 1,300+/- CY of cut (excavation).

3. How many square feet of surface of the property are you disturbing?

The surface level disturbance is proposed to be 1.02+/- acres.

4. How many cubic yards of material are you exporting or importing? If none, how are you managing to balance the work on-site?

The existing difference between the cut and fill in the preliminary plans will be accommodated and balanced with final grading of the pad for the proposed use.

5. Is it possible to develop your property without surpassing the grading thresholds requiring a Special Use Permit? (Explain fully your answer.)

No. As the Grading Ordinance (Article 438) is currently written, only the smallest of small projects can avoid triggering a special use permit for grading.

6. Has any portion of the grading shown on the plan been done previously? (If yes, explain the circumstances, the year the work was done, and who completed the work.)

Grading along the roadway edges at the north and south ends of the proposed graded pad were approved for grading with the initial tentative map approval (WTM21-013 & WSUP22-0010) and subsequently with an amendment of conditions approval (WAC22-005)

7. Have you shown all areas on your site plan that are proposed to be disturbed by grading? (If no, explain your answer.)

Yes.

8. Can the disturbed area be seen from off-site? If yes, from which directions and which properties or roadways?

Views to the proposed graded areas are available from the northeast, east and south. Views at the intersection of Lakeside Drive and Holcomb Ranch Road are available. Topography on the overall subject parcel helps to block the view of the specific project area from the other direction. Other approved grading on the site for the project roadway construction will also be visible so the additional graded area will not be significant relative to that which is already approved.

9. Could neighboring properties also be served by the proposed access/grading requested (i.e. if you are creating a driveway, would it be used for access to additional neighboring properties)?

No, this proposed pad grading and equipment is specific to construction on the Cobble Hill subdivision site. The material that will be processed is only proposed to be used on the subject parcel for the construction effort.

10. What is the slope (horizontal/vertical) of the cut and fill areas proposed to be? What methods will be used to prevent erosion until the revegetation is established?

3:1 slopes are the maximum that are proposed on the preliminary grading plan.

11. Are you planning any berms?

| | | | |
|-----|----|---|--|
| Yes | No | X | If yes, how tall is the berm at its highest? |
|-----|----|---|--|

12. If your property slopes and you are leveling a pad for a building, are retaining walls going to be required? If so, how high will the walls be and what is their construction (i.e. rockery, concrete, timber, manufactured block)?

No retaining walls are proposed nor required for the creation of the pad area.

13. What are you proposing for visual mitigation of the work?

Sound buffer screening (16' tall) and stockpiling of materials will be used for screening the equipment and dampen noises.

14. Will the grading proposed require removal of any trees? If so, what species, how many and of what size?

No.

15. What type of revegetation seed mix are you planning to use and how many pounds per acre do you intend to broadcast? Will you use mulch and, if so, what type?

A proposed seed mix is provided within the application materials under Tab D.

16. How are you providing temporary irrigation to the disturbed area?

After the use of the pad for the intended use, the pad area will be seeded and temporarily irrigated to help mitigate dust and erosion.

17. Have you reviewed the revegetation plan with the Washoe Storey Conservation District? If yes, have you incorporated their suggestions?

No.

18. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that may prohibit the requested grading?

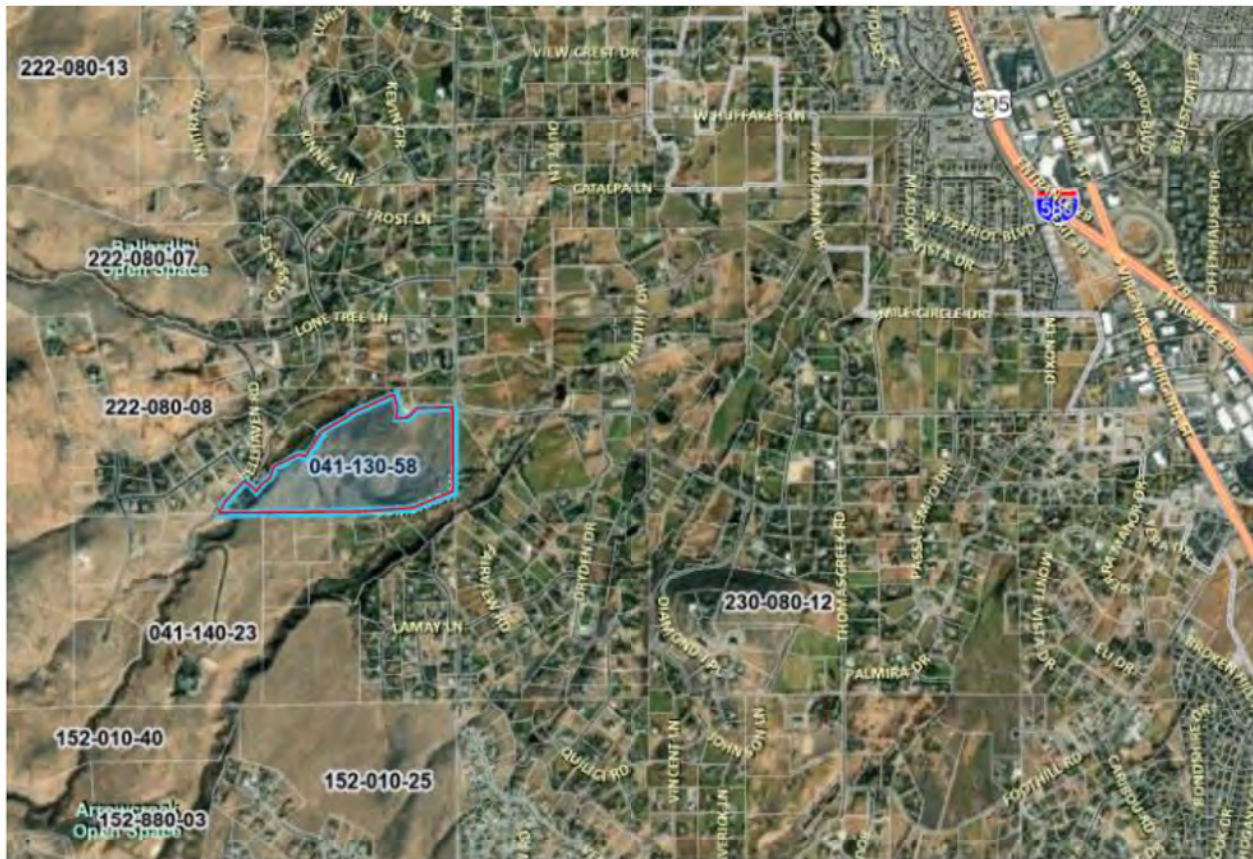
| | | | |
|-----|----|-------------------------------------|-------------------------------|
| Yes | No | <input checked="" type="checkbox"/> | If yes, please attach a copy. |
|-----|----|-------------------------------------|-------------------------------|

TAB B

Property Location

The subject property is located southwest of Lakeside Drive and Brady Ranch Road in southwest Reno. The subject property totals 72.8+/- acres of land in one parcel. The Washoe County Assessor's office recognizes the parcel as APN 041-130-58. An aerial based vicinity map is provided below showing the location of the subject property and the general lot patterning of the surrounding properties.

Vicinity Map



Project Background

The project (Lakeside Custom Lot Subdivision) was approved on November 1, 2022, under Washoe County case numbers WTM21-013 and WSUP 22-0010. The original application approved a tentative subdivision map and associated grading for a subdivision containing 24 custom home lots. An amendment to conditions application was approved on June 6, 2023, under Washoe County case number WAC23-0005. The amendment to conditions allowed for modifications to the grading allowances to accommodate for a pedestrian path system, a surface water irrigation pond, an enlarged detention basin and drainage channels for stormwater runoff to the detention pond. The Action Orders for these cases are provided in Tab D with this application.

One of the significant neighborhood concerns during the initial approval of the project involved traffic impacts on area streets (Lakeside Drive and Holcomb Ranch Road). While working with the project contractor (A&K Earthmovers), the project developer/applicant recognized that processing materials on-site, rather than importing rock and hauling unusable materials off-site would help to minimize the overall volume of traffic that would be typical during the construction process for the major project infrastructure. As such, the applicant has met with Washoe County and conducted a neighborhood meeting to discuss processing of material on-site as opposed to running trucks in and out of the site to obtain the necessary material.

Project Request

Requested is a grading special use permit to allow for the location of a 1.02+/- acre pad area to be used for on-site material processing for the efficient creation of riprap and structural material for use on the site for lining drainage channels and the construction of private streets and the emergency access road. The proposed use will provide no signage other than any necessary OSHA or other safety signage that would be typical on a construction site. No lighting is proposed as the use would only operate during daytime hours. No landscaping is proposed as such would not be required in a construction zone environment, however revegetation through seeding after the use is completed is proposed. No buildings nor structures are proposed with this use.

The grading of this pad only equates to 1.02 acres of disturbance with maximum cut depths of 3.66+/- feet and maximum fill depths of 4.0+/- feet. As this project site is on a parcel that is already approved for grading, the 1.02 acres of disturbance and the overall cut and fill areas can be considered additive to the previously approved quantities. Adding the 1.02 acres of disturbance area and the 1300+/- CY of cut and fill to the totals that have been previously approved in WAC22-005, the total grading quantities on APN 041-130-58 would be 42,357+/- CY of cut and 27,281+/- CY of fill on the entire 72.8+/- acres subject parcel. The entire pad area is within 0-15% slopes, as identified on the Slope Analysis Map that has been provided with the project mapping within this application.

Given the consideration of the larger approved project on the subject parcel, a special use permit specific to the grading of the pad area for the proposed material processing is being requested for this area and volume that is in addition to the prior approval.

110.438.35 (a)(1) – Grading on slopes less than or flatter than 15%

Area - (i)(C) – Grading of an area of more than four (4) acres on a parcel of any size.

Volume (ii)(A) – Excavation of five thousand (5,000) cubic yards or more whether the material is intended to be permanently located on the project site or temporarily stored on a site for relocation to another, final site.

Processing Machinery and Project Site Area Uses

The machinery that is proposed to be used for the processing of the material will be identical or similar the model number and image shown below. The machinery includes a crusher jaw that will break down larger rocks and boulders to a size suitable for use in the infrastructure construction on the approved Cobble Hill subdivision.

The machinery includes a vibrating grizzly feeder, jaw crusher that can sort the processed materials. The other proposed uses on the pad area include stockpiling of the materials that need to be processed and processed materials. Sound buffer screening (explained in the following section – Noise Modeling Report and Noise Mitigation) is proposed on the east and south sides of the processing machinery.

Dust control for the machinery will be incorporated in with sprayers that keep dust down. The pad area is not proposed to be graveled as there will be some flexibility and movement of stockpiles that would disturb and disrupt any gravel that would be placed. Rather, the site will be graded and dust will be controlled through the application of construction water. Mobile water fill tank(s) will be located on the construction site, potentially within this pad area to provide construction water needed for dust control, not only from this proposed facility but the entire construction operation.



