

Environmental Assessment for HUD-funded Proposals

Recommended format per 24 CFR 58.36, revised March 2005

[Previously recommended EA formats are obsolete].



Project Identification: **BRISAS DE ARROYO APARTMENTS PROJECT #TC-20-001**
ARROYO, PR

Preparer: **FÉLIX F. TORRES MONLLOR, PE, PA**

Responsible Entity: **PUERTO RICO DEPARTMENT OF HOUSING**
CDBG-PR PROGRAM

Month/Year: **JUNE 5, 2022**

Environmental Assessment

Responsible Entity: [24 CFR 58.2(a)(7)]	PUERTO RICO DEPARTMENT OF HOUSING CDBG-DR PROGRAM
Certifying Officer: [24 CFR 58.2(a)(2)]	SALLY Z. ACEVEDO-COSME PEDRO DE LEÓN RODRÍGUEZ MARÍA T. TORRES-BERGÓN ÁNGEL G. LÓPEZGUZMÁN IVELISSE LORENZO TORRES SANTA RAMÍREZ LEBRÓN
Project Name:	BRISAS DE ARROYO APARTMENTS - #TC-20-001
Project Location:	STATE ROAD PR-178 KM 0.9, MORSE ST. ARROYO, PR 00714
Estimated Total Project Cost:	HUD FUNDS (CDBG-DR): \$27,061,825.00 OTHER SOURCES FUNDS: \$10,578,459.00 TOTAL PROJECT FUNDS: \$37,640,284.00
Grant Recipient: [24 CFR 58.2(a)(5)]	PUERTO RICO PUBLIC HOUSING ADMINISTRATION
Recipient Address:	606 AVE. BARBOSA SAN JUAN, PR 00917
Project Representative:	MR. JORGE L. TRIGO
Telephone Number:	(787) 790-0525
Email:	jtrigo@starmanagement.org

Conditions for Approval: (List all mitigation measures adopted by the responsible entity to eliminate or minimize adverse environmental impacts. These conditions must be included in project contracts and other relevant documents as requirements). [24 CFR 58.40(d), 40 CFR 1505.2(c)]

Conditions for approval and mitigation measures to be adopted throughout the construction are specified in the drawings, reports, and endorsement and/or recommendation letters herein presented (see supporting documents), all endorsement or permits prior or during construction will be re-established:

- ESA – PHASE I (ASTM 1527-13)
- Soil Study / Geotechnical Report
- Determinación de Exclusión Categórica
- Lead Paint & Asbestos Report
- Design Compliance Certification
- Departamento de Recursos Naturales y Ambientales (DRNA) – Construction Recycling Plan
- State Historic Preservation Office (SHPO)
- Noise Report
- Fish & Wildlife
- Notification of Construction Permit
- Green Building Compliance (Design & Equipment / Appliances)
- Certification State Costal Management
- Wetland Preliminary Determination
- 8 Step Mitigation

Additional Conditions:

1. Prior to start of construction work Developer must have final construction permit available with amended new construction budget total and EQB requirements or exclusions.
2. Implementation of 'Best Management Practices' as proposed by the US Department of Interior in their Blanket Clearance Letter dated October 24, 2019.
3. Please note that in accordance with Puerto Rican Permit requirements any generator above 10HP requires an Emergency Generators General Permit of the Puerto Rico Natural and Environmental Resources Department prior to installation.

FINDING: [58.40(g)]

X

Finding of No Significant Impact

(The project will not result in a significant impact on the quality of the human environment)

Supporting Document: 9 (Determinación de Cumplimiento Ambiental Vía Exclusión Categ



Date: October 26, 2022 (Rev. 2)

Name/Title/Agency: FÉLIX F. TORRES MONLLOR, PE, PA

RE Approving Official Signature: *Santa D. Ramírez Lebrón* **Date:** November 8, 2022

Name/Title/Agency: Santa D. Ramírez Lebrón / Permits and Environmental Compliance Specialist
PUERTO RICO DEPARTMENT OF HOUSING
CDBG-DR PROGRAM

Statement of Purpose and Need for the Proposal: [40 CFR 1508.9(b)]

Puerto Rico is short of suitable affordable housing for numerous low-income populations including, but not limited to, single headed family households and moderate to low-income families in general. Throughout the past decade PR has been wrought by an economic recession that has been further tainted by hikes in construction costs (that continue today), the implementation of new taxes, the degradation of the islands credit rating and new fiscal controls over government spending.

Furthermore, Hurricane Maria stormed through the island in September of 2017 damaging hundreds of thousands of homes along the way and between December 2019 through January 2020 a series of strong to moderate earthquakes damaged hundreds of housing and rental units in the Southwest region of the island. All together, these conditions have led to a shortage in affordable housing and present powerful obstacles to low-income families in their search for safe, sanitary, and secure homes.

The purpose of this endeavor is to assist in providing suitable affordable housing to low-income households, particularly targeting family households in Arroyo.

Supporting Document: **7** (Market Study)

Description of the Proposal: Include all contemplated actions that are either geographically or functionally a composite part of the project, regardless of the source of funding. [24 CFR 58.32, 40 CFR 1508.25]

The proposed project consists in the complete renovation of structures and site infrastructure of the existing multifamily complex Brisas de Arroyo Apartments. Complex consists of six (6) three (3) story buildings and one (1) four (4) story building that include, one (1), two (2), three (3), and four (4) bedroom units with a total of 104 units. Existing support facilities include administration office & community room, basketball court, two (2) children's playgrounds, green areas, mailbox station, and one hundred and eight (108) surface parking spaces. The housing complex was built in the early 80's and never had a major renovation. At this point the complex is very outdated and all infrastructure is in dire need of being replaced and modernized, this became evident with the events of hurricane Maria and its aftermaths including the damage to the PR electrical grid.

This rehabilitation is essential to keep the property in safe, decent, and adequate sanitary conditions, along with the current design guides for compliance.. The rehabilitation work will be focused in including energy efficiency and resilient systems such as power generator and lighting system that will operate with LED lighting. All buildings and apartments will be impacted, and project will comply with green building requirements by seeking ICC-700 National Green Building Standard. Lead and asbestos abatement will be required. These rehabilitation works will help the complex comply with FHA, ADA, UFAS and ANSI, as required by federal law. Energy efficient practices have been contemplated in the design.

The project is in full compliance with and in the best interest of the municipality of Arroyo's strategic goals to provide affordable and efficient dwellings to its population.

Contemplated actions include:

- Site Renovation of all exterior accesses, remodeling of existing administration building, including the addition of 700 sq. ft. Compliance with accessibility by impacting all existing sidewalks, ramps, entrances, and parking area.
- Reconstruction of existing basketball court and two (2) children's playgrounds
- Existing infrastructure in service that will be impacted:
 - Roads and Sidewalks
 - Telephone & Cable: Communications

Supporting Documents: 1 (Narrative), 18 (Municipal Endorsement)

Existing Conditions and Trends: Describe the existing conditions of the project area and its surroundings, and trends likely to continue in the absence of the project. [24 CFR 58.40(a)]

The existing complex site is located within an impacted, mixed-use area of Arroyo. It provides immediate access to public transportation and enjoys all infrastructure and services that could be provided by private and public entities.

The project has been vetted by local agencies and has been positively accepted by the Municipal Government. Puerto Rico's debt crisis accompanied by current economic trends and development efforts suggest that in the absence of the rehabilitation of this complex and the danger of the collapse of its outdated infrastructure could mean that over one hundred families could be at risk of losing their affordable housing. This complex is currently owned by the Municipality of Arroyo which does not have the means to rehabilitate the complex and its deteriorating facilities. The Municipality has entered an agreement to sell the complex to the Developer who will take on the task of remodeling the complex and have it comply with current codes and standards. With the understanding that the complex will remain dedicated to housing current tenants and area families of low to moderate income. To achieve this goal the Developer will use a combination of private financing and CDBG-DR funds. The construction will bring needed economic activity and jobs to the local community.

Statutory Checklist: [24CFR §58.5]

Record the determinations made regarding each listed statute, executive order or regulation. Provide appropriate source documentation. Note reviews or consultations completed as well as any applicable permits or approvals obtained or required. Note dates of contact or page references. Provide compliance or consistency documentation. Attach additional material as appropriate. Note conditions, attenuation or mitigation measures required.

Factors Determination and Compliance Documentation

Historic Preservation [36 CFR 800]	A letter from SHPO dated March 3, 2021, directed to Lauren B. Poche, M.A., and for this project, states that SHPO has reached a conclusion of no historic properties affected. Furthermore, since this is an existing complex, and any excavation would be minimal and in already impacted areas the possibility that the project will impact any archaeological and/or historical resources is minimal. Given the previous, there is no anticipated adverse impact on archaeological resources. However, should any entity find any archaeological resources during the construction endeavor, all works must be immediately stopped, and the matter needs to be addressed as per the 'Consejo de Arqueología Terrestre', SHPO and/or any other agency with jurisdiction over the matter. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations. Supporting Documents: 3 (SHPO)
Floodplain Management [24 CFR 55, Executive Order 11988]	This complex and its site were located outside the special AE FEMA flood zone per map and non-flood certification. FEMA MAP #72000C0370 of November 18, 2009. However, the area was included in the special zone "A" by FEMA in Advisory Base Flood Elevation map (ABFE) of April 13, 2018, post hurricane María. Therefore, project was referenced to comply with 8 step process. The third-party consultant determined that project did not need to comply with steps 2,3 & 7 and only required a 5 step processes that was completed and included as supporting document. Project is compliant with 24 CFR 55, Executive Order 11988 after 5 step process. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations. Supporting Document: 23 (FEMA Firmettes), 30 (PR Planning Board), 31 (8-Step Report)

Wetlands Protection [Executive Order 11990]	The project site is not located on any riparian nor wetlands. Furthermore, a permit won't be required as per Section 404 of the Clean Water Act for the project will not require the discharge of dredger or fill material into wetlands. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations. Supporting Document: 24 (Wetlands Inventory)
Coastal Zone Management Act [Sections 307(c), (d)]	The project was referred to the Puerto Rico Planning Board with regards of possible coastal zone impact. On its January 26, 2022, letter to Mr. Jorge L. Trigo Córdova, the Puerto Rico Planning Board concluded that the project does not require a Federal Consistency Certificate because it is outside coastal zone limits, and it is not expected to impact any coastal zone limit resources. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations. Supporting Document: 30 (PR Planning Board)
Sole Source Aquifers [40 CFR 149]	Puerto Rico is included in Region II of the USA EPA designated sole-source aquifer regions. EPA has determined that there are no sole-source aquifer in Puerto Rico. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations. Supporting Document: 26 (Region II-EPA MAPS)
Endangered Species Act [50 CFR 402]	The proposed site is in a densely populated, mixed-use urban landscape. The National Fish and Wildlife Service does not identify this area as a Wildlife Refuge. Furthermore, NO ADVERSE EFFECTS TO FEDERALLY LISTED SPECIES UNDER THE FWS JURISDICTION is anticipated as per Blanket Clearance Letter obtained from the US Department of Interior – FWS dated October 21, 2020. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations. Supporting Document: 21, 27 (Wildlife Refuge Map-Fish & Wildlife, FWS Blanket Clearance Letter)

Wild and Scenic Rivers Act [Sections 7(b), (c)]	Puerto Rico has approximately 5,385 river miles. Only 8.9 miles of three rivers are designated as wild & scenic. The portions of these rivers that qualify under the act are located no less than 10 miles north-east of the project site. They will not be impacted by this project. See Wild Scenic Rivers System Map. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations. Source: www.rivers.gov, Enviromapper-Wild Scenic Rivers System Supporting Document: 28
Air Quality [Clean Air Act, Sections 176(c) and (d), and 40 CFR 6, 51, 93]	The Municipality of Arroyo is not currently listed as a nonattainment or maintenance area with regards to air quality. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations. Source: Nonattainment Areas for Criteria Pollutants (Green Book) US EPA
Farmland Protection Policy Act [7 CFR 658]	The proposed project calls for rehabilitation construction in a developed lot that lies within a highly populated and developed, mixed use, urban area in San Juan. It does not include soils designated as 'Prime' for agricultural purposes. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations. Supporting Document: 1, 29 (Narrative, Prime Farmlands)
Environmental Justice [Executive Order 12898]	The development is meant to serve the pressing need for affordable housing to in Arroyo's low- income population and counts with the complete support from the Municipality. As evidenced by studies no significant adverse environmental effects are expected in the neighboring community or in the project property, which includes low-income families. Existing lead base paint and asbestos will be mitigated prior to construction activity. This proposed activity will not have a negative impact on Environmental Justice. Therefore, the proposed activity complies with this section. Supporting Document: 1,2,7,8,17,18 (Narrative, Phase I Environmental Study, Market Study, Appraisal Study, Asbestos & Lead Paint Report / Abatement Process, Municipal Endorsement)