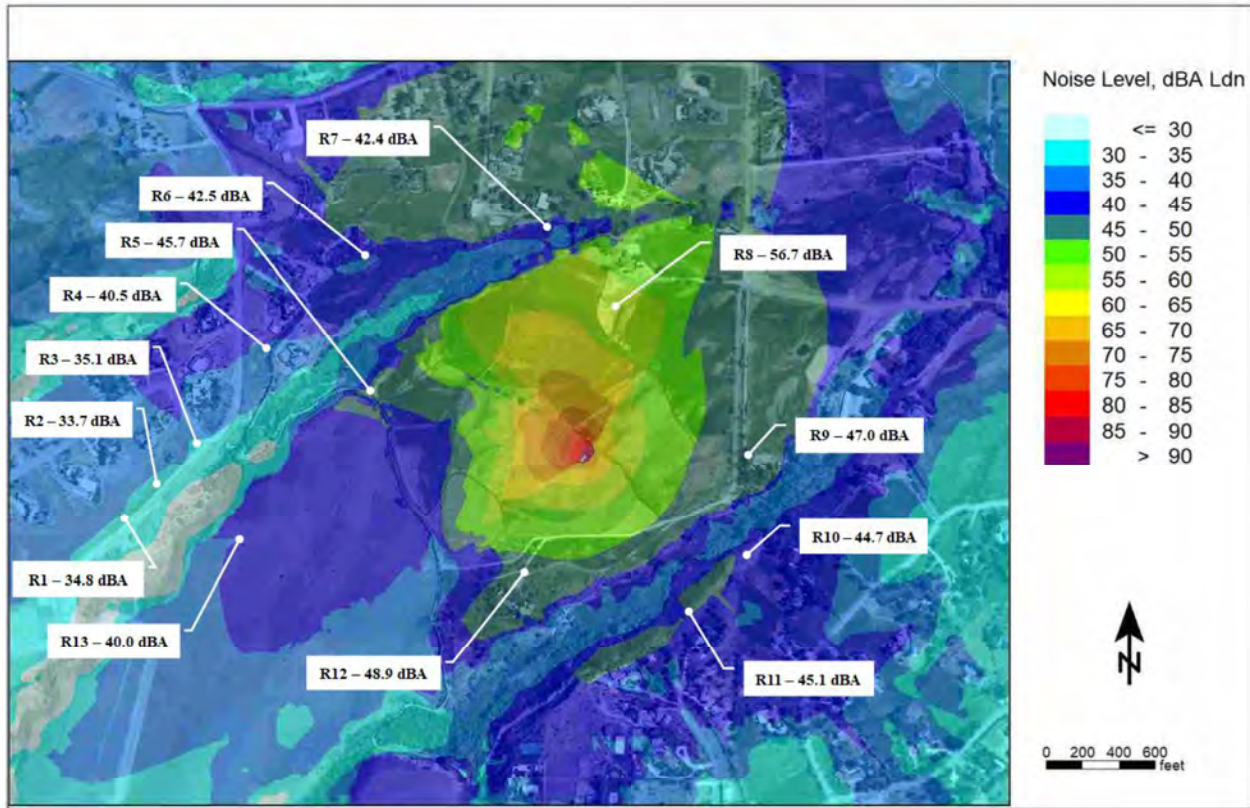
FT2650
Mobile Jaw Plant



Noise Modeling Report and Noise Mitigation

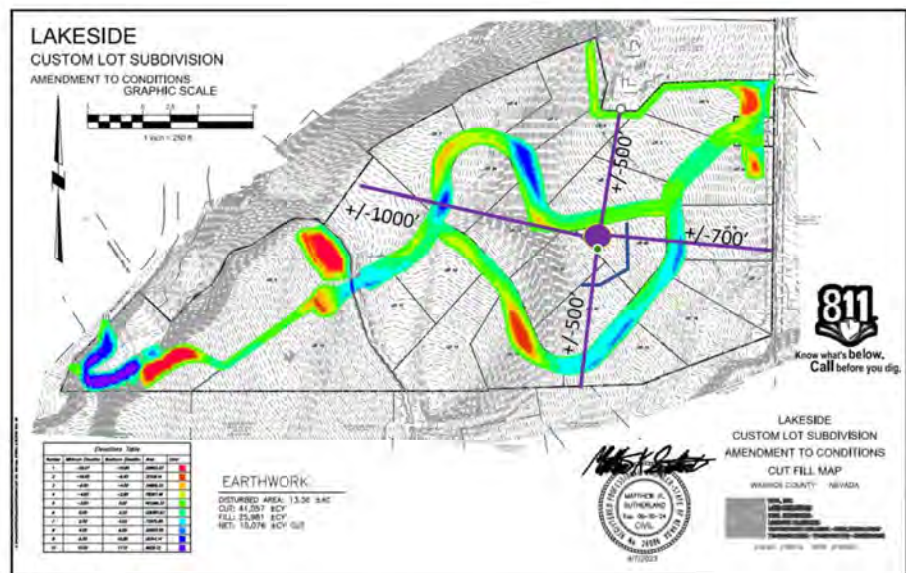
One of the biggest concerns that arises from the use of any processing/crushing equipment is the associated noise. To help understand and quantify the noise levels that would be specific to the equipment used for temporary material processing the applicant commissioned a noise modeling report for the proposed equipment. The findings of this report show that without mitigation, the sounds generated from the material processing machinery on the site at nearby residences would all be below the Washoe County noise thresholds for residential abutment as defined in WCD 110.414.05(b) 65 Ldn at property line.

Following is a noise contour exhibit from the noise modeling report (provided in Tab D) that shows the modelled noise levels that would be anticipated (with mitigation measures in place) at the nearest adjacent residential uses. As noted previously, all of the noise levels that have been modeled are below the threshold allowed by County Code. The highest estimated reading is 56.7 dBA Ldn at the nearest property to the north of the proposed processing machinery.



Mitigation Measures Proposed

Distance from Surrounding Properties - The processing equipment, which will be the primary generator of noise from this facility has been located between 500 and 1000 feet from the adjacent property lines, which will help to dissipate much of the noise that is generated by the operation of the machinery.



Incorporation of Sound Screening Fencing – The plan proposes incorporation of sound screen fencing at a height of 16 feet to provide sound dampening on the south and western sides of the machinery, where the existing site topography does not provide substantial visual or sound buffering. Below is an example photo and an aerial image of similar sound buffering fencing that was employed at a well drilling site for TMWA in Spanish Springs. It should be noted that the well drilling operation was within 200 feet of the

residential property line to the south and within 150 feet of the nearest residential property line to the west, across Richard Springs Boulevard. Additional detail regarding the type of sound barrier fencing is provided in Tab D.



Hours During Which Machinery May Operate – It was proposed at the neighborhood meeting that the processing machinery can be limited in the hours per day that it may operate to 7:00 AM and 4:00 PM. During this timeframe other construction equipment will be present on-site and in operation, much of the time closer to the adjacent property lines actively grading the site for the roadways and infrastructure improvements associated with the project that have already been approved. Photos of the type of equipment that will be on the site in grading and construction of the approved infrastructure for the subdivision are provided below.



Total number of Days Processing Machinery can be On-site – During the neighborhood meeting, the question arose as to how long the processing machinery would be on the site. The applicant is willing to voluntarily commit to having the machinery on the site for no longer than 180 days from the date of location on the property and first operation. It should be noted that the processing machinery will not operate continuously, only during times when materials are available to be processed and needed for use on the site.

Special Use Permit Findings

Section 110.810.30 of the Washoe County Development Code presents the legal findings which must be made for the approval of a special use permit request. Below is a listing of each finding and the applicant's response to how each finding is met.

(a) Consistency. That the proposed use is consistent with the action programs, policies, standards and maps of the Master Plan and the Southwest Truckee Meadows Area Plan.

Response: The addition of on-site materials processing does not impact the review of findings that was made with the original tentative map and special use permit for grading that was approved under WTM21-013 & WSUP22-0010. The proposed addition of this facility and included pad grading will provide for fewer construction truck trips than have already been approved per the existing approval(s). It has been estimated by A&K Earthmovers that 1,800+/- round trips of material hauling trucks can be reduced from the local and regional roads with the allowance of this equipment for on-site processing of materials.

(b) Improvements. That adequate utilities, roadway improvements, sanitation, water supply, drainage, and other necessary facilities have been provided, the proposed improvements are properly related to existing and proposed roadways, and an adequate public facilities determination has been made in accordance with Division Seven.

Response: The materials that will be available, on-site from the allowance of this use will provide an efficient and readily available source of materials needed in the construction of many of the improvements that are identified in this finding. The materials generated from the processing machinery will create the rip-rap and structural material needed for lining drainage channels and the construction of private streets and the emergency access road that have been approved within the Cobble Hill project.

(c) Site Suitability. That the site is physically suitable for grading and for the intensity of such a development.

Response: The applicant has located the machinery as reasonably far from any exterior property line while remaining in the gentler sloped areas of the site to minimize grading impacts from the creation of the necessary pad. The pad that will remain can be used by a future residential property owner as the development area for a future custom home, driveway and yard improvements, as was envisioned in the original approval of the 24-lot custom home subdivision.

(d) Issuance Not Detrimental. That issuance of the permit will not be significantly detrimental to the public health, safety or welfare; injurious to the property or improvements of adjacent properties; or detrimental to the character of the surrounding area.

Response: Noise associated with the operation of the proposed material processing equipment have been shown through the provided noise modeling report to be lower than allowed by the Washoe County Code at property line(s). Additionally, the applicant will incorporate sound buffer screening to help dampen noise levels to downhill adjacent properties and will voluntarily limit the hours that the machinery can be operated to coincide with the general hours during which construction and heavy equipment would already be operating on the site for the approved construction activities.

(e) Effect on a Military Installation. Issuance of the permit will not have a detrimental effect on the location, purpose or mission of the military installation.

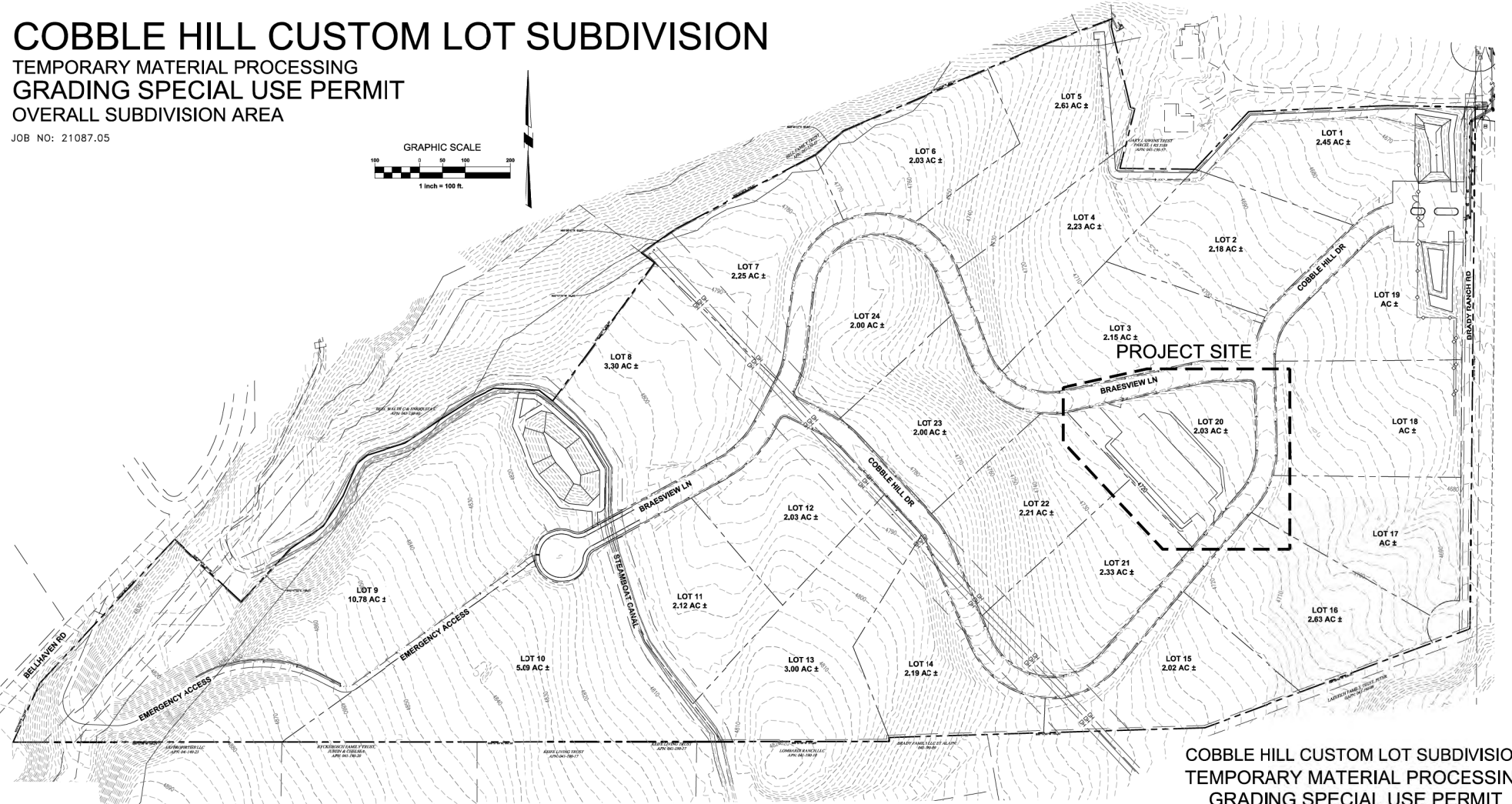
Response: There are no military installations within proximity to the subject property.