HUD Environmental Standards Determination and Compliance Documentation

Noise Abatement and Control [24 CFR 51 B]	Results from a Noise Assessment rendered that the project location and neighboring conditions do not present noise levels that exceed HUD limits. Hence, no control measures are needed. Per noise evaluation weighted average was 55.1dB, acceptable standard is 65dB. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations. Supporting Document: 6 (Noise Evaluation)
Toxic/Hazardous/Radioactive Materials, Contamination, Chemicals or Gases [24 CFR 58.5(i)(2)]	A Phase I Environmental Site Assessment dated October 14, 2020, and in conformance with the scope and limitations of ASTM E1527-13 determined that there were no recognized environmental conditions (RECs) associated with the property usage or on the project site. Project was built during the early 80's. Lead based paint & asbestos study was done, and lead base paint and asbestos were found. Mitigation will take place before construction work begins. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations. Supporting Document: 2,17 (Phase 1, Asbestos & Lead Paint, Report)
Siting of HUD-Assisted Projects near Hazardous Operations [24 CFR 51 C]	The proposal calls for a rehabilitation project for an existing complex in a populated, mixed-use urban area within Arroyo's urban district. Complex is currently populated and there is no increase in density. There are no nearby environmental hazards per phase I study. This project will not expose either people or buildings to additional hazards. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations. Supporting Document: 1, 2 (Narrative, Phase 1)
Airport Clear Zones and Accident Potential Zones [24 CFR 51 D]	The nearest airport runways from the site are over 15 miles away. Closest is a small regional airport to the Northeast, Dr. Hermenegildo Ortíz Quiñones, at Humacao and closest commercial is to the West, Mercedita airport, located in the city of Ponce, over 30 miles away. Closest civilian/military airport is Luis Muñoz Marín Airport over 50 miles away. A Noise Evaluation rendered that area noise is much lower than HUD limits. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations. Supporting Documents: 6, 32 (Noise Evaluation, Line Distance Map Airports, www.faa.gov)

Environmental Assessment Checklist

[Environmental Review Guide HUD CPD 782, 24 CFR 58.40; Ref. 40 CFR 1508.8 & 1508.27]

Evaluate the significance of the effects of the proposal on the character, features and resources of the project area. Enter relevant base data and verifiable source documentation to support the finding. Then enter the appropriate impact code from the following list to make a determination of impact. **Impact Codes:** (1) - No impact anticipated; (2) - Potentially beneficial; (3) - Potentially adverse; (4) - Requires mitigation; (5) - Requires project modification. Note names, dates of contact, telephone numbers and page references. Attach additional material as appropriate. Note conditions or mitigation measures required.

Land Development	Code	Source or Documentation
Conformance with Comprehensive Plans and Zoning	1	The lot under consideration is designated within an R-I zone. Complex has been under residential use since it was built in the early 80's Supporting Document: 12 (Zoning Map-Municipality of Arroyo, Planning Board Panel Approved May 9, 2011)
Compatibility and Urban Impact	2	The project lies within a populated area of mixed occupancies. Single and multi-family homes, commercial, healthcare, industrial and institutional facilities are found throughout the immediate vicinity. The project also conforms to the best interests of a population that are in dire need of affordable housing and with the Municipality's plans. Furthermore, the developer states that the design, has considered compliance for green building under ICC-700 National Green Building Standard, and complex will now comply with FHA, ADA, UFAS and ANSI, as required by federal law, will keep existing public open areas, and new landscaping is part of the design. Height of buildings will not be increased. Supporting Document: 1, 11, 18, 14 (Narrative, Drawings, Municipal Endorsement, ICC-700 Check list)
Slope	1	Existing site is flat. It is not within an area of potential landslides. No major earthwork is required for this project. Supporting Document: 1, 11, 18 (Narrative, Drawings, Municipal Endorsement)

Erosion	1	A potential for some construction related erosion always exists but due to the minimal amount of earth work in this project nothing of impact is expected. Any erosion risk can be mitigated by good construction practices and through strict compliance with DNER requirements. There is no anticipated adverse effect on erosion expected because of the development of this project. No SWPP required, less than one acre impacted at site, see designer's certification and NPDES notification (document #5) Supporting Documents: 1, 5, 11 (Narrative, Hydraulic-Hydrology Letter - SWPP – NPDES, Drawings)
Soil Suitability	1	Investigation of subsoil reveals that no mitigation of soil conditions will be required. Supporting Document: 4 (Soil Study)
Hazards and Nuisances including Site Safety	1	The project site does not present any construction logistic difficulties to the contractor. Hence, the contractor should not be facing any safety, hazard, or nuisances other than those typical to construction projects. Nevertheless, the contractor must endeavor to provide a safe environment, on and off-site, throughout the construction. This includes compliance with all safety and environmental measures established by, but not limited to, OSHA, EPA and the DENR. Supporting Document: 11 (Drawings)
Energy Consumption	1	The demand for electricity generated by the project won't require a major expansion of power facilities nor would it have any anticipated adverse effects. Endorsement by the AEE is not required. Furthermore, the design has incorporated the best practices for energy efficiency and is adhering to the compliance for green building under ICC-700 National Green Building Standard. Supporting Document: 1, 10 (Narrative, ICC-700)

Noise - Contribution to Noise Levels	1	The proposed project does not increase the number of existing units and is already part of the existing neighborhood, therefore, the noise contribution to the community produced by the proposed project will be no different to the existing noise level. With respect to construction noise, it must be mitigated by standard procedures and measures as requested by Puerto Rico's environmental quality board and required in their 'Reglamento para el Control de la Contaminación por Ruido'. Supporting Document: 1 (Narrative)
Air Quality Effects of Ambient Air Quality on Project and Contribution to Community Pollution Levels	1	Given that the site lies within the built environment of the city of Arroyo, the proposed project won't have a significant impact on existing community airpollution levels. With respect to the construction, the contractor must endeavor to minimize construction dust from becoming a nuisance to the neighborhood and environment through mitigation measures that include but are not limited to DNER requirements and maintained throughout the construction activity. Supporting Document: 11 (Drawings)
Environmental Design Visual Quality - Coherence, Diversity, Compatible Use and Scale	2	The built environment surrounding the proposed project site serves the residential, commercial, and institutional needs of Arroyo. Existing architecture is composed of a blend of, modern, and contemporary structures of varying scale and aesthetics. The rehabilitation will involve façade improvements to comply with green building requirements. This will help improve visual quality in the area. This project is an existing complex within a residential zoning thus there are no issues about coherence, diversity, or compatibility. Supporting Document: 1,11,18 (Narrative, Drawings, Municipal Endorsement)

Socioeconomic	Code	Source or Documentation
Demographic Character Changes	2	The project is within a mixed-use, populated sector of Arroyo. Rehabilitation will contribute to the Municipalities ongoing effort to attend the demand for modern affordable housing as well as to attract and maintain a steady population in this district. With renovation of the housing facility complex any demographic changes would be to the positive since any new resident will move to newer more affordable housing. Supporting Document: 1, 18, 7 (Narrative, Municipal Endorsement, Market Study)
Displacement	2	There will be neither displacement nor adverse socioeconomic effects since the project is an existing complex to be rehabilitated to comply with HUD accessibility and green energy requirements. The renovation of the units will be in small phases (clusters) with a temporary relocation of the tenants until completion of renovation work of their units. Supporting Document: 1, 18, 7, 10, 11 (Narrative, Municipal Endorsement, Market Study, ICC-700 National Green Building Standard, Drawings)
Employment and Income Patterns	2	The rehabilitation will help modernize the complex and avoid obsolescence and possible lower demand of tenants due to non-compliance with codes such as accessibility, green building, and communication (Broadband). This will help maintain current administration and maintenance jobs & contracts. In addition, maintaining high tenant demand maintains the market for the neighboring hospital, restaurants, and commercial facilities. Hence, avoids potentially deteriorating regional commerce with lower tenant demand. Supporting Document: 1, 18, 7 (Narrative, Municipal Endorsement, Market Study)

Community Facilities and Services	Code	Source or Documentation
Educational Facilities	2	The project's proposed tenant base is that of the low to moderate income family households. Hence, there is a need for educational facilities, but existing facilities should be adequate since the housing complex is currently occupied. Supporting Document: 1, 7 (Narrative, Market Study)
Commercial Facilities	2	There are numerous small and large-scale mixed-use commercial facilities near the Morse St. and Road #178, which will keep benefiting from the existing client base and avoid the risk of diminishing tenant demand. Supporting Document: 1, 7 (Narrative, Market Study)
Health Care	2	Day to day medical services (Dr. Office & Hospital) and two pharmacies are available within a 1-mile radius from the site Source: Google Maps, 7 (Market Study)
Social Services	2	The project intends to appease the current excess demand for affordable housing for low to moderate income family households. Qualified participants will receive the financial support for suitable housing within a planned community. The effort conforms to the best interest of the Municipality and its population. Supporting Document: 1, 7, 18 (Narrative, Market Study, Municipal Endorsement)
Solid Waste	1	Existing solid waste removal services is available to the existing complex. The proposed project calls for the adaptive reuse of the existing structure including accessibility requirements. Recycling should be implemented during construction and enforced as per standards set by the Department of Natural and Environmental Resources (Departamento de Recursos Naturales y Ambientales- DRNA). Supporting Document: 20 (Recycling Plan - Approval)

Wastewater	1	The project is currently served by the existing infrastructure provided by the local water and sewer service company known as 'La Autoridad de Acueductos y Alcantarillados' (aka AAA). No increase of units or density is part of the project thus no increase in wastewater flow is expected. No endorsement is required. Supporting Document: 1, 11 (Narrative, Drawings)
Storm Water	1	According to the designer, the design does not increase the current storm sewer flow. The project is in a ABFE zone. Closest body of water is 200 yds. to the West is the Nigua river, in between are Road #179 and developed lots. No additional storm water is to be generated by the rehabilitation and project does not discharge storm sewer water into river. No adverse effect or impact is expected. Supporting Document: 5, 11 (Designer's letter, Civil Drawings)
Water Supply	1	The project currently served by the existing infrastructure provided by the local water and sewer service company known as 'La Autoridad de Acueductos y Alcantarillados' (aka AAA). No increase of units or density is part of the project thus no increase in water supply demand is expected. No endorsement is required. Supporting Document: 1, 11 (Narrative, Drawings)
Public Safety - Police	1	A State Police Station is located within a half mile from the project. Source: Google Maps, Google Earth
Fire Department	1	A fire station is located within a 1/3 mile from the project. Source: Google Maps, Google Earth

- Emergency Medical	1	Day to day medical services (Dr. Office & hospital) and various pharmacies are available within a 1-mile radius from site. Source: Google Maps, 7 (Market Study)
Open Space and Recreation - Open Space	2	The existing complex has open spaces, a basketball court and two children's playgrounds. These areas will be renovated, a new gym area will be provided, and new landscaping will be included for open spaces. The following are located within a mile radius from the site: Sports complex (baseball park and track), and several restaurants. Source: Google Maps
- Recreation	2	The following are located within a two-mile radius from the site: Public beaches, restaurants, and a surfing water park. Source: Google Maps
- Cultural Facilities	2	The following are located within a two-mile radius from the site: A theater, the downtown plaza and the boardwalk where cultural events and festivals are held. The local marketplace is also located within walking distance. Source: Google Maps
Transportation	2	This area is served by the local public & private systems. Rehabilitation includes the construction of a bus stop. 7,18 (Narrative, Municipal Endorsement)

Natural Features	Source or Documentation	
Water Resources	1	No natural water sources will be used. The project is currently served by the existing infrastructure provided by the local water and sewer service company known as 'La Autoridad de Acueductos y Alcantarillados' (AAA). AAA Endorsement is not required. Supporting Document: 26 (Region II SSA)
Surface Water	1	According to project designer the rehabilitation design does not increase the storm sewer flow which means that the current system can serve the project. The project is in a ABFE zone. Closest body of water is 200 yds. to the West is the Nigua river, in between are Road #179 and developed lots. No additional storm water is to be generated by the rehabilitation and project does not discharge storm sewer water into river. No adverse effect or impact is expected. Supporting Document: 5, 11 (HH Designer's Letter, Civil Drawings)
Unique Natural Features and Agricultural Lands	1	The proposal is for a rehabilitation project of an existing multifamily complex. The site is within a densely populated urban landscape. There are no unique natural features or agricultural lands within or adjacent to complex site. Supporting Document: 1, 29 (Narrative, Prime Farmlands Map)
Vegetation and Wildlife	1	The proposal is for a rehabilitation project of an existing multifamily complex. The site is a within a densely populated urban landscape. Existing vegetation will be enhanced by a new landscaping design. There are no anticipated adverse effects on vegetation and wildlife. Supporting Document: 1, 21, 27 (Narrative, FWS, Wildlife Refuge Map)

Other Factors		Source or Documentation
Flood Disaster Protection Act [Flood Insurance] [§58.6(a)]	1	This complex and its site were located outside the special AE FEMA flood zone per map and non-flood certification. FEMA MAP #72000C0370 of November 18, 2009. However, the area was included in the special zone “A” by FEMA in Advisory map of April 13, 2018, post hurricane María. Therefore, project was referenced to comply with 8 step process. The third-party consultant determined that project did not need to comply with steps 2,3 & 7 and only required a 5 step processes that was completed and included as supporting document. Project is compliant with 24 CFR 55, Executive Order 11988 after 5 step process. As the project is located in Zone X of the current FIRM, flood insurance is not required. The project is in compliance with this Factor. Supporting Document: 23, 31, 30 (FEMA Firmette, 8 Step Report, Planning Board Coastal Management)
Coastal Barrier Resources Act/ Coastal Barrier Improvement Act [§58.6(c)]	1	The project site is located over 1 mile from the nearest coastline. The distance from the project to the coast and infrastructure that lie between the two serve as a buffer protecting the coast from the construction endeavor and future project use. The Coastal Barrier Resource System Mapper further confirms that the site is not identified as a ‘protected area. Therefore, the project activity has no impact on this Factor and is in compliance with applicable regulations Supporting Document: 25 (CBRS)

Airport Runway Clear Zone or Clear Zone Disclosure [§58.6(d)]	1	The nearest airport runways from the site are over 15 miles away. Closest is a small regional airport to the Northeast, Dr. Hermenegildo Ortiz Quiñones, at Humacao and closest commercial is to the West, Mercedita airport, located in the city of Ponce, over 30 miles away. Closest civilian/military airport is Luis Muñoz Marín Airport over 50 miles away. A Noise Evaluation rendered that area noise is much lower than HUD limits. Supporting Documents: 6, 32, www.faa.gov (Noise Evaluation, Airport Line Distance Map)
Other Factors		

Summary of Findings and Conclusions

ALTERNATIVES TO THE PROPOSED ACTION

Alternatives and Project Modifications Considered [24 CFR 58.40(e), Ref. 40 CFR1508.9]

(Identify other reasonable courses of action that were considered and not selected, such as other sites, design modifications, or other uses of the subject site. Describe the benefits and adverse impacts to the human environment of each alternative and the reasons for rejecting it.)

The Municipality is interested in residential developments for affordable housing within its urban limits. Given the character of the community within which it lies, the available infrastructure, access to principal roads and highways, and its readily accessible location, the site is perfectly suitable for the intended use.

Alternatives:

1. Not doing the rehabilitation project or doing a partial rehabilitation would mean that the complex's infrastructure could eventually collapse causing unsafe conditions and the relocation of the current tenants. This would result in the reduction of the number of apartments available for affordable housing in the municipality of Arroyo. This would be inconsistent with the municipality's interest in providing for the high demand for affordable housing.
2. A 2nd option would be the demolition of the existing structures and building from the ground up. This alternative would result in an increment of costs, an excessive amount of construction debris, and the relocation of tenants to other affordable housing units which would create a further shortage while project is under construction. We estimate additional project completion time would be two to three years compared to the rehabilitation. Clearly this alternative would not be feasible.

Supporting Document: 7, 18 (Market Study, Municipal Endorsement)

No Action Alternative [24 CFR 58.40(e)]

(Discuss the benefits and adverse impacts to the human environment of not implementing the preferred alternative).

No action would entail putting tenants at risk. This project is clearly in tenants and Municipality's best interest to create affordable, safe, and modern affordable housing. Brisas de Arroyo is a multifamily project that provides housing to all types of populations, including elderly, single and young families.

Mitigation Measures Recommended [24 CFR 58.40(d), 40 CFR 1508.20] (Recommend feasible ways in which the proposal or its external factors should be modified in order to minimize adverse environmental impacts and restore or enhance environmental quality.)

Conditions for approval and mitigation measures to be adopted throughout the construction are specified in the drawings, reports, and endorsement and/or recommendation letters herein presented (see supporting documents):

- ESA – PHASE I (ASTM 1527-13)
- Soil Study / Geotechnical Report
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- State Historic Preservation Office (SHPO)
- Fish & Wildlife
- Notification of Construction Permit
- ICC-700 National Green Building Standard
- Certification State Costal Management
- Wetland Preliminary Jurisdiction Determination
- 8 Step Report

Additional Conditions:

4. Implementation of 'Best Management Practices' as proposed by the US Department of Interior in their Blanket Clearance Letter dated October 24, 2019.
5. Contractor must comply with DNER.

Supporting Documents

1. Project Narrative
2. Phase 1 Environmental Site Assessment
3. State Historic Preservation Office (SHPO) - Letter
4. Soil Study / Geotechnical Report
5. Designer's Hydraulic & Hydrological Letter
6. Noise Assessment
7. Market Study Report
8. Appraisal Report
9. Recomendación Ambiental (DEC) Determinación de Cumplimiento Ambiental
10. ICC-700 National Green Building Standard Check List
11. Drawings
12. Zoning Map
13. NOT USED
14. Notificación de Aprobación Permiso de Construcción
15. NOT USED
16. NOT USED
17. Lead Base Paint & Asbestos Report
18. Municipal Endorsement
19. NOT USED
20. Construction Recycling Plan Approval (Department of Natural and Environmental Resources)
21. US Dept of Interior - FWS
22. NOT USED
23. FEMA Map (Firmette) – Flood
24. Wetlands Inventory
25. Coastal Barriers
26. Sole Source Aquifers
27. Wildlife Refuge Map
28. Scenic Rivers
29. Prime Farmlands
30. PR Planning Board Letter – Federal Consistency Certification
31. 8 Step Report

--END OF DOCUMENT--



March 14, 2022

Rafael Ortiz, CPA
Controller
Star Management, Corp.
PMB 140 53 Esmeralda Avenue
Guaynabo, PR 00969

Ref.: United States Department of Housing and Urban Development Decision Process for E.O. 11988 as provided by 24 CFR §55.20 for the Brisas de Arroyo Residential Project.

Dear Mr. Ortiz:

Enclosed is the Technical Memorandum to comply with the United States Department of Housing and Urban Development Decision Process for E.O. 11988 as provided by 24 CFR §55.20 for the Brisas de Arroyo Residential Redevelopment Project in the Autonomous Municipality of Arroyo, Puerto Rico. The document covers the Floodplain 8-steps Management Decision Process as required by the U.S. regulation for the above-referenced residential development project.

If you have any questions or need additional information, please do not hesitate to contact me at (787) 467-8887 or via email at javier@diatomenvironmental.com.

Sincerely,

Javier Velez
Arocho

Javier Vélez Arocho

Partner

Diatom Environmental Services, LLC

Digitally signed by Javier Velez
Arocho
Date: 2022.03.14 16:57:50 -04'00'

BRISAS DE ARROYO FLOODPLAIN MANAGEMENT 5-STEP DECISION-MAKING PROCESS

Brisas de Arroyo - Arroyo, Puerto Rico, USA

--Brisas de Arroyo Morse Street East Section Arroyo (Cadastral #421-081-061-07-000)

--Decision Process for E.O. 11988 as Provided by 24 CFR §55.20

--24 CFR § 55.12 - Inapplicability of 24 CFR part 55

Step 1: *Determine whether the action is in a 100-year floodplain (or a 500-year floodplain for critical activities) or wetland.*

According to FEMA FIRM 72000C2135J eff. 11/18/2009 the project is located in the Flood Plane in zone A (46.9%), in 2018 after Hurricane María the Puerto Rico Planning Board revised the maps for the purpose of the ABFE (effective 13/03/2018 and designated the area as Coastal Zone A within the X zone. The SFHA is an area that would be inundated by the flood having a 1% chance of being equaled or exceeded in any given year (base flood). In April 2018, the map was amended to Coastal Zone. However, the changes do not affect the proposed action due to the similarity of the restrictions for both classifications. The FIRM is attached to this document. There are no wetland areas within or near the proposed site, as stated in the United States Fish and Wildlife letter from May 9, 2018. The existing vegetation in the area is typical of a highly impacted urban setting where the planting of exotic species is common.

This project is a major rehabilitation of affordable multifamily housing of greater than four units and, for these reasons, E.O. 11988- Floodplain Management and E.O. 11990- Wetlands Protection apply. This project meets some of the exceptions at 24 CFR 55.12. It, therefore, requires a 5-step analysis of the direct and indirect impacts associated with the construction, occupancy, and modification of the floodplain and wetland.

The proposed project, Brisas de Arroyo, LLC, consists of six (6), three (3) story residential apartment buildings and one (1), four (4) story residential apartment building for a total of one hundred and four (104) units, made of reinforced concrete and concrete block partitions, located in approximately 5.4 acres equivalent to 21,974.2098 square meters. The Municipality of Arroyo is the current owner of the project who acquired the property from the Office for the Liquidation of Accounts of the P.R. Urban Renewal and Housing Corporation in October 1996. This transaction significantly contributes to the Community Revitalization Plan of the Municipality. No LIHTC's have been awarded previously to this project.

The project will provide vital housing opportunities for low-income families in the municipality of Arroyo. There has been an increase in the demand for affordable housing alternatives within the municipal jurisdiction. The proposed project fits within the objectives of Arroyo's Territorial Plan of urban redevelopment to address the lack of urban space for new housing projects. The project is located near hospitals, schools, grocery stores, pharmacies, and a federal post office; most of the units are two and three-bedroom units, and it also preserves the stock of affordable non-elderly rental housing. The Río Nigua system has been a natural floodplain for many years. Therefore, this analysis will consider impacts to the floodway and concerns for loss of life and property.

Step 2: Notify the public for early review of the proposal and involve the affected and interested public in the decision-making process.

Based on 24 CFR § 55.12 - Inapplicability of 24 CFR part 55 to certain categories of proposed actions; the existing Brisas de Arroyo Multifamily Housing Project is exempt from complying with this section. According to the regulation; (a) The decision-making steps in [§ 55.20\(b\)](#), (c), and (g) (steps 2, 3, and 7) do not apply to the following categories of proposed actions:

(1) HUD's or the recipient's actions involving the disposition of acquired multifamily housing projects or "bulk sales" of HUD-acquired (or under part 58 of recipients') one- to four-family properties in communities that are in the Regular Program of National Flood Insurance Program and in good standing (i.e., not suspended from program eligibility or placed on probation under [44 CFR 59.24](#)). For programs subject to part 58, this paragraph applies only to recipients' disposition activities that are subject to review under part 58.

(2) HUD's actions under the [National Housing Act \(12 U.S.C. 1701\)](#) for the purchase or refinancing of existing multifamily housing projects, hospitals, nursing homes, assisted living facilities, board and care facilities, and intermediate care facilities, in communities that are in good standing under the NFIP.

(3) HUD's or the recipient's actions under any HUD program involving the repair, rehabilitation, modernization, weatherization, or improvement of existing multifamily housing projects, hospitals, nursing homes, assisted living facilities, board and care facilities, intermediate care facilities, and one- to four-family properties, in communities that are in the Regular Program of the National Flood Insurance Program (NFIP) and are in good standing, provided that the number of units is not increased more than 20 percent, the action does not involve a conversion from nonresidential to residential land use, the action does not meet the thresholds for "substantial improvement" under [§ 55.2\(b\)\(10\)](#), and the footprint of the structure and paved areas is not significantly increased.

(4) HUD's or the recipient's actions under any HUD program involving the repair, rehabilitation, modernization, weatherization, or improvement of existing nonresidential buildings and structures, in communities that are in the Regular Program of the NFIP and are in good standing, provided that the action does not meet the thresholds for "substantial improvement" under [§ 55.2\(b\)\(10\)](#) and that the footprint of the structure and paved areas is not significantly increased.

Step 3: Identify and evaluate practicable alternatives.

Based on 24 CFR § 55.12 - Inapplicability of 24 CFR part 55 to certain categories of proposed actions; the existing Brisas de Arroyo Multifamily Housing Project is exempt from complying with this section. According to the regulation; (a) The decision-making steps in [§ 55.20\(b\)](#), (c), and (g) (steps 2, 3, and 7) do not apply to the following categories of proposed actions:

(1) HUD's or the recipient's actions involving the disposition of acquired multifamily housing projects or "bulk sales" of HUD-acquired (or under part 58 of recipients') one- to four-family properties in communities that are in the Regular Program of National Flood Insurance Program and in good standing (i.e., not suspended from program eligibility or placed on probation under [44 CFR 59.24](#)). For programs subject to part 58, this paragraph applies only to recipients' disposition activities that are subject to review under part 58.

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(4) HUD's or the recipient's actions under any HUD program involving the repair, rehabilitation, modernization, weatherization, or improvement of existing nonresidential buildings and structures, in communities that are in the Regular Program of the NFIP and are in good standing, provided that the action does not meet the thresholds for "substantial improvement" under [§ 55.2\(b\)\(10\)](#) and that the footprint of the structure and paved areas is not significantly increased.