TAB C

COBBLE HILL CUSTOM LOT SUBDIVISION

TEMPORARY MATERIAL PROCESSING
GRADING SPECIAL USE PERMIT
OVERALL SUBDIVISION AREA

JOB NO: 21087.05



COBBLE HILL CUSTOM LOT SUBDIVISION
TEMPORARY MATERIAL PROCESSING
GRADING SPECIAL USE PERMIT
OVERALL SUBDIVISION AREA
RENO WASHOE NEVADA

PRELIMINARY NOT
FOR CONSTRUCTION



cfa CFA, INC.
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1150 CORPORATE BOULEVARD • RENO, NEVADA 89502
775-856-1150 MAIN • 775-856-1160 FAX • CFARENO.COM

JOB NO: 21087.05 DATE: 11-8-23

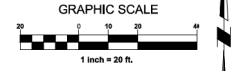
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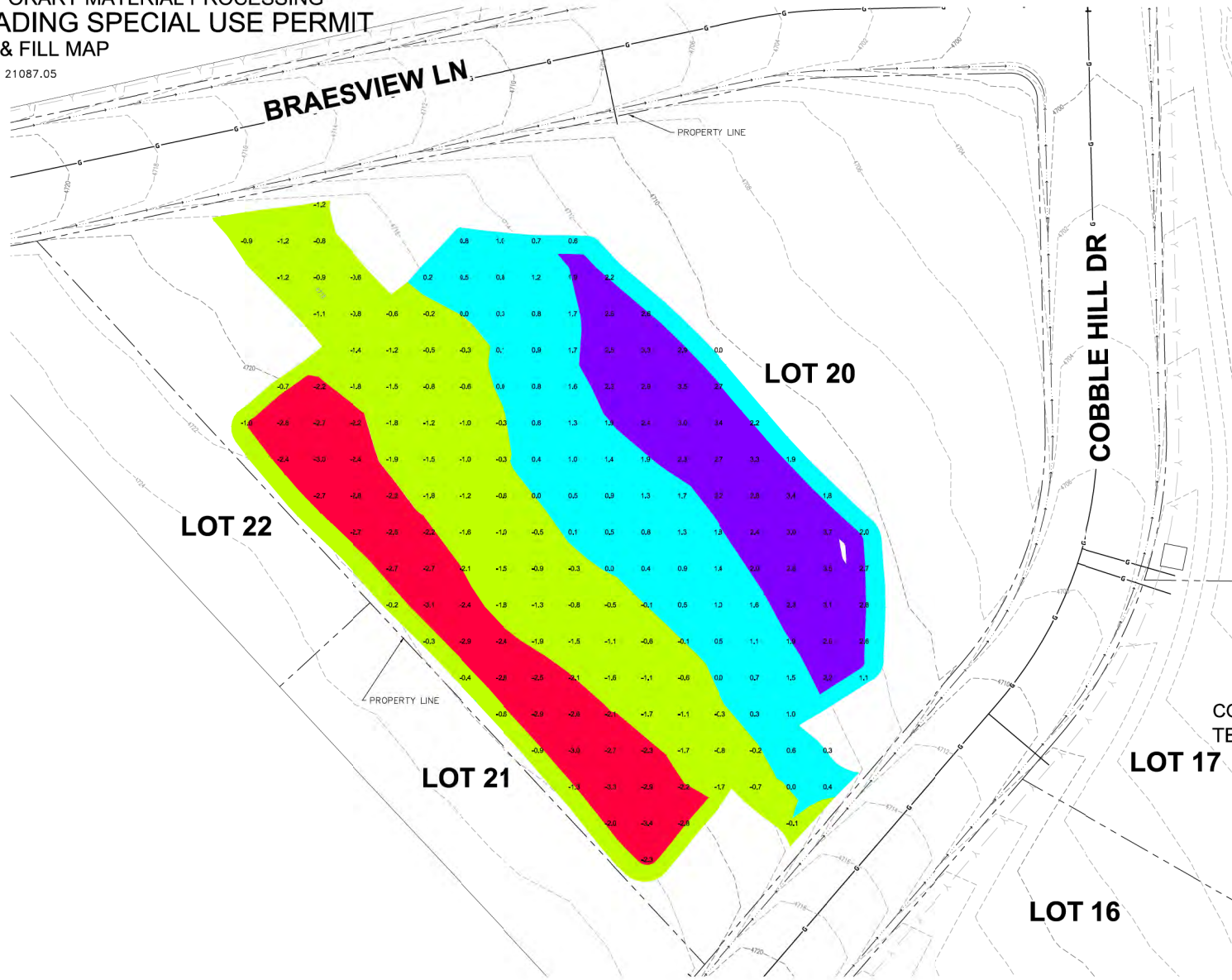
COBBLE HILL CUSTOM LOT SUBDIVISION

TEMPORARY MATERIAL PROCESSING
GRADING SPECIAL USE PERMIT
CUT & FILL MAP

JOB NO: 21087.05



PRELIMINARY NOT
FOR CONSTRUCTION



EARTHWORK

DISTURBED AREA: 1.02 ±AC
CUT: 1,350 ±CY
FILL: 1,220 ±CY
NET: 90 ±CY CUT
MAX DEPTH OF CUT: 3.66 ±FT
MAX DEPTH OF FILL: 4.00 ±FT

| Elevations Table | | | | |
|------------------|-------------------|-------------------|----------|--------|
| Number | Minimum Elevation | Maximum Elevation | Area | Color |
| 1 | -4.00 | -2.00 | 7598.50 | Red |
| 2 | -1.99 | 0.00 | 16138.24 | Yellow |
| 3 | 0.01 | 2.00 | 13033.59 | Cyan |
| 4 | 2.01 | 4.00 | 7312.14 | Purple |

COBBLE HILL CUSTOM LOT SUBDIVISION
TEMPORARY MATERIAL PROCESSING
LOT 17 GRADING SPECIAL USE PERMIT
CUT & FILL MAP

RENO WASHOE NEVADA

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JOB NO: 21087.05 DATE: 11-8-23

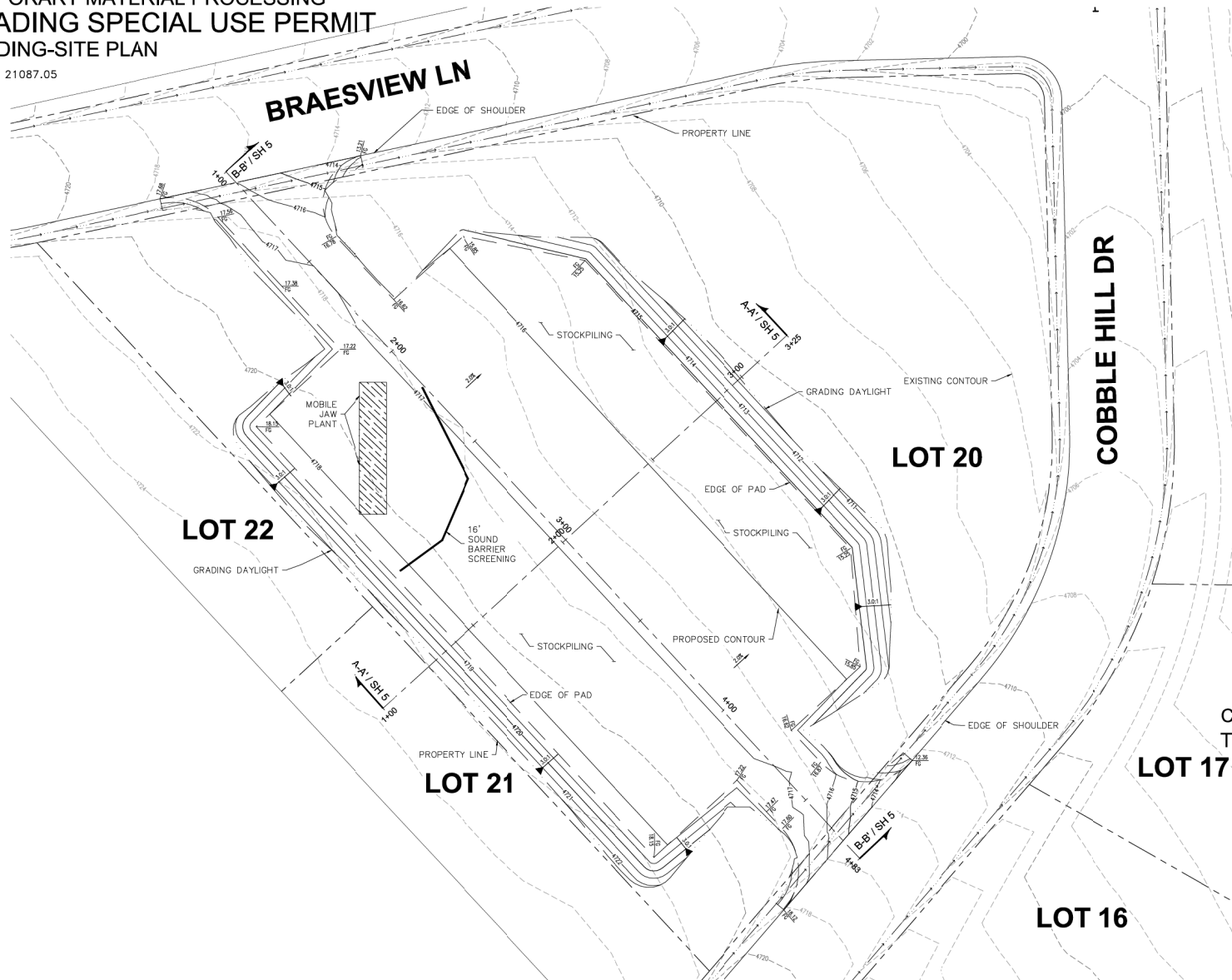
SHEET 2 OF 5

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COBBLE HILL CUSTOM LOT SUBDIVISION

TEMPORARY MATERIAL PROCESSING GRADING SPECIAL USE PERMIT GRADING-SITE PLAN

JOB NO: 21087.05



PRELIMINARY NOT
FOR CONSTRUCTION



EARTHWORK

DISTURBED AREA: 1.02 ±AC
CUT: 1,300 ±CY
FILL: 1,220 ±CY
NET: 80 ±CY CUT
MAX DEPTH OF CUT: 3.66 ±FT
MAX DEPTH OF FILL: 4.00 ±FT

COBBLE HILL CUSTOM LOT SUBDIVISION
TEMPORARY MATERIAL PROCESSING
LOT 17 GRADING SPECIAL USE PERMIT
GRADING-SITE PLAN

RENO WASHOE NEVADA

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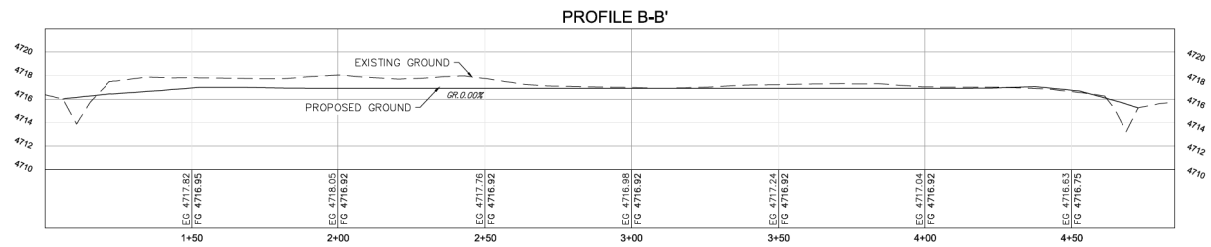
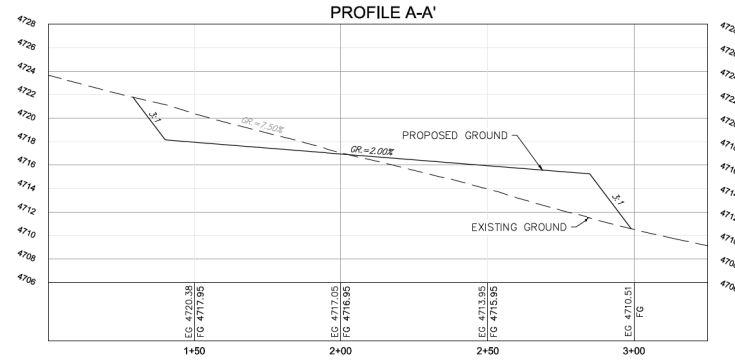
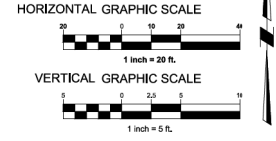
JOB NO: 21087.05 DATE: 11-8-23

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COBBLE HILL CUSTOM LOT SUBDIVISION

TEMPORARY MATERIAL PROCESSING GRADING SPECIAL USE PERMIT PROFILES

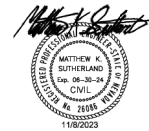
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COBBLE HILL CUSTOM LOT SUBDIVISION TEMPORARY MATERIAL PROCESSING GRADING SPECIAL USE PERMIT PROFILES

RENO WASHOE NEVADA

PRELIMINARY NOT
FOR CONSTRUCTION



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775-856-1150 MAIN • 775-856-1160 FAX • CFARENO.COM

JOB NO: 21087.05 DATE: 11-8-23

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TAB D

Temporary Material Processing Facility Noise Modeling Report

November 8, 2023

Prepared for:

Thomas Creek Development
2100 Manzanita Lane
Reno, Nevada 89509

Prepared by:

Behrens and Associates, Inc.
2320 Alaska Avenue
El Segundo California, 90245

Simon Kim
Acoustical Engineer

Jason Peetz
Engineering Manager



1. Introduction

The purpose of this report is to provide a noise assessment of the proposed temporary material processing facility at the 8900 Lakeside site located approximately 390 feet north of Lombardi Road and approximately 1,930 feet east of Bellhaven Road in Washoe County, Nevada.