Step 4: Identify Potential Direct and Indirect Impacts Associated with Floodplain Development.

Leaving the project at Morse Street East Section will have minimal impacts on the floodplain. The complex has been operational for 41 years and has a footprint designed to minimize these impacts. The original design also reduces potential damage to the property as a result of the flooding. The area has experienced some flooding in the past but never above 1 meter of the proposed elevation. The property is located more than 1.0 miles north of Arroyo Bay, a protected surface water resource with a low possibility of being flooded by storm surges. No structures or improvements will be in the floodway.

The highest priority of this review is to prevent the loss of life. FEMA estimates that it would take a warning time of between five and seven hours to evacuate people from the area safely. The additional elevation will also help to protect the financial investment.

The city of Arroyo is a member of the National Flood Insurance Program, and structures located in the flood zone must comply with the local flood ordinance. HUD requires projects located in the floodplain to maintain flood insurance for the life of the property. Besides concerns for life and property, the city considered the natural and beneficial values of the floodplain. The natural resources of the floodplain include coast water, wetland, biological, and societal resources.

The construction will have minimal effects on water resources by reconstructing an existing building complex and managing stormwater runoff in and around the floodplain. The design manages runoff water from the project to avoid causing flooding of nearby properties.

The Fish and Wildlife Service has determined that the reconstruction/existence of the buildings will have no quantifiable impact on plant and animal life. Only native plants are to be used in the floodplain and on the site. Due to the distance of the project to the Río Nigua Estuary Wetland Area, there will be no costs because fill and compensatory mitigation are not required.

Societal resources were also considered during the design process. The designs are meant to complement the area's natural features and offer an aesthetically pleasing structure. The site will not affect agricultural lands, and efforts have been made to add proper landscape according to the US Building and state code.

Step 5: Where practicable, design or modify the proposed action to minimize the potential adverse impacts to lives, property, and natural values within the floodplain and to restore, and preserve the values of the floodplain.

(a) Preserving Lives: To maintain lives, Arroyo's Office of Municipal Emergency Management and Municipal Police and the Emergency Broadcast System will implement an early warning system should flooding conditions arise. In addition to the warning system, Arroyo has an emergency evacuation and relocation plan. The existing structures will also be marked with past and estimated flooding identification marks, and the common interior areas will display an evacuation plan. All residents will also be briefed on the location of the flood hazard area and evacuation plans upon placement.

(b) Preserving Property: To protect property, flood insurance will also be acquired and maintained to mitigate possible flood damage. The structures have been designed to withstand floods. All construction will use flood-resistant materials consistent with FEMA bulletins (see <https://www.fema.gov/media-library/assets/documents/2655?id=1580>).

(c) They are preserving Natural Values and Minimizing Impacts: The site condition described in Step 3 reduced floodplain impacts and prevented new construction from occurring in the floodplain. By modifying the stormwater and runoff management system throughout the site, the structure will have minimal water resources. Impacts to the floodplain will also be limited due to construction occurring within the previously developed area. In addition to the prohibition on impervious surfaces in and directly around the floodplain, the floodplain was preserved by avoiding additional construction throughout the floodplain. Arroyo is a coastal town, and implementation activities will occur within the project area to educate residents on the importance of conservation practices to avoid solid waste and other sources of pollution from reaching the neighboring Arroyo Bay. Additionally, the city works with local organizations in educating the residents on the importance of protecting the Arroyo's coastal environment.

Step 6: Reevaluate the Alternatives.

Although the Morse Street and East Section site is in a floodplain, the project has been adapted to minimize floodplain values. Additionally, steps were taken to reduce human life and property risks including evacuation plans, construction methods, and flood insurance. Because this is an existing building complex with minimal opportunities for increasing BFE elevations with new construction, the residents will need flood insurance. The city and the developer signed an agreement to provide residents with much-needed workshops, seminars, and lectures on critical social issues, including domestic violence and education opportunities. Due to state regulation, the developer alone will bear the costs of maintaining the statutorily required flood insurance premiums for the structure's life following the Flood Disaster Protection Act of 1973.

The costs of considering other alternatives around the area are problematic mainly due to the high price of available properties and scarcity of land suitable for development. Many areas within the urban center have flooding problems and poor stormwater infrastructure. The stormwater runoff costs here are worse than those of Morse Street East Section. For more than three decades, communities around the Brisas de Arroyo site have been experiencing severe flooding due to illegal construction on the wetland areas. The Puerto Rico Department of Natural and Environmental Resources spent more than \$100,000 annually in clearing the Río Nigua channel for recurrent flooding events. This surface water body is one of the flood controls projects to be sponsored by the US Army Corps of Engineers aimed to control

flooding affecting this part of the town. The cost of the mitigating measures for these environmental impacts and endangered species habitat made other sites prohibitively expensive to develop. The amount of fill and soil stabilization required would cost hundreds of millions of dollars, which significantly exceeds the cost of the Brisas de Arroyo site.

As documented in the market analysis, construction outside of the floodplain site is not viable because the sites do not meet one or more of the selection criteria:

- (a) The project cannot cause residents from downtown Arroyo to become displaced;
- (b) The project must comply with the PRHD Guidelines for low-income families;
- (c) All apartment units will be for rental to meet community needs;
- (d) The monthly rental cost will not exceed the fees established by the PR Housing Department;
- (e) The project provides housing opportunities to women heads of families, and
- (f) The site has access to public transportation and infrastructure for people with disabilities

Due to lack of available land and properties, contamination, wetland, financial costs, and other concerns, as well as the requirement that the project is constructed within city limits due to state regulations, the Brisas de Arroyo site is the only location that satisfies these needs and concerns without displacing residents. The no-action alternative is also impracticable because it will not satisfy the need to provide affordable living options to working low-income families.

Step 7: Determination of No Practicable Alternative

Based on 24 CFR § 55.12 - Inapplicability of 24 CFR part 55 to certain categories of proposed actions; the existing Brisas de Arroyo Multifamily Housing Project is exempt from complying with this section. According to the regulation; (a) The decision-making steps in [§ 55.20\(b\)](#), (c), and (g) (steps 2, 3, and 7) do not apply to the following categories of proposed actions:

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(2) HUD's actions under the [National Housing Act \(12 U.S.C. 1701\)](#) for the purchase or refinancing of existing multifamily housing projects, hospitals, nursing homes, assisted living facilities, board and care facilities, and intermediate care facilities, in communities that are in good standing under the NFIP.

(3) HUD's or the recipient's actions under any HUD program involving the repair, rehabilitation, modernization, weatherization, or improvement of existing multifamily housing projects, hospitals, nursing homes, assisted living facilities, board and care facilities, intermediate care facilities, and one- to four-family properties, in communities that are in the Regular Program of the National Flood Insurance Program (NFIP) and are in good standing, provided that the number of units is not increased more than 20 percent, the action does not involve a conversion from nonresidential to residential land use, the action does not meet the thresholds for "substantial improvement" under [§ 55.2\(b\)\(10\)](#), and the footprint of the structure and paved areas is not significantly increased.

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Step 8: *Implement the Proposed Action*

Brisas de Arroyo will assure that this plan, as described above, is executed and necessary language will be included in all agreements with participating parties. The Municipality of Arroyo will also take an active role in monitoring the construction process to ensure no unnecessary impacts occur or unnecessary risks are taken. Arroyo will monitor the flood insurance requirement for the life of the property by listing the agency as an interested party on the 2nd mortgagee/other box of the flood insurance application and placing a covenant on the property that lasts for the useful life of the structure.



Certificación de Cumplimiento Ambiental por Exclusión Categórica

REHABILITATION BRISAS DE ARROYO APTS

Fecha de Expedición:

19/NOV/2020

Datos de Localización

De conformidad con las disposiciones contenidas en las leyes y los reglamentos vigentes, se expide la presente Certificación de Exclusión Categórica para la acción(es) antes descrita(s):

Dirección Física:

Dirección: STATE ROAD PR-178, KM 0.9
MORSE STREET, PUEBLO WARD
Municipio: Arroyo
Estado: Puerto Rico
Código Postal: 00714

Dueño:

Star Arroyo, LLC

Sometido por:

Julio González - Fortuño

Calificación

Distrito(s) de Calificación: R-I
Distrito en el Mapa de Inundabilidad: X (99.4%), 0.2 PCT (0.6%)
Tipo de Suelo: Cn (41.7%), Gm (34.4%), SNS (24.0%)

Número(s) de Catastro:

421-081-061-07

Datos de determinación

Exclusión Categórica

Números de exclusión categórica aplicables de acuerdo a la R-11-17 de la JCA*:
13,14

Fecha de Expedición:

19/NOV/2020

Condiciones Generales

De acuerdo con la solicitud de esta Determinación, se certificó cumplimiento con los siguientes requisitos, cuyo incumplimiento podrá repercutir en la revocación de esta Determinación:

1. Las actividades de uso o de construcciones livianas de nuevas estructuras no están ubicadas o desarrolladas en:

a. Areas especiales de riesgo de inundaciones, derrumbes o marejadas.

b. Areas en las que la Junta de Calidad Ambiental (JCA) u otras agencias gubernamentales estatales o federales hayan determinado que existe un grado de contaminación que excede el permitido por los reglamentos vigentes.

c. Areas ecológicamente sensitivas o protegidas, según establecido por el Departamento de Recursos Naturales y Ambientales (DRNA), en las que existan especies únicas de fauna o flora o que estén en peligro de extinción o en las que puedan afectarse ecológicamente sistemas naturales o artificiales, ya sea en forma directa o indirecta.

d. Areas en las que existan problemas de infraestructura o de deficiencias en los sistemas de servicios de suministro de agua potable, disposición de las aguas sanitarias, suministro de energía eléctrica o capacidad vial para el manejo adecuado del tránsito de vehículos de motor.

e. Areas que constituyan yacimientos minerales, conocidos o potenciales.

f. Areas en las que existen yacimientos arqueológicos o de valor cultural, según determinado por el Instituto de Cultura Puertorriqueña (ICP).





Certificación de Cumplimiento Ambiental por Exclusión Categórica

- g. Areas de topografía escarpada, en cuencas hidrográficas donde se puedan afectar fuentes de abasto de agua potable.
- h. Cualquier otra acción que la JCA haya establecido mediante Resolución.
2. No descargarán contaminantes a cuerpos de agua, ni generará desperdicios peligrosos o emisiones al aire que excedan dos (2) toneladas al año de contaminantes de aire criterio, o cinco (5) toneladas de cualquier combinación de contaminantes criterios, ni emitirá al aire contaminantes peligrosos o tóxicos u olores objetables.
3. La disposición o descarga de las aguas usadas se realizará mediante acometidas a un sistema sanitario existente, lo cual requerirá la obtención del endoso de la AAA previo a la solicitud de permisos de construcción.
4. Que existe la infraestructura necesaria (agua potable y alcantarillado sanitario suministrado por la AAA, energía eléctrica, alcantarillado pluvial, vías de acceso) para servir a la operación del proyecto o actividad propuesta, con excepción de los proyectos agrícolas que se ubican por regla general en las áreas rurales, así como las residencias unifamiliares asociadas en las que las instalaciones de esa naturaleza son limitadas.
5. La operación de la actividad no afectará áreas residenciales o zonas de tranquilidad por contaminación sónica según establecido por el Reglamento para el Control de la Contaminación por Ruido.
6. Que el desarrollo de la instalación comercial, industrial, de servicio, institucional y de desarrollo de terrenos para uso turístico y proyectos recreativos no excede de cinco mil (5,000) pies cuadrados de construcción en área total de ocupación y área bruta de piso y que cumple con las condiciones de ubicación y operación establecidas por la OGPe u otra agencia con jurisdicción, según sean aplicables.
7. El uso de edificios o estructuras existentes para facilidades comerciales, almacenes y usos industriales o de servicios no excederán de cien mil (100,000) pies cuadrados en área total de ocupación y área bruta de piso. Dicha operación deberá cumplir con las condiciones de ubicación y operación establecidas por la OGPe u otra agencia con jurisdicción, según sean aplicables, y las establecidas para las exclusiones categóricas en este Reglamento.
8. Para la ejecución o desarrollo de las acciones aprobadas como exclusiones categóricas, se requerirá la obtención de los permisos aplicables de las agencias gubernamentales para las etapas de construcción y operación.
9. La acción no ha sido fragmentada o segmentada para fines de la evaluación y será determinación de la agencia proponente si la misma satisface o no los requisitos para ser considerada y ejecutada bajo una exclusión categórica.
10. Que ha cumplido con el requisito de publicación de un Aviso Público de conformidad con la Regla 122 del Reglamento de Evaluación y Trámite de Documentos Ambientales de la JCA, en el caso que la acción propuesta esté relacionada al uso u otorgamiento de fondos federales que requieran un proceso de evaluación parecido al de NEPA (NEPA-Like Process).

Aviso

Si luego de haberse aquí dado cumplimiento con el Artículo 4(B) de la Ley Núm. 416 surgieran variaciones sustanciales en la acción propuesta que requieran la evaluación a los impactos ambientales, habrá que presentar el correspondiente documento ambiental, de conformidad con la Ley sobre Política Pública Ambiental.

Condiciones Especiales

NINGUNA

Firma / Sellos

Fecha de Expedición:





Certificación de Cumplimiento Ambiental por Exclusión Categórica

19/NOV/2020



Ing. Gabriel Hernández Rodríguez
Secretario Auxiliar



PROJECT NARRATIVE

We are proposing a transaction for the acquisition and rehabilitation of the project *Brisas de Arroyo* (cadastral number 421-081-061-07-000). The rehabilitation is ready to commence as soon as the Low-Income Housing Tax Credits (LIHTC) and CDBG-DR funds are approved.

PROJECT DESCRIPTION

Brisas de Arroyo (“the Project”) is located in Arroyo, Puerto Rico and was constructed for first occupancy approximately in 1980.

The project consists of six (6), three (3) story residential apartment buildings and one (1), four (4) story residential apartment building for a total of one hundred and four (104) units, made of reinforced concrete and concrete block partitions, located in 5,5908 *cuerdas* equivalent to 21,974.2098 square meters.

- Unit mix:
 - ❖ Eight (8), one-bedroom units (5,512.92 square feet)
 - ❖ Eighteen (18), two-bedroom units (14,617.86 square feet)
 - ❖ Sixty-six (66), three-bedroom units (62,692.94 square feet)
 - ❖ Twelve (12), four-bedroom units (14,341.88 square feet)
- Buildings:
 - ❖ Building #1: Twelve (12) units, three (3) stories
 - ❖ Building #2: Twelve (12) units, three (3) stories
 - ❖ Building #3: Thirty-two (32) units, four (4) stories
 - ❖ Building #4: Twelve (12) units, three (3) stories
 - ❖ Building #5: Twelve (12) units, three (3) stories
 - ❖ Building #6: Twelve (12) units, three (3) stories
 - ❖ Building #7: Twelve (12) units, three (3) stories
 - ❖ Building #8: Administration Office and Community Room
- Additional structures and amenities:
 - ❖ Two (2) playgrounds
 - ❖ One (1) basketball court
 - ❖ Asphalt paved areas
 - ❖ Green Areas
 - ❖ Mailbox Station
- Parking spaces
 - ❖ 108 parking spaces

Star Arroyo LLC

Urb. Alto Apolo Calle Turquesa # 2116, Guaynabo, PR 0069
Phone: (787) 790-0525, Fax: (787) 790-0565, Email: starmcpr@gmail.com

The legal description is as follows;

“**URBANA:** Predio de terreno sito en el Barrio Cuatro Calles del término municipal de Arroyo, Puerto Rico, compuesto de un área de 5,5908 cuerdas equivalentes a 21,974.2098 metros cuadrados, y en lindes, por el NORTE, en 142.2916 metros, con Sucesión Manuel Lamb, Agustín Ayala, René Badue, Calle sin salida y la Urbanización San Antonio; por el SUR, en 191.73 metros, con Belén Sánchez, Juan Maysonet, predio perteneciente al Estado Libre Asociado de Puerto Rico, predio perteneciente al Municipio de Arroyo y solares de la Urbanización San Antonio; por el ESTE, en 176.2544 metros, con la Urbanización San Antonio; y por el OESTE, en 167.86 metros, con la Calle Morse, Belén Sánchez, Joaquín Dávila y el Estado Libre Asociado de Puerto Rico.”

PRIORITY CONSIDERATION OF THE STATE HOUSING PLAN AND ACTION PLAN

The Municipality of Arroyo is the current owner of the project who acquired the property from the Office for the Liquidation of Accounts of the P.R. Urban Renewal and Housing Corporation in October 1996. This transaction significantly contributes to the Community Revitalization Plan of the Municipality. No LIHTC's have been awarded previously to this project. The sale of the project will also provide the necessary funds to the seller to continue with the Revitalization Plan in other areas of the municipality.

The project is located near hospitals, schools, grocery stores, pharmacies, and a Federal post office; most of the units are two and three-bedroom units; and it also preserves the stock of affordable non-elderly rental housing.

Brisas the Arroyo is a multifamily project that provides housing to all types of populations, including elderly, single family, and young families, helping to decrease overcrowded homes and persons living in substandard housing after the devastating impact of Hurricane María. As a result of the damages caused by this hurricane, the demand for affordable housing on the island has significantly increased.

The project targets the most vulnerable population in accordance to the Map of Low to High Social Vulnerability communities where FEMA verified loss applicants are located. The Municipality of Arroyo is located within a Medium to High Social Vulnerability and FEMA losses Index.

With the proposed major rehabilitation, we will be able to transform the project in a more resilient, sustainable, and viable community adding several energy efficiency improvements. (Please refer to Project Description for improvements and amenities added to the project).

INCOME TARGETING AND MARKET DEMAND

Fifty (50%) percent of the rental residential units in this project will be targeted to individuals whose income is fifty (50%) percent or less of the area median income.

The project will be subject to the LIHTC regulations and will sign a Land Use Restrictive Covenants Agreement with the PRHFA for a period of forty (40) years (ten [10] years beyond the extended compliance period), similar to the draft provided with the LIHTC application.

Principal facts/conclusions of the market demand analysis:

- The renovation of the units will be in small phases (clusters) with a temporary relocation of the tenants until completion of renovation work of their units. This condition presents a better economic position than a new construction project that would require full absorption after construction.

Star Arroyo LLC

Urb. Alto Apolo Calle Turquesa # 2116, Guaynabo, PR 0069
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- The demand analysis shows a total of 5,570 qualified renter households with the qualified income levels and household size in the market area to occupy the subject units. The subject consists of 104 units providing an overall capture rate of 1.9% ($104 \div 5,570$) in the market area, evidencing positive demand economics. The penetration rate which represents the percentage of qualified households that all the existing and proposed competitive units, including the subject, must capture results in 8.9% also presenting positive economics.
- The potential net capture demand analysis takes into account the renter households searching for a housing in better condition, more affordable or in a better location but deducting any additional supply of units in the pipeline that represent competition to the subject units. Based on Census data, 44.1% of the total qualified renter households have rents overburned and 3% of the households are living in deteriorated units. The analysis results in 2,623 qualified renter households with rent overburned or in deteriorated housing with potential to occupy the 104 subject units. No other rental project is currently under construction, in the pipeline or in the delivery process in the market area thus there is no competition for the subject units at the present time. Therefore, considering net potential qualifying households of 2,623 households, a captive demand for the 104 subject units of 4.0% results ($104 \div 2,623$), also presenting adequate demand implications.
- The capture rate analysis by bedroom type considering the subject unit mix of 8 one-bedroom units, 18 two-bedroom units, 66 three bedroom units and 12 four bedroom units results in adequate rates for each unit type.
- The capture rate analysis by bedroom type provides attractive capture rates of 0.4% to 4.8%, averaging 1.9%. Though supporting the current unit mix of the subject rental project, this analysis suggests higher demand potential for one- and two-bedroom units in the market area. Current market trends point to the construction of a higher share of two-bedroom units at new projects consistent with the decreasing trend in household size.
- As a renovated project in the town core of Arroyo, close to services and supporting uses including commercial, educational, and health care, and with easy access to employment centers and facilities in Guayama, the subject project should capture not only unserved demand but should also be able to draw from older, ageing projects or properties with physical plant deficiencies, and from those in inferior locations.
- Given the limited income in the general area and the current high living costs the population prefers rental housing as a housing alternative.
- There is a substantial number of households under the poverty status that will demand additional housing. The analysis shows the low income oriented multi-family housing projects in the market area with occupancy levels of 91% to 100% with an average occupancy level of 96%. The subject project has had adequate historical occupancy levels with an increase in the actual vacancy levels due to Covid-19 pandemic with delays in the qualification process. The adequate occupancy levels present good economics for the renovation of the subject units with tax credits.
- In interviews at the municipal housing departments, the officials reported an increase in affordable housing needs after Hurricane Maria with currently 180 households in the waiting list out of an original total of 300 after Hurricane Maria in 2017. The subject project would represent alternative housing post Hurricanes Irma and Maria and would benefit the community in the situation of a natural disaster by providing resilient housing.
- The subject project after renovation will include solar panels with batteries to serve the administrative building and common areas and water cistern to serve all the units. Therefore, the subject project

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would represent alternative housing post Hurricanes Irma and Maria and would benefit the community in the situation of a natural disaster by providing resilient housing.

- The devastation caused by Hurricanes Irma and María in September 2017 resulted in more families willing to relocate from vulnerable and rural areas with deficient housing construction to adequately built modern developments in urban areas. The subject project will provide a safe place for families from places under high risk of flooding and/or deficient housing construction, thus government agencies would not be again required to use disaster funds for this population in the future.
- There are five multi-family affordable rental project in the market area, including the subject, comprising 495 units. These projects are rental subsidized with most tenants consisting of families with limited household income. Therefore, the renovation of the subject units to continue its current rental operation is supported by the existing demand for low income rental units and adequate occupancy levels of the existing projects. The renovation of the subject units will not increase the inventory of affordable rental housing in the sector and are expected for re-occupancy by the existing tenants, thus not affecting other existing rental projects in the market area. Demographic analysis and the actual field studies performed evidence adequate demand for low income rental housing in the market area. The potential renovation of the subject project would extend the rental operation of the units and provide safer and more resilient units to natural disasters. Given the high historical occupancy levels and the existing demand for low income rental units, attractive occupancy levels are thus expected. The proposed renovation will be performed in small phases (clusters) with a temporary relocation of the existing tenants until completion of their unit renovation. Therefore, after renovation no lease-up period will be required for the subject project as the existing tenants will re-occupy the renovated units.

FINANCIAL STRUCTURE

The scenario presented in this proposal, considered the requirements of RD, The Richman Group, and the P.R. Housing Finance Authority. Our intention is to work with numbers that are feasible to all the parties involved that will enable us to move forward to a closing as soon as possible. The following is the financial information of the transaction:

The total cost of the acquisition and rehabilitation will be **\$36,619,033**. Of this amount, \$4,936,878 is related to the purchase of land and building (\$4,709,763 purchase price plus related costs, that may vary depending on the outstanding mortgage loan to be assumed) and \$31,682,155 are related to the rehabilitation. To fund these costs, Star Arroyo LLC has submitted or will submit proposals/applications to different Agencies/Entities as follows:

INTERIM FINANCING:

- **Banco Popular de P.R / Puerto Rico Housing Finance Authority (Tax-Exempt Financing)** - We received a commitment for interim tax-exempt financing for a total amount of \$18,700,000 which funds will be used to cover the costs of acquisition and rehabilitation jointly with other financing sources. This loan is originated from tax-exempts bonds issued by the P.R. Housing Finance Authority (PRHFA). This loan will bear interests at 5.5% and will be liquidated with CDBG-DR funds and LIHTC proceeds upon the completion of the rehabilitation. A loan agreement will be signed between the owner and PRHFA and a mortgage note will be assigned to Banco Popular, entity establishing the term of the financing.

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PERMANENT FINANCING:

- **Puerto Rico Housing Finance Authority (LIHTC)** - Low Income Housing Tax Credits (LIHTC) has been requested for \$1,062,501 annually, for a total of \$10,625,010 for ten consecutive years. These credits will be acquired by The Richman Group.
- **The Richman Group. (Capital Contribution)** - This investment partnership is the entity that will contribute equity capital in the amount of \$.65 per dollar of LIHTC available to the Investor Member over the full 10-year credit period. The total amount of equity based upon annual LIHTC of \$1,062,501 (99.99% of \$.65) will be **\$6,905,568**.
- **USDA Rural Development (Assumption, Subordination (during construction), and Modification of Terms of the actual loan)** – (NO ADDITIONAL FUNDS ARE BEING REQUESTED TO RD). We will assume the outstanding balance of the actual mortgage loan estimated to be **\$1,109,763** at the closing date, (or any other balance at closing) modifying its terms extending it to 30 years, at a net interest rate of 1.5% (after deducting the 1% interest subsidy) with an annual debt service of \$45,960. This amount represents a permanent financing source in the transaction. No additional permanent loans are permitted in RD deals.

We will be requesting the subordination of the RD loan during the period of construction, leaving the construction lender in the first lien position during that period. After the construction period, the RD loan will be in a first lien position.

In addition to the amounts mentioned above, there will be no other funds requested to Rural Development, including rent increases or subsequent section 515 loans.

Other permanent Financing Sources:

- **Managing Member Loan (CDBG-DR)** – Star Arroyo Manager Corp., as Managing Member of Star Morovis, LLC, will provide **\$28,168,703** to cover a portion of the developer costs. These funds, originated from CDBG-DR funds awarded to the Managing Member, will be loaned to Star Arroyo LLC at an 6% interest rate for a thirty (30) year term, but payable only from the Return to Owner amount, or upon sale or refinancing of the project. This mortgage loan will be in a second lien position.