The noise assessment includes a modeling analysis of the temporary material processing facility equipment at the site. This report provides the predicted operational noise level impact at the nearby residential properties. The location of the 8900 Lakeside site and surrounding area is shown in Figure 1-1.

The following is provided in this report:

- A brief introduction of the fundamentals of noise
- A review of the project noise standards
- A discussion of noise modeling methodology.

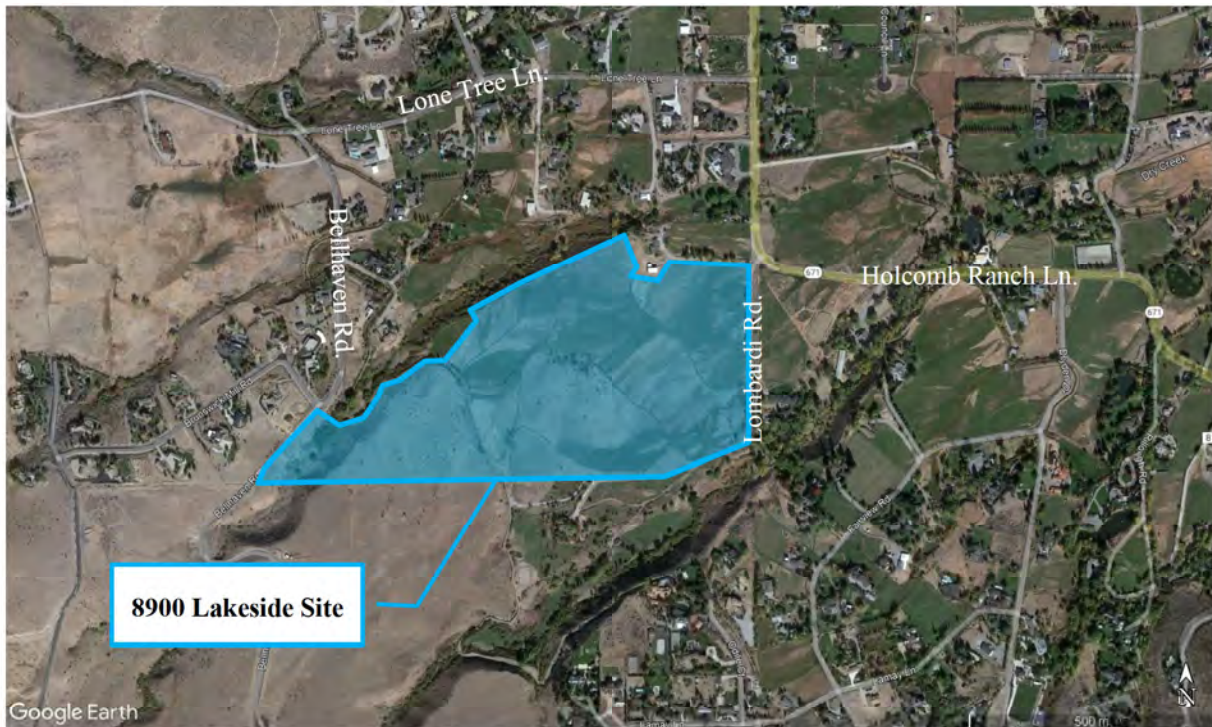


Figure 1-1 8900 Lakeside Site Location



2. Noise Fundamentals

Sound is most commonly experienced by people as pressure waves passing through air. These rapid fluctuations in air pressure are processed by the human auditory system to produce the sensation of sound. The rate at which sound pressure changes occur is called the frequency. Frequency is usually measured as the number of oscillations per second or Hertz (Hz). Frequencies that can be heard by a healthy human ear range from approximately 20 Hz to 20,000 Hz. Toward the lower end of this range are low-pitched sounds, including those that might be described as a “rumble” or “boom”. At the higher end of the range are high-pitched sounds that might be described as a “screech” or “hiss”.

2.1 Environmental Noise

Environmental noise generally derives, in part, from a combination of distant noise sources. Such sources may include common experiences such as distant traffic, wind in trees, and distant industrial or farming activities. These distant sources create a low-level "background noise" in which no particular individual source is identifiable. Background noise is often relatively constant from moment to moment but varies slowly from hour to hour as natural forces change or as human activity follows its daily cycle.

Superimposed on this low-level, slowly varying background noise is a succession of identifiable noisy events of relatively brief duration. These events may include the passing of single-vehicles, aircraft flyovers, screeching of brakes, and other short-term events. The presence of these short-term events causes the noise level to fluctuate. Typical indoor and outdoor A-weighted sound levels are shown in Figure 2-1.

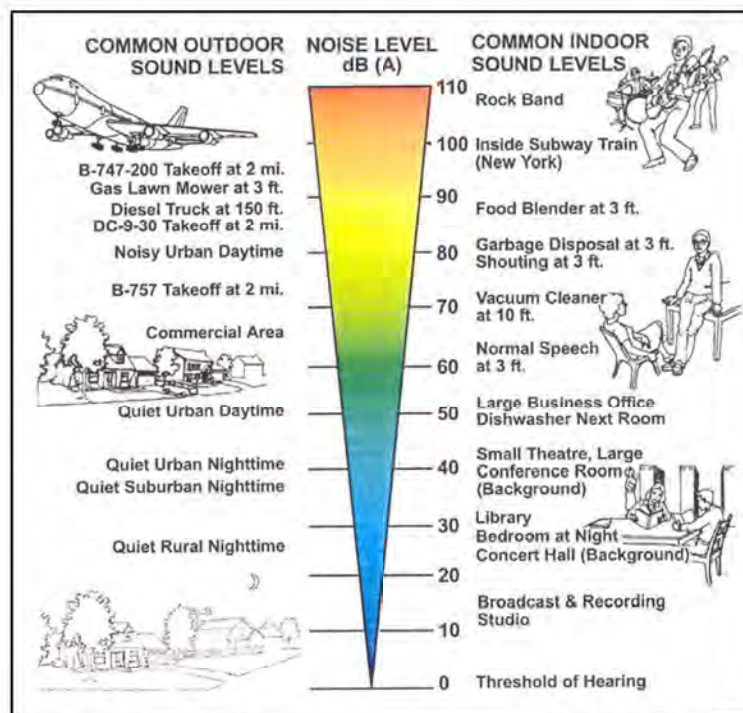


Figure 2-1 Typical Indoor and Outdoor A-Weighted Sound Levels



3. Noise Standards

3.1 Washoe County Development Code

The County of Washoe development code consists of noise limits applicable to the residential properties adjacent to the 8900 Lakeside site.

*Washoe County Development Code
Article 414 NOISE AND LIGHTING STANDARDS*

Sections 110.414.05 Standards. Sound Levels shall not exceed the standards set forth in this section.

(b) Residential Abutment. For property abutting areas developed residentially, or shown as residential on the area plan maps: sixty-five (65) Ldn at the property line.

Based on the County’s Development Code, the temporary material processing facility operation is limited to 65 dBA Ldn at nearby residential properties.

The day-night average sound level (Ldn) is the average equivalent A-weighted sound level during a 24-hour day, obtained after addition of ten decibels to sound levels during the night time from 10 p.m. to 7 a.m. The 10-decibel penalty is applied to account for increased noise sensitivity during the nighttime hours.

3.2 Washoe County Zoning

The County of Washoe GIS data of the site and adjacent surroundings is presented in Figure 3-1. The properties including the proposed project site are categorized as residential.

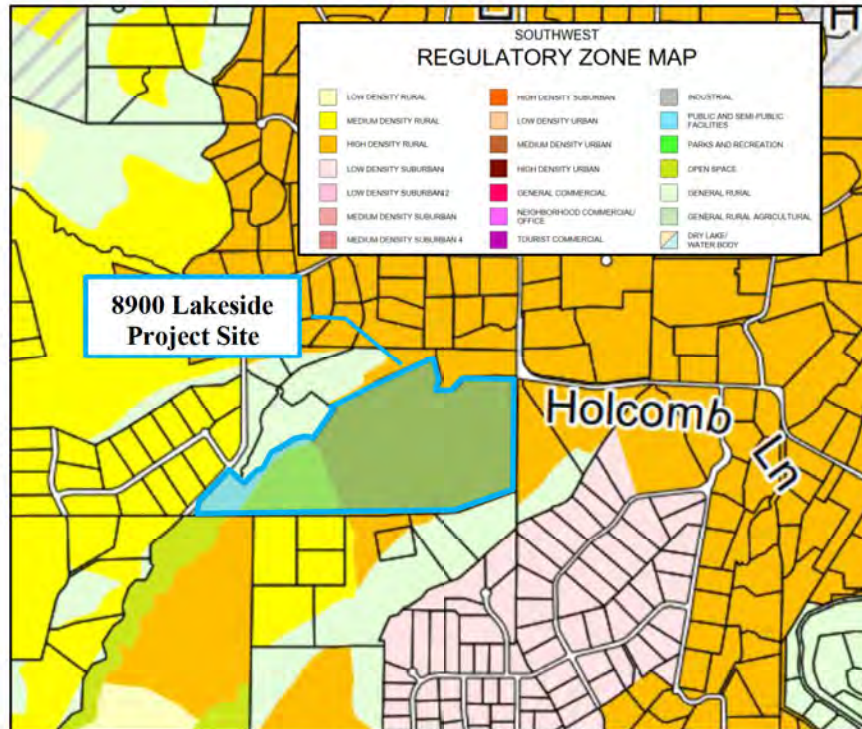


Figure 3-1 Washoe County Zoning Map



Sound power levels of the modeled temporary material processing facility equipment are presented in Table 4-1. The modeled sound power levels are based on the assumption that all equipment is equipped with factory installed mufflers and the power unit is enclosed in a factory installed enclosure.

Table 4-1 Temporary Material Processing Facility Operation Noise Emitting Equipment

| Equipment | | Data Source | Quantity | Usage Factor (%) | Sound Power Level (dBA) |
|--------------|--------------------|-----------------|----------|------------------|----------------------------|
| | Crusher | BAENC File Data | 1 | 100 | 103.8 L _w /Unit |
| | Power Unit | BAENC File Data | 1 | 100 | 118.1 L _w /Unit |
| Rock Crusher | Power Unit Exhaust | BAENC File Data | 1 | 100 | 86.3 L _w /Unit |
| | Conveyer Motor | BAENC File Data | 4 | 100 | 95.5 L _w /Unit |
| | Conveyer Screen | BAENC File Data | 1 | 100 | 95.5 L _w /Unit |
| Loader | Loader | BAENC File Data | 1 | 40* | 107.7 L _w /Unit |

*Usage Factor from FHWA construction equipment

The Day-Night Average Sound Level (L_{dn}) is a 24-hour A-weighted average sound level which takes into account the fact that a given level of noise may be more or less tolerable depending on when it occurs. The L_{dn} measure of noise exposure weights average hourly noise levels by 10 dB for the nighttime hours (between 10:00 pm and 7:00 am) then combines the results with the daytime levels to produce the final L_{dn} value.

The proposed temporary material processing facility operations are planned to occur during daytime hours only, from 8:00 am through 3:00 pm. To calculate the L_{dn} value associated with the proposed temporary material processing facility operation, the FHWA equipment usage factor of 40% was used for the loader and a 100% usage factor was utilized for the rock crusher during daytime hours when the equipment will be in use. A usage factor of zero was used for nighttime hours when all equipment will not be in use.

4.2 Noise Sensitive Receptors

The noise levels were assessed at the property lines of nearby residences in the direction of the rock crushing equipment. The locations of the receptors and surrounding environment can be seen in Figure 4-2.