Star Arroyo Manager Corp., as Managing Member of Star Arroyo LLC, will provide funding for any excess development costs not covered by the previous mentioned permanent financing sources.

SUPPORTIVE SERVICES

Supportive Services will include the services of a full time Social Worker to assist tenants as follows:

- Promote good relations and positive attitude between residents, with the community and with the administration.
- Analyze conduct of tenants in their living environment and assist in cases considered appropriate.
- Find probable causes of inappropriate social conduct of residents and of the opinions and feelings of their living environment.
- Provide alternatives and counseling of alternatives to improve their conduct.
- Organize Residents' Associations and committees, supervise their action plan, and assist in their implementation.
- Coordinate cultural, social, and recreational activities with residents.
- Prepare a social service program that satisfies the needs of all residents.

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KNOWN ISSUES OR POTENTIAL OBSTACLES

There are no known issues or potential obstacles for the acquisition and rehabilitation of the Project.

PROPOSED PURCHASER

Star Arroyo LLC (“Proposed Purchaser”) is a profit corporation created on September 25th, 2020 pursuant to the laws of the State of Delaware and duly authorized to conduct business within the Commonwealth of Puerto Rico. The purpose of Star Arroyo LLC is to acquire, develop, finance, construct, rehabilitate, own, maintain, operate and syndicate *Brisas de Arroyo*, a low-income family housing project located in Arroyo, Puerto Rico. Its principals have experience in development, rehabilitation and administration of other similar properties (seven [7] rehabilitations, seven [7] new construction and a total of thirty-six [36] in management services). On June 26th and June 28th, 2016 principals of Star Arroyo, LLC, closed three (3) similar transactions of the projects *Parque del Retiro I*, *Esmeralda del Sur*, and *Parque del Retiro II*. In June 2020, principals of Star Arroyo also closed a transaction for new construction of the project San Blas Apartments involving CDBG-DR funds. In these transactions USDA Rural Development, the P.R. Housing Finance Authority, Banco Popular of P.R., and The Richman Group were involved.

These same Agencies and/or Entities will be participating in this transaction.

Star Arroyo LLC, Star Arroyo Manager Corp., and Star Management Corp. have the same principals in each corporation:

Mr. Jorge L. Trigo Cordova	President
Mrs. Katherine Reyes Reed	Vice President
Mrs. Nancy Morales Robles	Secretary

The Managing Member, Star Arroyo Manager Corp., is an affiliated company of Star Arroyo LLC and Star Management Corp., the Managing Agent.

The entity has site control by means of a Purchase Agreement dated November 16, 2020 between the Municipality of Arroyo and Star Arroyo LLC. This agreement is effective through December 31st, 2022.

There is no identity of interest between seller and purchaser.

A list of other related entities is included in Page 4 of the LIHTC Application.

PROPOSED MANAGEMENT

Star Management Corp., (SMC) is the Proposed Management Agent. SMC is a corporation dedicated to the development, acquisition and management of low income housing with State and federal subsidies in Puerto Rico since 1994. As of today, SMC is responsible for the administration of thirty-six (36) projects for a total of three thousand one hundred eighty nine (3,189) units distributed around the island of Puerto Rico. SMC is an organization with extensive and varied experience in the housing industry under the different programs of USDA Rural Development (USDA), Department of Housing and Urban Development (HUD), the Puerto Rico Housing Finance Authority (PRHFA) which administers the Low-Income Housing Tax Credit (LIHTC) program (Section 42 of IRS) and Department of Housing Law 173 program.

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Key Star Management Personnel

President - Mr. Jorge L. Trigo Cordova

In July 2005, Mr. Jorge L. Trigo was appointed as President and CEO of Star Management Corp. He has more than thirty (30) years experience in the Commercial and Housing Industry. He is in charge of the daily operations related to the development, acquisition, management contracts, new business and overseeing the general administration and finances associated to Star management Corp. and low income housing projects. He is also responsible for processing private financing, Section 42 Low Income Housing Tax Credit applications with the Puerto Rico Housing Finance Authority and transfer of physical assets pertaining to HUD and USDA Rural Development Projects.

Vice President - Mrs. Katherine Reyes Reed

Since 1994 to present, Mrs. Reyes has been in charge of Project Management Field Operations assuming Federal and State Rules and Regulations Compliance. Responsible for overseeing all matters related to HUD, USDA Rural Development and Puerto Rico Housing Finance projects administered by Star Management Corp. She is in charge of management aspects, such as Leasing and Occupancy functions, overall Management Procedures, Financial management and Tenant Services. She is responsible for implementing and maintaining, records and controls for an effective monitoring of project operations and compliance with Federal Regulations. She also participates in the evaluation of Operating Budgets, Cash Flows, Comparison to Budget, Audited Financial Statements and other reports required by the Owner and make recommendations as needed.

Controller - Rafael Ortiz Arroyo, CPA

In August 2005 was appointed as Controller. He is in charge of the Accounting Department and is responsible for the maintenance of accounting records; cash management and investments, payroll; accounts payable; internal controls; cost reduction policies; budget and projections; financial statements; audits; and tax reporting requirements of the Corporation and the thirty-six (36) housing projects. Mr. Ortiz also monitors compliance of laws, regulations and agreements with State and Federal regulatory agencies, investors, banks and other related to the accounting administration of the housing projects. He has experience in the external and internal audit fields and has worked with subsidized housing related entities since 1994.

Operations Manager – José F. Lomeña Trigo

In January 2017, Mr. Lomeña was appointed as Operations Manager. He is in charge of the day to day management and physical operations, as well as supervision of project personnel; establishing and enforcing Company policies and procedures; assisting in the organization of project staff meetings to discuss management policies and regulations, monthly reports and overall project performance; preparing correspondence with respect to project administration with the Department of Housing and Urban Development (HUD), USDA Rural Development (RD) and Puerto Rico Housing Finance Authority (PRHFA); planning, developing and management of all 3,189 units distributed in all thirty-six (36) projects of federally subsidized low-income housing. Mr. Lomeña is a Certified Occupancy, Fair Housing and Tax Credit Specialist.

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Additional key management personnel are:

Certified Occupancy and LIHTC Specialist – Carmen López

Certified Occupancy Specialist – Stephanie Trigo Reyes
Katherine Trigo Reyes

Certified Maintenance Specialist – Guillermo Feliciano

Information Technology Specialist –Pablo Ayala

PROPOSED REHABILITATION

We are expecting to commence rehabilitation one (1) month after closing with all entities/agencies involved. The rehabilitation is expected to be completed in thirty (30) months.

None of the existing dwelling units are handicap compliant or meet current accessibility requirements.

The rehabilitation will consist of the following upgrades and new construction:

Site:

1. The existing roads & parking asphalt will be milled, and a new asphalt carpet will be placed.
2. New wheel stops and line markings will be installed.
3. Sixteen Handicapped Parking will be separated and marked for their use.
4. The site sidewalks and handicapped ramps will be reworked to assure it complies with the required accessibility requirements.
5. Landscaping will be augmented to increase curb appeal.
6. A new entrance monument and sign will be installed.
7. Garbage Stations will be modified to ensure ADA access.
8. The existing basketball court will be remodeled.
9. Bike racks and a bike storage structure will be installed on the site.
10. The playground will be expanded.

Multi-Purpose Building:

1. Lead abatement will be performed.
2. A 700-sf expansion will be added to the building.
3. The accesses and the interior spaces will be redone to assure it complies with the required accessibility requirements.
4. New cabinets, shelving, doors, and windows will be installed
5. New ceramic tile floor will be installed.
6. New bathrooms ADA compliant and with water saving equipment will be constructed.
7. New mailboxes will be mounted.
8. New roofing will be installed.
9. All interior and exterior paintable areas will be painted.
10. Electricity will be reworked to comply with the current code.
11. New LED lamps will be installed that comply with the current energy codes.
12. New generator will be installed

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New Dwelling Unit Distribution:

All first-floor dwelling units will be remodeled so that they are either fully handicapped units or convertible units so that the final distribution will be as follows:

Apt. Size	Total # of Apts.	Handicapped	Convertible	Regular apartments
1 bdrm	8 apt	1 apt	1 apt	6 apt
2 bdrm	18 apt	3 apt	3 apt	12 apt
3 bdrm	66 apt	10 apt	10 apt	46 apt
4 bdrm	12 apt	2 apt	2 apt	8 apt
Total	104 apt	16 apt	16 apt	72 apt

1. All first-floor dwelling units will be fully accessible which will include some area expansion, new bathrooms, walls, and new floors.
2. Furthermore, all handicapped dwelling units will comply with the existing ADA code requirements.
3. Three of the sixteen handicapped dwelling units will be outfitted with hearing and sight impaired equipment.

Dwelling Units:

1. All dwelling unit structures will receive a new roof that complies with the required energy code.
2. All structures will receive a termite control treatment.
3. All kitchen cabinets will be removed and replaced with new cabinets. Handicapped units will have handicapped compliant cabinets.
4. All existing shelving will be replaced with new wire shelving.
5. All windows will be removed and impact resistant, compliant with required energy code windows will be installed.
6. At all windows that do not have an overhang Bahamas Shutters will be installed.
7. All exterior, interior, and closet doors will be replaced.
8. All bathroom tilework will be replaced.
9. Existing wall tile at the kitchen area will be replaced.
10. New Gypsum Furring including all required insulation will be placed on all exterior walls in accordance with the energy code.
11. All interior and exterior paintable areas will be painted.
12. New bathroom accessories will be installed at all dwelling units. Handicapped units will have handicapped compliant accessories.
13. New Clothes Hangers, fire extinguishers and apartment signs will be installed at all dwelling units.
14. All stoves and refrigerators will be replaced. Handicapped units will have handicapped compliant appliances.
15. All bedrooms, kitchens and living rooms will have a new Energy Star ceiling fan installed.

Electrical and Mechanical:

1. All bathtubs will be changed to showers. Handicapped units will have handicapped compliant showers
2. All toilets, lavatories and kitchen sinks will be changed for water saving equipment. Handicapped units will have handicapped compliant equipment.

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3. All existing water heaters will be replaced with solar water heaters.
4. All dwelling units' electrical infrastructure will be brought up to code.
5. All handicapped units' electrical infrastructure will be reconstructed to ADA standards.
6. All receptacles, switches, covers will be changed.
7. All existing exhaust fans will be changed.
8. A new exhaust fan will be installed in the kitchen.
9. New smoke detectors will be installed in the bedrooms, hallway, and kitchen.
10. All interior lamps will be changed to LED energy saving lamps.
11. All stair lamps will be changed to LED energy saving lamps.
12. New Internet wiring will be installed to serve the dwelling unit.
13. New seismic walls will be added to each unit to comply with current seismic code.

Green Strategy:

The project has chosen to pursue an ICC-700 2015 NGBS certification under Chapter 11 – Remodeling for Multifamily. The certification process starts with the registration and continues with two submissions during construction to Home Innovation for the quality control and final certification. The project has already been registered. The project has considered all the mandatory requirements and enough efforts to reach the minimum 88 points for a Bronze Level Certification. Following a summary of the efforts of the 2015 NGBS Standard:

LOT DESIGN, PREPARATION AND DEVELOPMENT

- Lot located in urban area with nearby services
- Bicycle racks, renovated landscape and protection to existing trees specified.
- Average density achieved, amongst other efforts.

RESOURCE EFFICIENCY

- Drainage and water resistive materials to avoid moisture
- Roof overhangs and drainages
- Building reuse

ENERGY EFFICIENCY

- Projected 31% energy reduction from existing condition.

WATER EFFICIENCY

- Projected 23% water use reduction from existing condition.

INDOOR ENVIRONMENTAL QUALITY

- No combustion appliances specified in the interiors
- No carpet installed
- Carbon monoxide alarms specified
- Low VOC paints
- Whole dwelling ventilation and kitchen exhaust

The rehabilitation will be performed by Caribe General Constructor Constructors, Inc. for a total cost of \$16,800,000. This is a local non-affiliated entity properly authorized to conduct business in Puerto Rico. This contractor was selected due to their previous experience in rehabilitation of low-income housing properties and their performance in other general construction works as described in their company portfolio and is considered a reliable contractor.

INDEX SHEET

SHEET LAST EDITED ON 10/22/2020

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SCALE :AS SHOWN

DRAWING :

DATE: OCTOBER 22, 2020

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CONSULTANT

CERTIFICACION:

以上各式中, ΔH 为焓变, 单位为 $\text{kJ} \cdot \text{mol}^{-1}$, 表示在 1 mol 反应物完全反应时所放出或吸收的热量。对于放热反应, ΔH 为负值; 对于吸热反应, ΔH 为正值。例如, 在 25℃ 时, 1 mol 氢气与 0.5 mol 氧气完全反应生成 1 mol 水蒸气时所放出的热量为 241.8 kJ, 则此反应的焓变 $\Delta H = -241.8 \text{ kJ} \cdot \text{mol}^{-1}$ 。

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SEAL: _____

Eugenio

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ADVANCED PRIN...
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Date: 2020.11.17

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PROJECT TITLE:
REHAB BRISAS

DE ARROYO

ARROYO P.R.