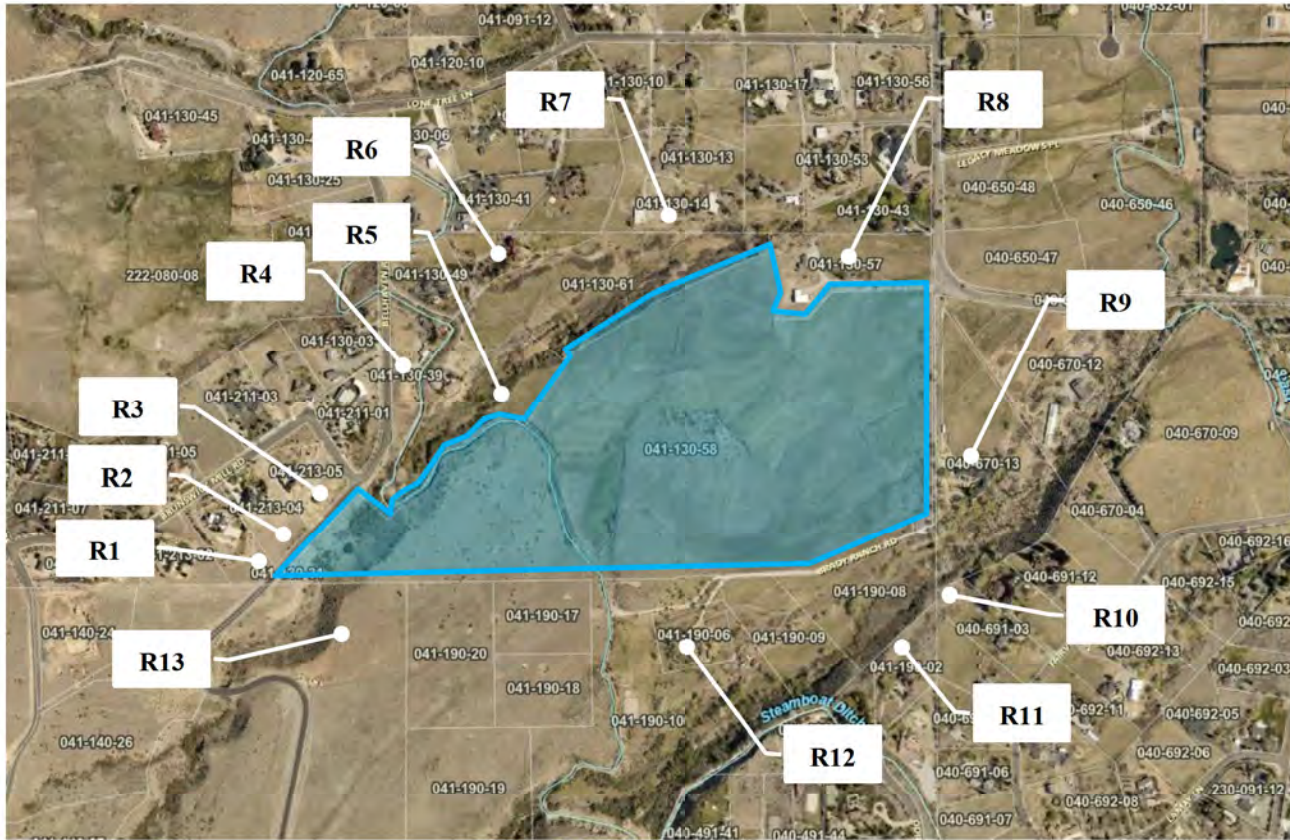
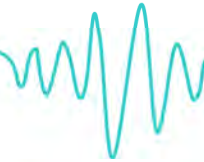


Figure 4-2 Receptors

Table 4-2 Details of the Receptors

| Receptor | Address | Land Use/Zone |
|----------|------------------------|---|
| R1 | 220 Brunswick Mill Rd. | Single Family Residence |
| R2 | 210 Brunswick Mill Rd. | Single Family Residence |
| R3 | 299 Brunswick Mill Rd. | Single Family Residence |
| R4 | 8520 Bellhaven Rd. | Single Family Residence |
| R5 | 8540 Bellhaven Rd. | Single Family Residence/Agricultural Deferred |
| R6 | 8530 Bellhaven Rd. | Single Family Residence |
| R7 | 3640 Lone Tree Ln. | Single Family Residence |
| R8 | 8895 Lakeside Dr. | Single Family Residence |
| R9 | 3600 Holcomb Ranch Ln. | Single Family Residence |
| R10 | 3855 Fairview Rd. | Single Family Residence |
| R11 | 4020 Odile Ct. | Single Family Residence |
| R12 | 8990 Lombardi Rd. | Single Family Residence |
| R13 | 9000 Bellhaven Rd. | Single Family Residence |



4.3 Noise Modeling Results - Unmitigated

The results of the temporary material processing facility noise modeling are presented in Table 4-3. The locations in the tables correspond to the locations identified in Figure 4-2.

The results of the unmitigated noise modeling indicate that the unmitigated temporary material processing facility operations are predicted to comply with the Washoe County noise limit of 65 dBA Ldn at all receptors.

Table 4-3 A-Weighted Noise Modeling Results Ldn (dBA)

| Receptor | Predicted Noise Level |
|---|------------------------------|
| R1 | 34.8 |
| R2 | 33.7 |
| R3 | 34.8 |
| R4 | 37.9 |
| R5 | 43.2 |
| R6 | 40.1 |
| R7 | 39.8 |
| R8 | 56.1 |
| R9 | 57.0 |
| R10 | 55.4 |
| R11 | 55.5 |
| R12 | 58.0 |
| R13 | 40.0 |
| Washoe County Development Code Noise Limit | 65 dBA Ldn |

Figure 4-3 shows the Unmitigated Temporary Material Processing Facility Operational Noise Contour Map in dBA Ldn. The contours are provided in 5 dB increments with the color scale indicating the sound level of each contour.

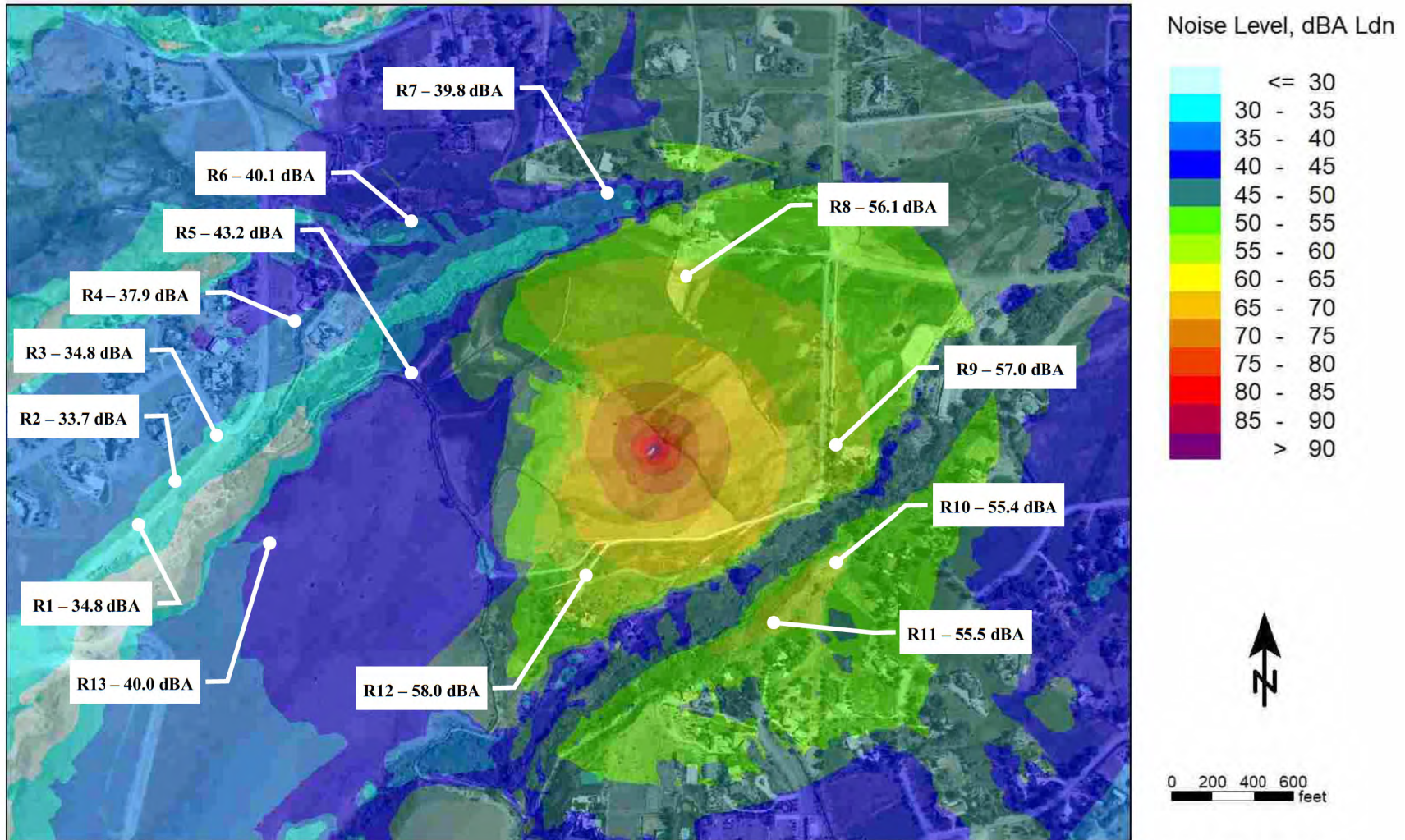


Figure 4-3 Unmitigated Temporary Material Processing Facility Operations Noise Contour Map (dBA Ldn)



4.4 Mitigation Recommendations

Although not required as the unmitigated noise levels are predicted to comply with the county noise limits, mitigation measures were developed and added to the noise modeling in an effort to decrease the noise impact of the temporary material processing facility operation at neighboring properties. The following noise mitigation measures were modeled.

- A total of 160 linear feet of 16-ft High, Sound Transmission Class (STC) 32 acoustical barrier wall installed on the south and east sides of the rock crusher.

Figure 4-4 below shows the layout of the recommended mitigation.

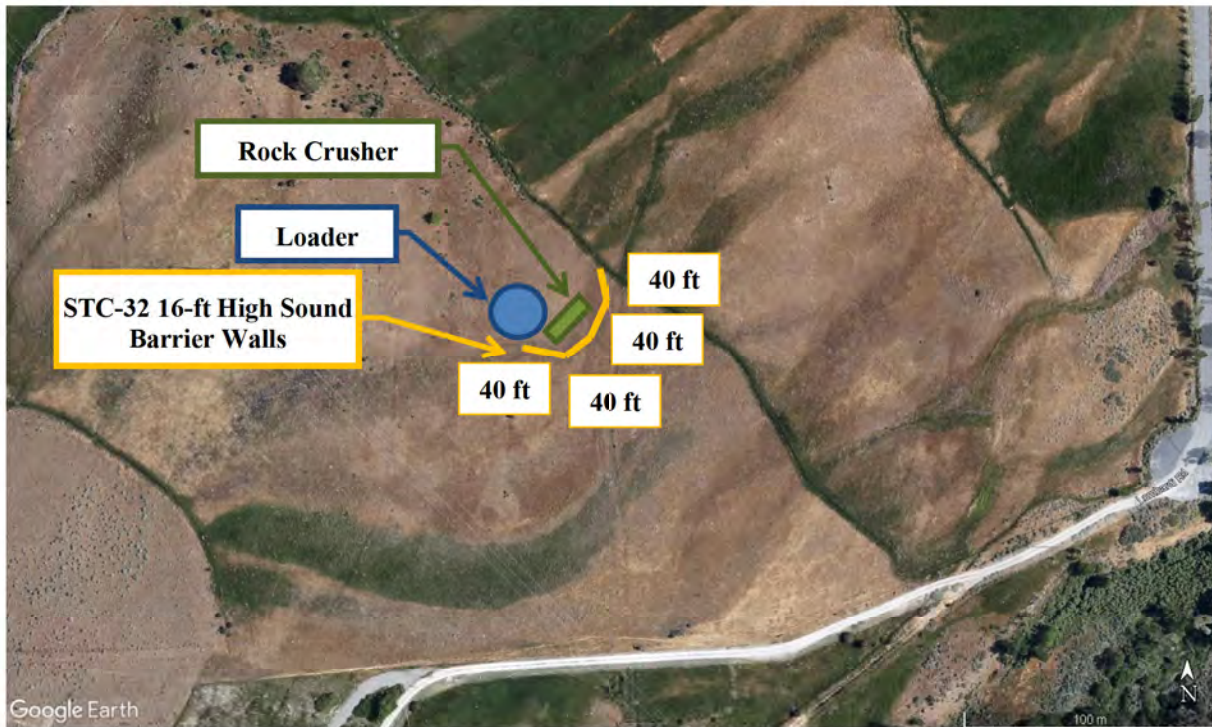


Figure 4-4 Modeled Sound Barrier Layout

4.5 Noise Modeling Results - Mitigated

The results of the mitigated temporary material processing facility operational noise modeling are presented in Table 4-4. The locations in the tables correspond to the locations identified in Figure 4-2.

The results of the mitigated noise modeling indicate that the mitigated temporary material processing facility operations are predicted to be up to 56.7 at Receptor 8. Up to 10.7 dB of noise reduction could be obtained with the recommended mitigation measures.



Table 4-4 A-Weighted Mitigated Noise Modeling Results Ldn (dBA)

| Receptor | Unmitigated Predicted Noise Level | Mitigated Predicted Noise Level | Noise Reduction |
|--|-----------------------------------|---------------------------------|-----------------|
| R1 | 34.8 | 34.8 | 0.0 |
| R2 | 33.7 | 33.7 | 0.0 |
| R3 | 34.8 | 35.1 | -0.3 |
| R4 | 37.9 | 40.5 | -2.6 |
| R5 | 43.2 | 45.7 | -2.5 |
| R6 | 40.1 | 42.5 | -2.4 |
| R7 | 39.8 | 42.4 | -2.6 |
| R8 | 56.1 | 56.7 | -0.6 |
| R9 | 57.0 | 47.0 | 10.0 |
| R10 | 55.4 | 44.7 | 10.7 |
| R11 | 55.5 | 45.1 | 10.4 |
| R12 | 58.0 | 48.9 | 9.1 |
| R13 | 40.0 | 40.0 | 0.0 |
| County's Development Code Level Limit | 65 dBA Ldn | | - |

Figure 4-5 shows the Mitigated Temporary Material Processing Facility Operation Noise Contour Map in dBA Ldn. The noise contours are provided in 5 dB increments with the color scale indicating the sound level of each contour.

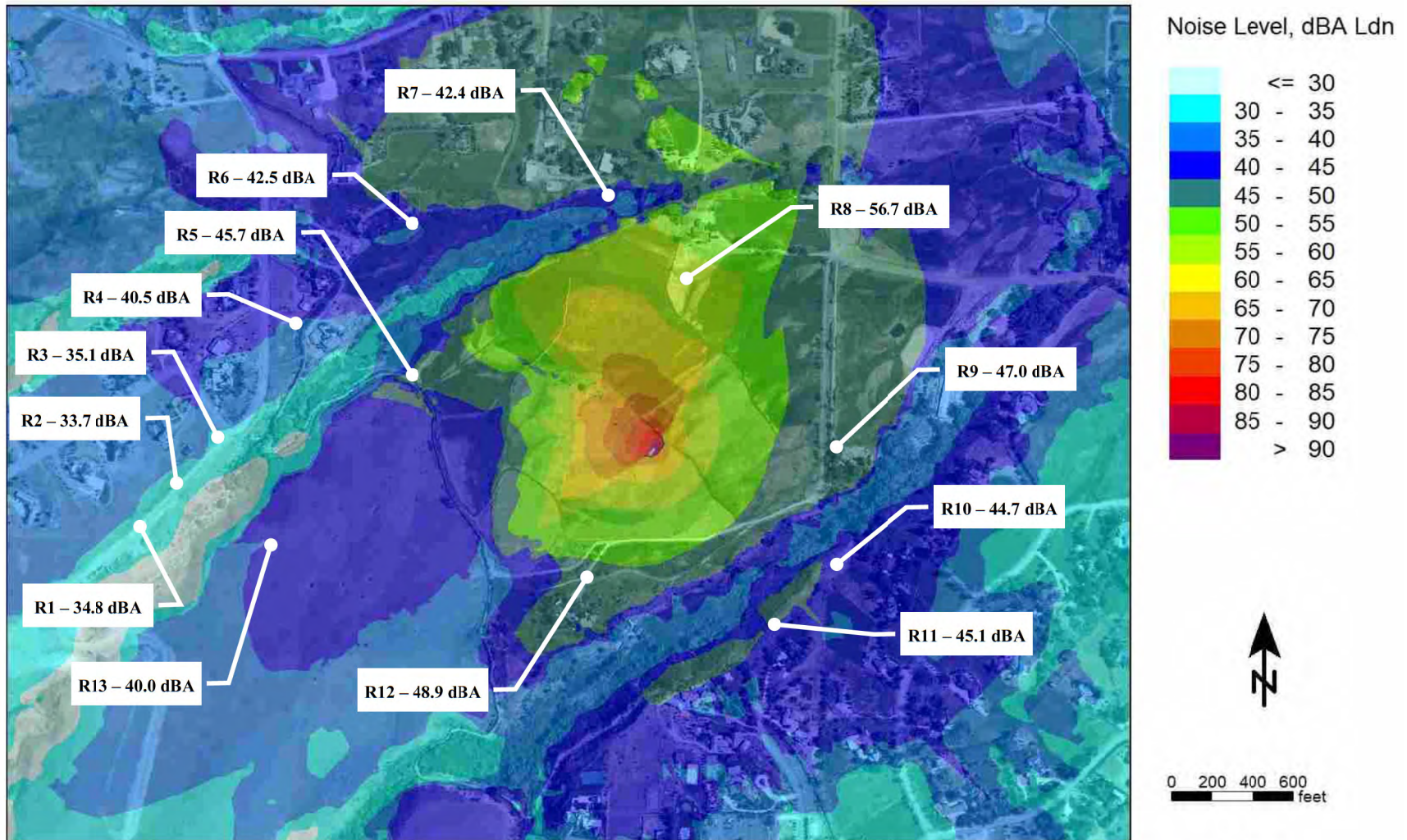


Figure 4-5 Mitigated Temporary Material Processing Facility Operations Noise Contour Map (dBA Ldn)



5. Conclusion

A noise assessment was conducted to analyze the potential noise impact associated with the proposed temporary material processing facility operations at the 8900 Lakeside Site. The proposed site is located in Washoe County, Nevada.

The results of the unmitigated noise modeling indicate that the unmitigated temporary material processing facility operations at the site are predicted to not exceed the noise limit of 65 dBA Ldn at all receptors.

With the implementation of recommended mitigation measures in Section 5.4, the noise modeling results indicate that up to 10.7 dB of noise reduction could be obtained.



Appendix A - Sound Data

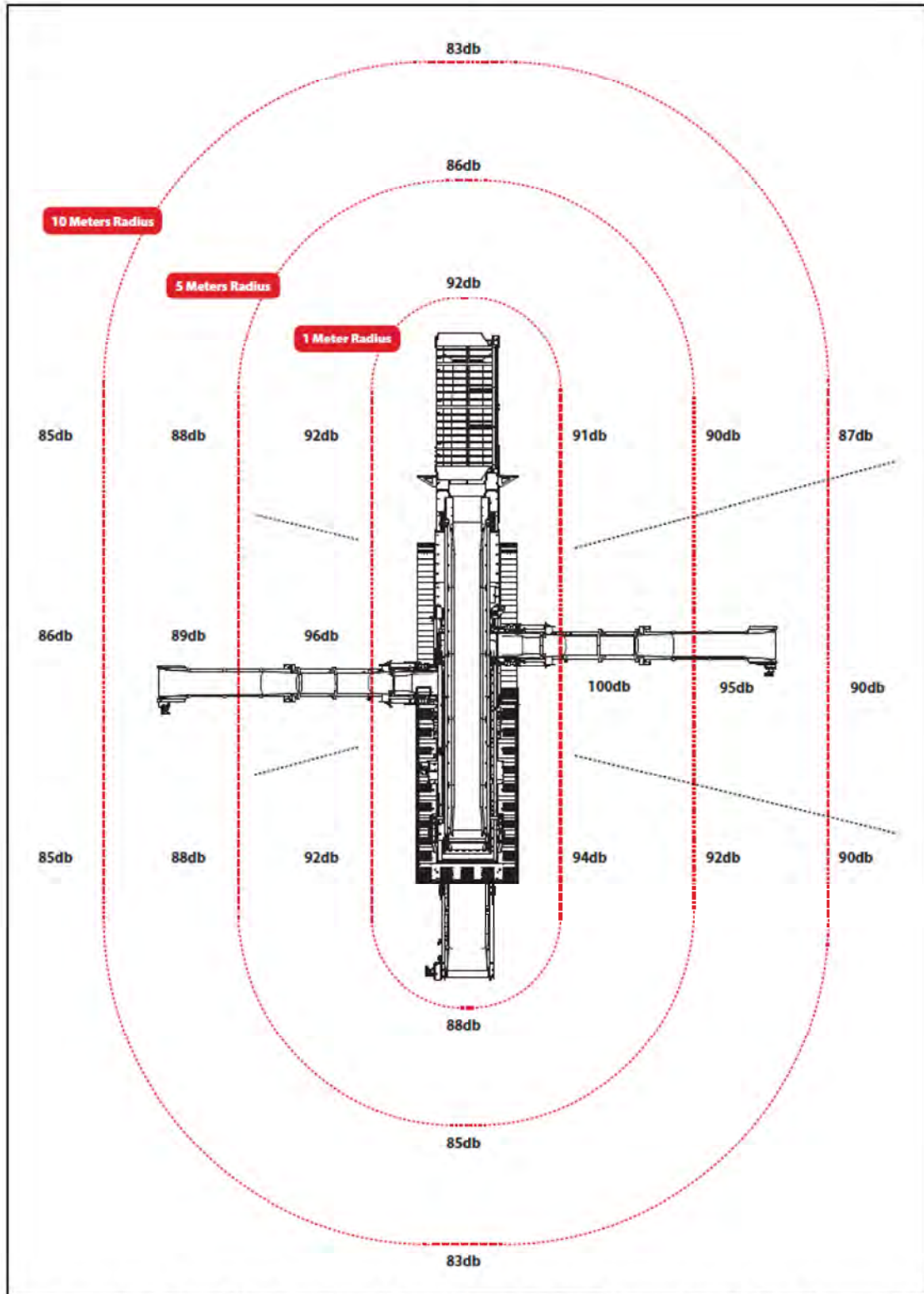
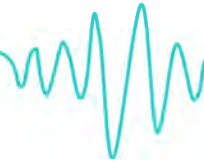


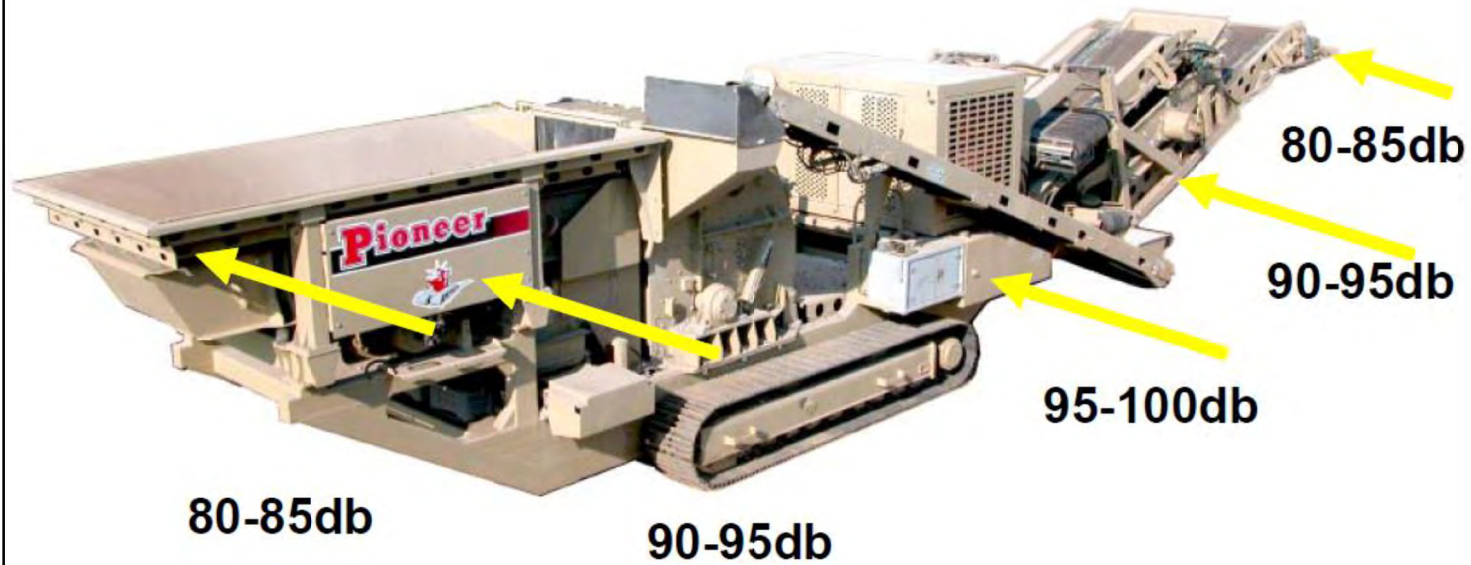
Figure A-1 Rock Crusher Sound Data (Provided by Thomas Creek Development)



November 2005

Noise Levels

3ft from machine / 5ft from ground level



Levels were taken while machine was at operating speed, no material being processed.