DRAWING TITLE:

INDEX



AVE. SAN ALFONSO 113.26
LAS LOMAS, RÍO PIEDRAS, P.R. 00921
TELS. (787) 752-7395, 752-1546
FAX (787) 777-8376
email: sales@msmnydc.com

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 SO, CHANDRA SHEKHAR AGGARWAL, CHAIRMAN
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EUGENIO ALEMANY

SEAL:

Eugenio Alemán

PROJECT TITLE	Monthly sales
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ARROYO

DRAWING TITLE:

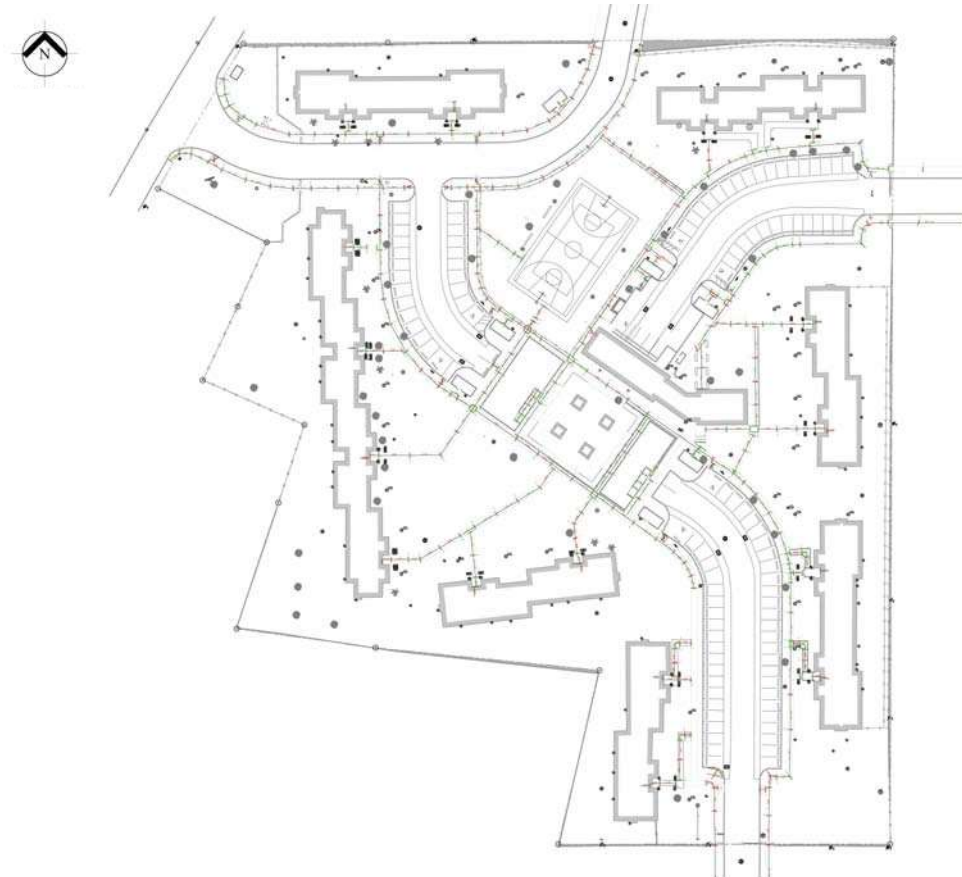
EXISTING SIDEWALK
SLOPES SITE PLAN



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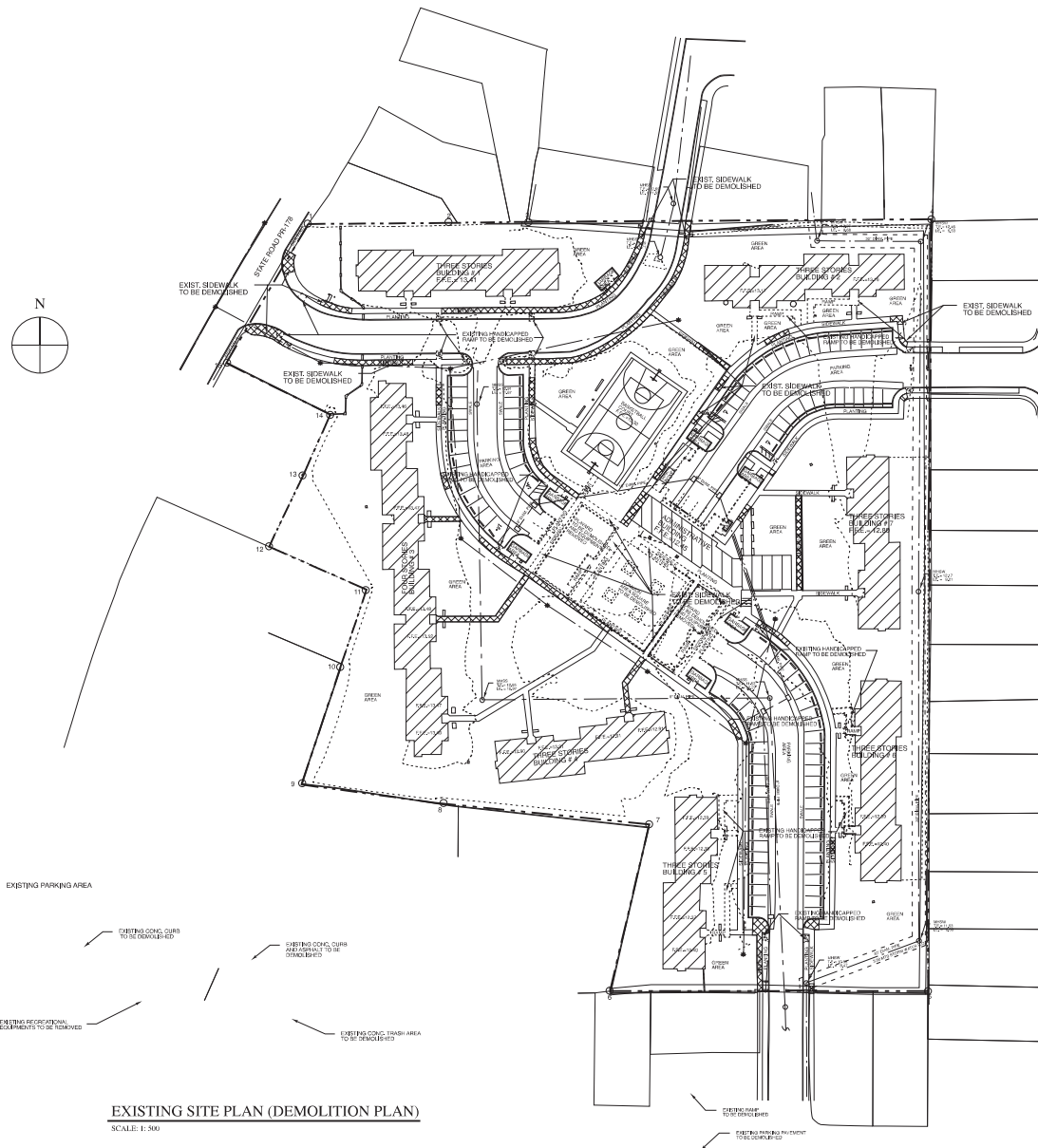
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C-2



EXISTING SIDEWALK SLOPES SITE PLAN

SCALE: 1:500



EXISTING SITE PLAN (DEMOLITION PLAN)
SCALE: 1:300

SCALE: 1/4" = 1'-0"
DRAWN: A.B.
DATE: 11/19/20
TRACED: J.S.
PROJ. NUM.

REVISIONS		
NO.	ITEMS	DATE
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CIVIL CONSULTANT:

STRUCTURAL CONSULTANT:

MECHANICAL CONSULTANT:

ELECTRICAL CONSULTANT:

CERTIFICATION
I, the undersigned, being a duly Licensed Professional Engineer in the State of New York, do hereby certify that I am the author of the design and content of the foregoing drawings and specifications, and that I am a duly Licensed Professional Engineer in the State of New York.
Eugenio Alemany
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DE ARROYO
ARROYO, PR

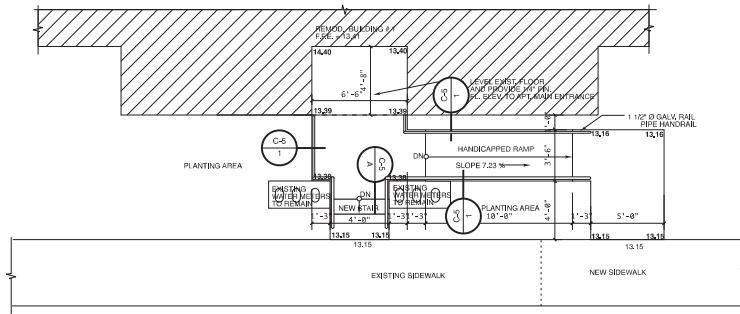
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EXISTING SITE PLAN
(DEMOLITION PLAN)

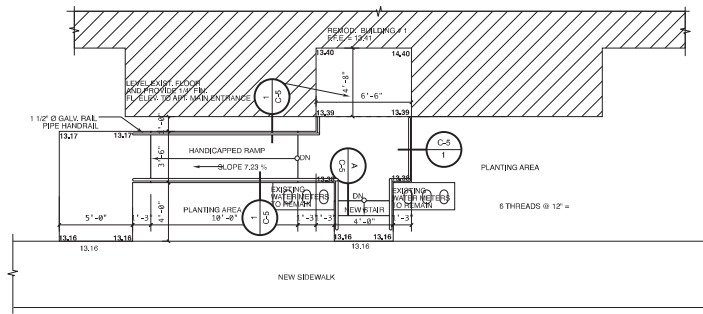


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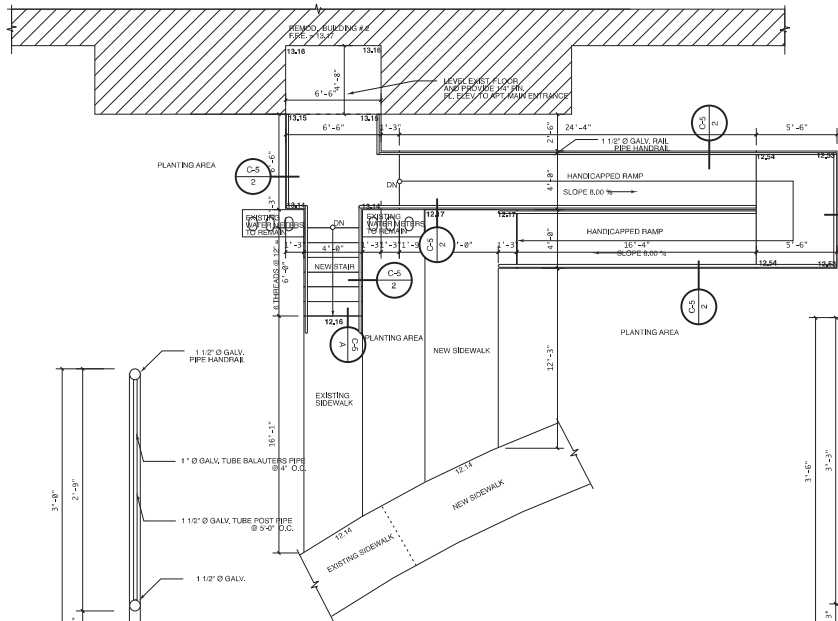
DRAWING NO. C-3 TOTAL OF 03/03



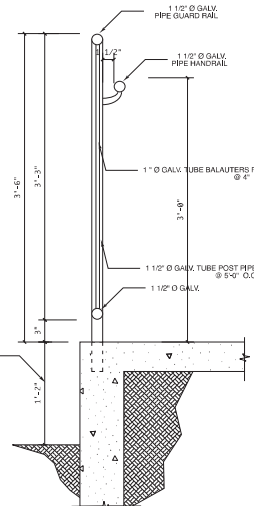
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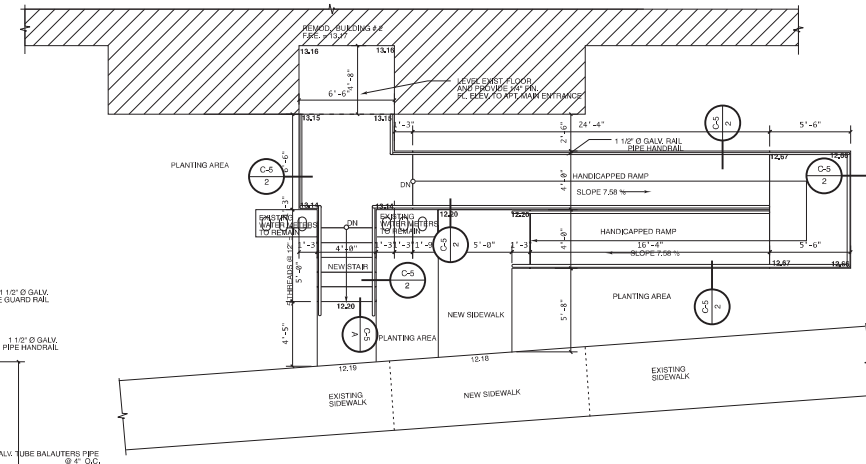
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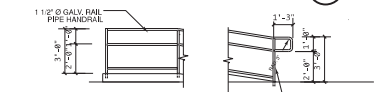
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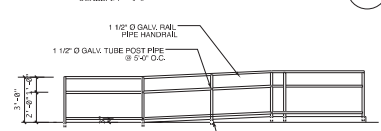
DETAIL
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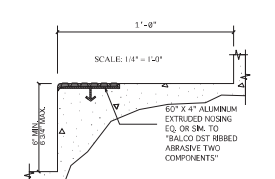
HANDICAPPED RAMP # 4 FLOOR PLAN
SCALE: 1/4" = 1'-0"



HANDICAPPED TYP. ELEV.
SCALE: 1/4" = 1'-0"



HANDICAPPED FRONT TYP. ELEV.
SCALE: 1/4" = 1'-0"



DETAIL
SCALE: 1/4" = 1'-0"

SCALE: 1/320
DRAWN: A.B.
DATE: 11/19/20
TRACED: J.S.
PROJ. NUM.