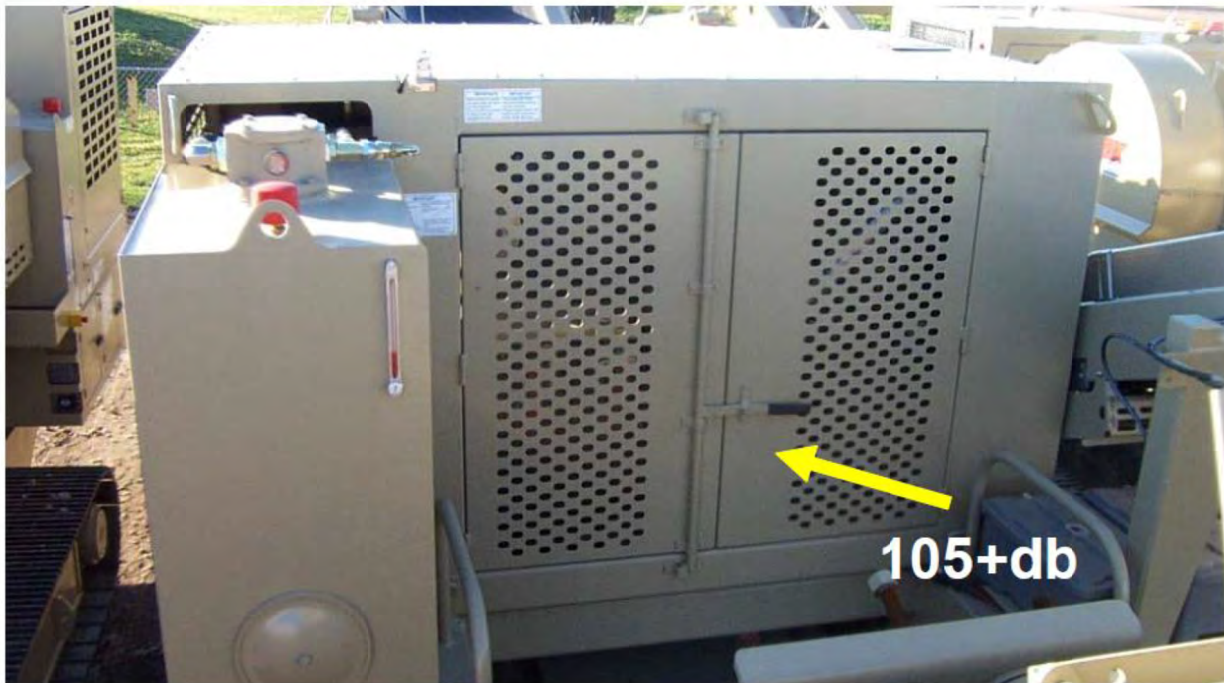
Decible readings shown are approximate. Noise levels will vary depending on work site, weather conditions, material being processed and other factors.

Figure A-2 Rock Crusher Sound Data (Provided by Thomas Creek Development)



November 2005

Noise Levels Engine Access Platform



Levels were taken while machine was at operating speed, no material being processed.

Decible readings shown are approximate. Noise levels will vary depending on work site, weather conditions, material being processed and other factors.

Figure A-3 Rock Crusher Sound Data (Provided by Thomas Creek Development)



| Equipment Description | Impact Device? | Acoustical Usage Factor (%) | Spec. 721.560 L _{max} @ 50 feet (dBA, slow) | Actual Measured L _{max} @ 50 feet (dBA, slow) (Samples Averaged) | Number of Actual Data Samples (Count) |
|-------------------------------|----------------|-----------------------------|--|---|---------------------------------------|
| All Other Equipment > 5 HP | No | 50 | 85 | N/A | 0 |
| Auger Drill Rig | No | 20 | 85 | 84 | 36 |
| Backhoe | No | 40 | 80 | 78 | 372 |
| Bar Bender | No | 20 | 80 | N/A | 0 |
| Blasting | Yes | N/A | 94 | N/A | 0 |
| Boring Jack Power Unit | No | 50 | 80 | 83 | 1 |
| Chain Saw | No | 20 | 85 | 84 | 46 |
| Clam Shovel (dropping) | Yes | 20 | 93 | 87 | 4 |
| Compactor (ground) | No | 20 | 80 | 83 | 57 |
| Compressor (air) | No | 40 | 80 | 78 | 18 |
| Concrete Batch Plant | No | 15 | 83 | N/A | 0 |
| Concrete Mixer Truck | No | 40 | 85 | 79 | 40 |
| Concrete Pump Truck | No | 20 | 82 | 81 | 30 |
| Concrete Saw | No | 20 | 90 | 90 | 55 |
| Crane | No | 16 | 85 | 81 | 405 |
| Dozer | No | 40 | 85 | 82 | 55 |
| Drill Rig Truck | No | 20 | 84 | 79 | 22 |
| Drum Mixer | No | 50 | 80 | 80 | 1 |
| Dump Truck | No | 40 | 84 | 76 | 31 |
| Excavator | No | 40 | 85 | 81 | 170 |
| Flat Bed Truck | No | 40 | 84 | 74 | 4 |
| Front End Loader | No | 40 | 80 | 79 | 96 |
| Generator | No | 50 | 82 | 81 | 19 |
| Generator (<25KVA, VMS Signs) | No | 50 | 70 | 73 | 74 |
| Gradall | No | 40 | 85 | 83 | 70 |
| Grader | No | 40 | 85 | N/A | 0 |
| Grapple (on backhoe) | No | 40 | 85 | 87 | 1 |

Figure A-4 Noise Emission Reference Levels and Usage Factor – US DOT*

*Federal Highway Administration – FHWA Highway Construction Noise Handbook Aug 2006



Appendix B - Glossary of Acoustical Terms



Ambient Noise

The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources both near and far.

Average Sound Level

See Equivalent-Continuous Sound Level

A-Weighted Sound Level, dB(A)

The sound level obtained by use of A-weighting. Weighting systems were developed to measure sound in a way that more closely mimics the ear's natural sensitivity relative to frequency so that the instrument is less sensitive to noise at frequencies where the human ear is less sensitive and more sensitive at frequencies where the human ear is more sensitive.

C-Weighted Sound Level, dBC

The sound level obtained by use of C-weighting. Follows the frequency sensitivity of the human ear at very high noise levels. The C-weighting scale is quite flat and therefore includes much more of the low-frequency range of sounds than the A and B scales. In some jurisdictions, C-weighted sound targets are used to target the low-frequency content of noise sources.

Community Noise Equivalent Level (CNEL)

A 24-hour A-weighted average sound level which takes into account the fact that a given level of noise may be more or less tolerable depending on when it occurs. The CNEL measure of noise exposure weights average hourly noise levels by 5 dB for the evening hours (between 7:00 pm and 10:00 pm), and 10 dB between 10:00 pm and 7:00 am, then combines the results with the daytime levels to produce the final CNEL value. It is measured in decibels, dB.

Day-Night Average Sound Level (Ldn)

A measure of noise exposure level that is similar to CNEL except that there is no weighting applied to the evening hours of 7:00 pm to 10:00 pm. It is measured in decibels, dB.

Daytime Average Sound Level

The time-averaged A-weighted sound level measured between the hours of 7:00 am to 7:00 pm. It is measured in decibels, dB.

Decibel (dB)

The basic unit of measurement for sound level.

Direct Sound

Sound that reaches a given location in a direct line from the source without any reflections.

Divergence

The spreading of sound waves from a source in a free field, resulting in a reduction in sound pressure level with increasing distance from the source.

Energy Basis

This refers to the procedure of summing or averaging sound pressure levels on the basis of their squared pressures. This method involves the conversion of decibels to pressures, then performing the necessary arithmetic calculations, and finally changing the pressure back to decibels.



Equivalent-Continuous Sound Level (Leq)

The average sound level measured over a specified time period. It is a single-number measure of time-varying noise over a specified time period. It is the level of a steady sound that, in a stated time period and at a stated location, has the same A-Weighted sound energy as the time-varying sound. For example, a person who experiences an Leq of 60 dB(A) for a period of 10 minutes standing next to a busy street is exposed to the same amount of sound energy as if he had experienced a constant noise level of 60 dB(A) for 10 minutes rather than the time-varying traffic noise level.

Fast Response

A setting on the sound level meter that determines how sound levels are averaged over time. A fast sound level is always more strongly influenced by recent sounds, and less influenced by sounds occurring in the distant past, than the corresponding slow sound level. For the same non-steady sound, the maximum fast sound level is generally greater than the corresponding maximum slow sound level. Fast response is typically used to measure impact sound levels.

Field Impact Insulation Class (FIIC)

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

Field Sound Transmission Class (FSTC)

A single number rating similar to sound transmission class except that the transmission loss values used to derive this class are measured in the field.

Flanking Sound Transmission

The transmission of sound from a room in which a source is located to an adjacent receiving room by paths other than through the common partition. Also, the diffraction of noise around the ends of a barrier.

Frequency

The number of oscillations per second of a sound wave

Hourly Average Sound Level (HNL)

The equivalent-continuous sound level, Leq, over a 1-hour time period.

Impact Insulation Class (IIC)

A single number rating used to compare the effectiveness of floor/ceiling assemblies in providing reduction of impact-generated sound such as the sound of a person's walking across the upstairs floor.

Impact Noise

The noise that results when two objects collide.

Impulse Noise

Noise of a transient nature due to the sudden impulse of pressure like that created by a gunshot or balloon bursting.

Insertion Loss

The decrease in sound power level measured at the location of the receiver when an element (e.g., a noise barrier) is inserted in the transmission path between the sound source and the receiver.



Inverse Square Law

A rule by which the sound intensity varies inversely with the square of the distance from the source. This results in a 6dB decrease in sound pressure level for each doubling of distance from the source.

L_n Sound Level

Time-varying noise environments may be expressed in terms of the noise level that is exceeded for a certain percentage of the total measurement time. These statistical noise levels are denoted L_n, where n is the percent of time. For example, the L₅₀ is the noise level exceeded for 50% of the time. For a 1-hour measurement period, the L₅₀ would be the noise level exceeded for a cumulative period of 30 minutes in that hour.

Masking

The process by which the threshold of hearing for one sound is raised by the presence of another sound.

Maximum Sound Level (L_{max})

The greatest sound level measured on a sound level meter during a designated time interval or event.

NC Curves (Noise Criterion Curves)

A system for rating the noisiness of an occupied indoor space. An actual octave-band spectrum is compared with a set of standard NC curves to determine the NC level of the space.

Noise Reduction

The difference in sound pressure level between any two points.

Noise Reduction Coefficient (NRC)

A single number rating of the sound absorption properties of a material. It is the average of the sound absorption coefficients at 250, 500, 1000, and 2000 Hz, rounded to the nearest multiple of 0.05.

Octave

The frequency interval between two sounds whose frequency ratio is 2. For example, the frequency interval between 500 Hz and 1,000 Hz is one octave.

Octave-Band Sound Level

For an octave frequency band, the sound pressure level of the sound contained within that band.

One-Third Octave

The frequency interval between two sounds whose frequency ratio is $2^{(1/3)}$. For example, the frequency interval between 200 Hz and 250 Hz is one-third octave.

One-Third-Octave-Band Sound Level

For a one-third-octave frequency band, the sound pressure level of the sound contained within that band.

Outdoor-Indoor Transmission Class (OITC)

A single number rating used to compare the sound insulation properties of building façade elements. This rating is designed to correlate with subjective impressions of the ability of façade elements to reduce the overall loudness of ground and air transportation noise.

Peak Sound Level (L_{pk})

The maximum instantaneous sound level during a stated time period or event.



Pink Noise

Noise that has approximately equal intensities at each octave or one-third-octave band.

Point Source

A source that radiates sound as if from a single point.

RC Curves (Room Criterion Curves)

A system for rating the noisiness of an occupied indoor space. An actual octave-band spectrum is compared with a set of standard RC curves to determine the RC level of the space.

Real-Time Analyzer (RTA)

An instrument for the determination of a sound spectrum.

Receiver

A person (or persons) or equipment which is affected by noise.

Reflected Sound

Sound that persists in an enclosed space as a result of repeated reflections or scattering. It does not include sound that travels directly from the source without reflections.

Reverberation

The persistence of a sound in an enclosed or partially enclosed space after the source of the sound has stopped, due to the repeated reflection of the sound waves.

Room Absorption

The total absorption within a room due to all objects, surfaces and air absorption within the room. It is measured in Sabins or metric Sabins.

Slow Response

A setting on the sound level meter that determines how measured sound levels are averaged over time. A slow sound level is more influenced by sounds occurring in the distant past than the corresponding fast sound level.

Sound

A physical disturbance in a medium (e.g., air) that is capable of being detected by the human ear.

Sound Absorption Coefficient

A measure of the sound-absorptive property of a material.

Sound Insulation

The capacity of a structure or element to prevent sound from reaching a receiver room either by absorption or reflection.

Sound Level Meter (SLM)

An instrument used for the measurement of sound level, with a standard frequency-weighting and standard exponentially weighted time averaging.

Sound Power Level

A physical measure of the amount of power a sound source radiates into the surrounding air. It is measured in decibels.



Sound Pressure Level

A physical measure of the magnitude of a sound. It is related to the sound's energy. The terms sound pressure level and sound level are often used interchangeably.

Sound Transmission Class (STC)

A single number rating used to compare the sound insulation properties of walls, floors, ceilings, windows, or doors. This rating is designed to correlate with subjective impressions of the ability of building elements to reduce the overall loudness of speech, radio, television, and similar noise sources in offices and buildings.

Source Room

A room that contains a noise source or sources

Spectrum

The spectrum of a sound wave is a description of its resolution into components, each of different frequency and usually different amplitude.

Tapping Machine

A device used in rating different floor constructions against impacts. It produces a series of impacts on the floor under test, 10 times per second.

Tone

A sound with a distinct pitch

Transmission Loss (TL)

A property of a material or structure describing its ability to reduce the transmission of sound at a particular frequency from one space to another. The higher the TL value the more effective the material or structure is in reducing sound between two spaces. It is measured in decibels.

White Noise

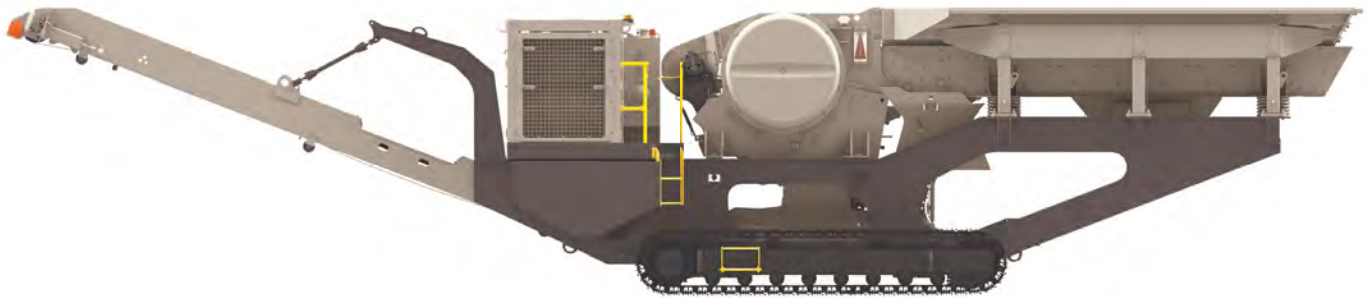
Noise that has approximately equal intensities at all frequencies.

Windscreen

A porous covering for a microphone, designed to reduce the noise generated by the passage of wind over the microphone.

FT2650

Mobile Jaw Plant



Vibrating Grizzly Feeder

- 50" (1270mm) x 18' (5.5m) vibrating pan feeder
- 6.5 cubic yard hopper
- 5' step deck grizzly bars 2.5" nominal spacing
- Three position flop gate

Jaw Crusher - Vanguard

- Jaw opening - 26" (660mm) Jaw width - 50" (1270mm)
- 260 RPM maximum with 1.25" stroke
- 50" flywheels with AISI 4150 11.25" forged steel shaft
- Three (3) piece AR steel side liners
- Manganese steel jaw dies, cast steel pitman
- Shim-less hydraulic wedge adjust, min CSS 2.5"

Under Crusher Conveyor

- 48" (1200mm) fixed height with full spill boards
- Impact bed, 360PIW, 4ply, endless belting
- Easily removed for maintenance

Chassis

- Sculpted frame design
- 19.7" (500mm) tracks with dual drive
- Track length 12' 2" (3.7m)
- Balanced for zero cribbing
- Dust suppression with manifold

Power and Controls

- CAT C9.3 300hp/224kw Tier 4 Final
- 170gal (643L) fuel tank
- 115gal (435L) oil reservoir
- One 12GPM and one 20GPM hydraulic circuits for magnet, side delivery, or auxiliary
- Radio remote/tether control system
- OPS 7 with push button or touchscreen
- Crusher CSS adjusted safely at control panel
- Real time system monitoring display

Options

- 18" side delivery with hydraulic fold
- Permanent cross belt magnet, optional steel cladding
- Extended under crusher conveyor with 12' 2" (3.7m) discharge and hydraulic fold (shown above)
- Grizzly fingers with 2" spacing vs. grizzly bars
- Grizzly pre-screener with 3/4" spacing
- Lighting package mounted on engine housing
- Belt scale for under crusher conveyor
- CAT 9 300 HP Tier III vs. Tier IV (international)
- Tramp Iron Relief (TIR) system vs. wedge adjust
- Engine enclosure filter kit

Physical/Operating Characteristics

| Dimension | Standard | Metric |
|------------------------------|-----------|----------|
| Operating Length | 53' 10" | 16.4m |
| Operating Width | 10' 9" | 3.3m |
| Travel Length | 53' 10" | 16.4m |
| Operating Width w/ Discharge | 15' 3" | 4.7m |
| Operating Height | 11' 8" | 3.5m |
| Travel Width | 10' 11" | 3.3m |
| Travel Height | 11' 8" | 3.5m |
| Feed Height | 11' 5" | 3.5m |
| Ground Clearance | 10" | 0.2m |
| Discharge Height | 10' 10" | 3.3m |
| Side Discharge (optional) | 5' 2" | 1.6m |
| Total Weight (std. conveyor) | 104,000lb | 47,173kg |
| Optional Magnet | 4,425lb | 2,007kg |
| Under Crusher Conveyor | 6,920lb | 3,140kg |
| Optional Side Delivery | 1,300lb | 590kg |
| Feeder & Hopper | 15,795lb | 7,165kg |
| Optional Feeder Extensions | 3,240lb | 1,470kg |
| Capacity | 400 TPH | 363 MTPH |



ENVIRONMENTAL NOISE CONTROL

ACOUSTICAL K-RAIL / JERSEY BARRIER MOUNTED SOUND WALL

ENC's K-Rail/Jersey barrier mounted sound walls allow for **quick** and **easy** positioning and movement throughout the site to provide a flexible noise control solution for mobile equipment or operations. The K-Rail/Jersey mounted barrier panels can be **customized** to meet your needs, with heights from 8-20 feet. This product line is an effective solution if the site does not allow earth boring.



BARRIER BLANKET SPECIFICATIONS

- Sound Transmission Class rated STC-25, 32 in accordance with ASTM E-413
- Engineered to meet IBC Wind Load requirements
- Flame Retardant to California Fire Marshall F-419.01 Specifications
Length of Char: 3.5, After Flame: 2 Seconds
- Working Temperature: -40 °F to +200 °F
- Oil resistant, UV resistant, Fiber-Free, Anti-Fungal, Self-Drying Poly-Vinyl Chloride Outer Shell with specially developed inner core septum barrier

FREESTANDING ACOUSTICAL PANELS ARE NOT INTENDED FOR USE IN HIGH WIND CONDITIONS WITHOUT A SUPPORTING STRUCTURAL ANALYSIS

TEMPORARY ACOUSTICAL NOISE BARRIER SYSTEMS

Designed to provide optimum sound control in blocking and absorbing unwanted noise.

ENVIRONMENTAL



ENTERTAINMENT



CONSTRUCTION



INDUSTRIAL



OIL & GAS



Learn more about commercial noise control at
www.environmental-noise-control.com or call us at 1-800-679-8633

TEMPORARY NOISE BARRIER PANEL SYSTEM

At the heart of our temporary sound wall is our Environmental Noise Control (ENC) acoustical noise barrier panel system, which is manufactured using state-of-the-art acoustical composite materials. Our sound panels are fabricated with a polyvinyl-chloride coated outer shell, multiple layers of noise absorbing and blocking material and feature a specially developed septum barrier inner core. The ENC temporary sound wall system is available from 6 to 40 ft. high.

Temporary Sound Panel Systems



**FREE
STANDING**

**AUGERED
STRUCTURE**

| Sound Transmission Loss (dB) | | |
|--------------------------------|--------------------------|--------------------------|
| % Octave Band Center Frequency | STC 25 Transmission Loss | STC 32 Transmission Loss |
| 63 Hz | 8 dB | 16 dB |
| 80 Hz | 10 dB | 20 dB |
| 100 Hz | 11 dB | 18 dB |
| 125 Hz | 10 dB | 16 dB |
| 160 Hz | 7 dB | 16 dB |
| 200 Hz | 7 dB | 17 dB |
| 250 Hz | 11 dB | 19 dB |
| 315 Hz | 17 dB | 23 dB |
| 400 Hz | 23 dB | 26 dB |
| 500 Hz | 28 dB | 32 dB |
| 630 Hz | 33 dB | 34 dB |
| 800 Hz | 36 dB | 35 dB |
| 1000 Hz | 39 dB | 35 dB |
| 1250 Hz | 41 dB | 36 dB |
| 1600 Hz | 41 dB | 36 dB |
| 2000 Hz | 40 dB | 36 dB |
| 2500 Hz | 41 dB | 37 dB |
| 3150 Hz | 44 dB | 39 dB |
| 4000 Hz | 46 dB | 40 dB |
| 5000 Hz | 50 dB | 43 dB |

The modular design of ENC's temporary sound panel systems meets or exceeds code requirements.

An independent acoustical laboratory has conducted tests in accordance with ASTM E-90 and ASTM E-413 requirements, to measure sound transmission loss and validating the Sound Transmission Class rating of STC-25, STC-32 and STC-43. The ENC composite barrier/absorber blankets, which are laboratory tested and certified, meet or exceed the specifications in the Sound Transmission Loss Data Table.

1 (800) 679 8633 | International +1 310 679 8633 | www.environmental-noise-control.com

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Aledo, TX; Carson, CA; Firestone, CO
Napa, CA; Shreveport, LA; Washington, PA
Calgary, Alberta

For more information on our quality products or possible applications, please see our website or call to speak with one of our ENC representatives. Rapid engineering and deployment response is available worldwide.

Behrens & Associates, Inc.
Environmental Noise Control



**ENVIRONMENTAL
NOISE CONTROL**

Generic Revegetation Seed Mix for Upland Sites in Northern Nevada

| Botanical Name | Common Name | PLS ¹ (lbs/acre) |
|--|-------------------------------------|--------------------------------|
| <i>Achillea millefolium</i> | Yarrow | 0.10 |
| <i>Achnatherum hymenoides</i> | Indian ricegrass "Nezpar/Native" | 2.00 |
| <i>Agropyron fragile</i> ssp. <i>sibericum</i> | Siberian wheatgrass "P-27" | 4.00 |
| <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i> ² | Basin sagebrush | 1.00 |
| <i>Chrysothamnus nauseosus</i> ² | Rabbitbrush | 0.50 |
| <i>Elymus elymoides</i> | Bottlebrush squirreltail | 3.00 |
| <i>Elymus lanceolatus</i> | Streambank wheatgrass "Sodar" | 4.00 |
| <i>Ephedra viridis</i> | Mormon tea | 0.50 |
| <i>Eriogonum umbellatum</i> | Sulfurflower buckwheat | 0.50 |
| <i>Festuca ovina</i> | Sheep fescue "Covar" | 2.00 |
| <i>Linum lewisii</i> | Blue flax | 0.50 |
| <i>Lupinus argenteus</i> | Silverleaf lupine | 0.50 |
| <i>Penstemon palmeri</i> | Palmer penstemon | 0.25 |
| <i>Poa secunda</i> | Sandberg bluegrass "Sherman" | 2.00 |
| <i>Psuedoroegneria spicata</i> | Bluebunch wheatgrass "Secar" | 3.00 |
| <i>Purshia tridentata</i> | Bitterbrush | 1.00 |
| | Annual flower blend ³ | 0.50 |
| | Annual ryegrass | 5.00 |
| TOTAL | | 30.35 |

Notes:

1. PLS = Pure Live Seed
2. Seeds have a short shelf life
3. Annual flower blend contains *Centaurea cyanus* (Bachelor buttons), *Cleome lutea* (Beeplant), *Cosmos bipinnatus* (Cosmos), and *Helianthus annuus* (Sunflower)