REVISIONS		
NO.	ITEMS	DATE
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CIVIL CONSULTANT

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Eugenio Arroyo
DN: cn=Eugenio Arroyo, o=ARO, email=eugenio@arroyo.com

PROJECT TITLE:
REHAB BRISAS DE ARROYO, PR

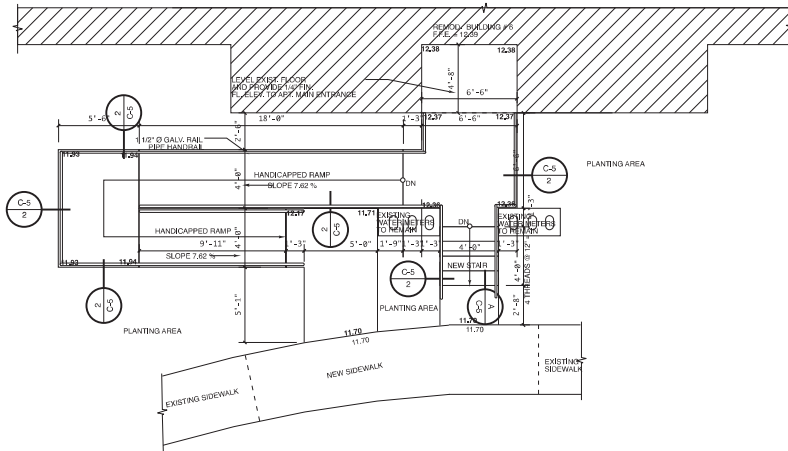
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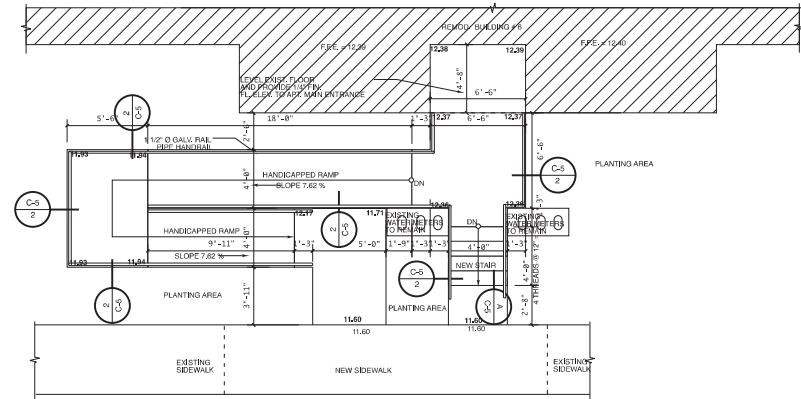


ALL INFORMATION ON THIS DRAWING IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE
DATE: 11/17/2011 BY: J.S.

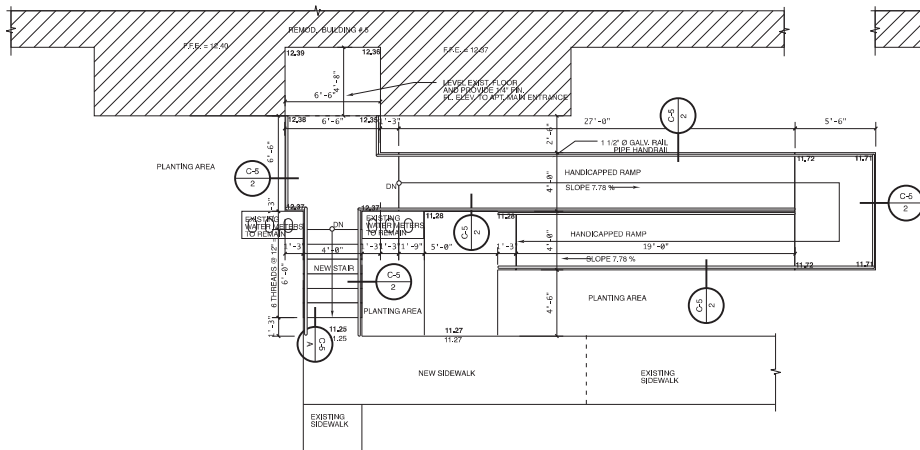
DRAWING NO. **C-5** TOTAL OF SHEETS



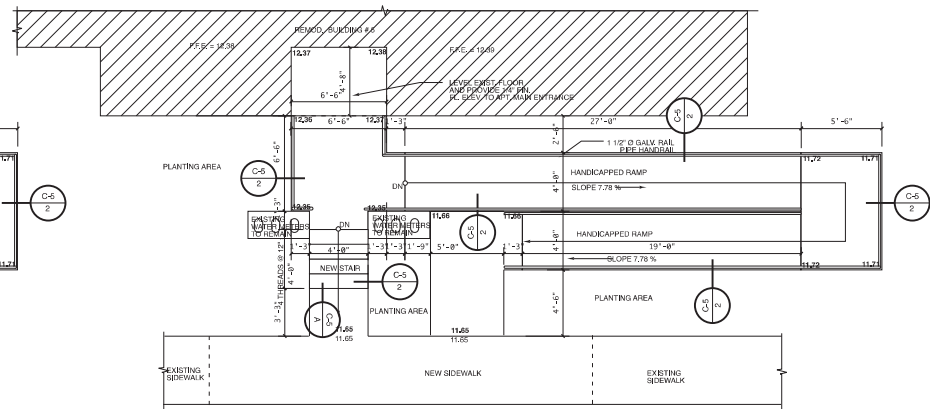
HANDICAPPED RAMP # 5 FLOOR PLAN
SCALE: 1/4" = 1'-0"



HANDICAPPED RAMP # 6 FLOOR PLAN
SCALE: 1/4" = 1'-0"



HANDICAPPED RAMP # 7 FLOOR PLAN
SCALE: 1/4" = 1'-0"



HANDICAPPED RAMP # 8 FLOOR PLAN
SCALE: 1/4" = 1'-0"

SCALE: 1/32"

DRAWN: A.B.

DATE: 11/19/20

TRACED: J.S.

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STRUCTURAL CONSULTANT:

MECHANICAL CONSULTANT:

ELECTRICAL CONSULTANT:

NOTES:
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING:
a. ASCE 7-16
b. IBC 2018
c. ADA 2010
d. FHWA 2003
e. AASHTO 2002
f. AASHTO 2001
g. AASHTO 2000
h. AASHTO 1999
i. AASHTO 1998
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PROJECT TITLE:
**REHAB BRISAS
DE ARROYO
ARROYO, PR**

DRAWING TITLE:

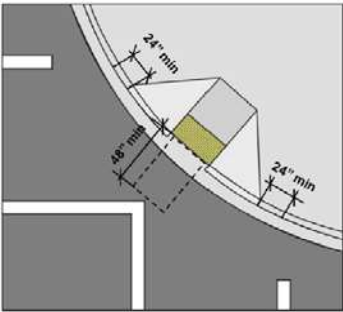
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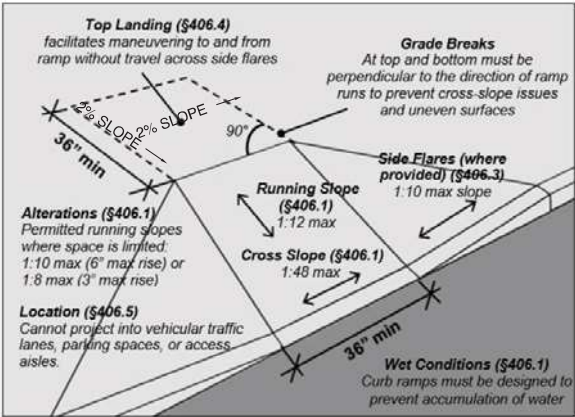
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www.aandtdesign.com

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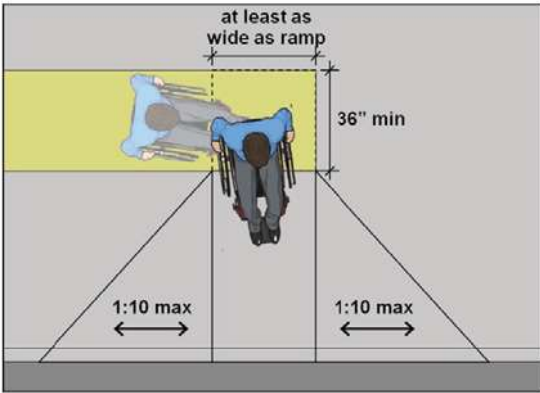
If curb ramps are placed diagonally at an intersection, it is important that clear space 48" long min. is available at the bottom that is outside active vehicle traffic lanes and is located within marked crossings, where provided. A segment of curb at least 24" long beyond flares must be provided on both sides of curb ramps with side flares within marked crossings. This curb segment provides an orienting cue at crossings for people with vision impairments.



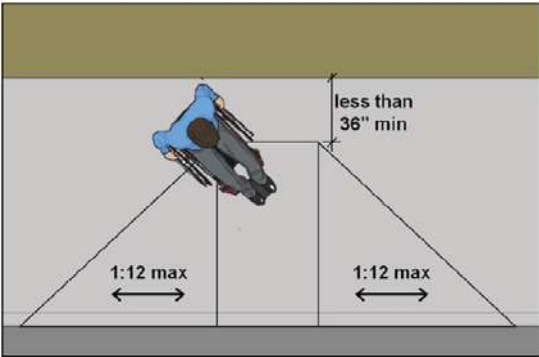
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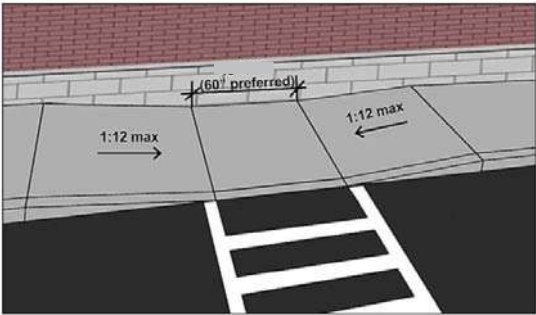
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Curb Ramps at Intersections

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SCALE: 1/8\"/>

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CIVIL CONSULTANT

STRUCTURAL CONSULTANT

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PROJECT TITLE:

REHAB BRISAS
DE ARROYO
ARROYO, PR

DRAWING TITLE:

HANDICAPPED
RAMPS DETAILS



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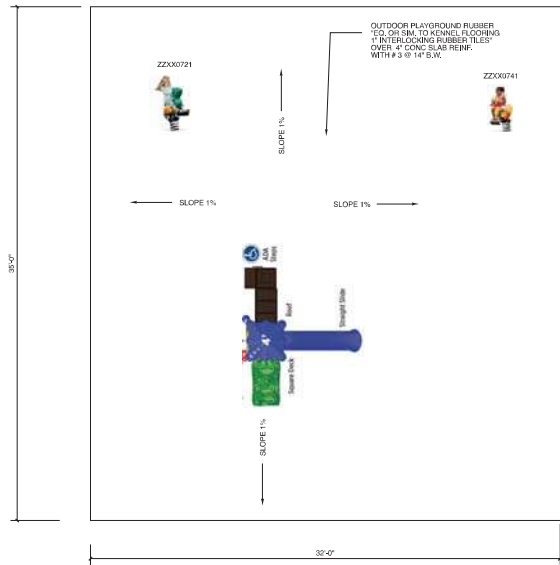
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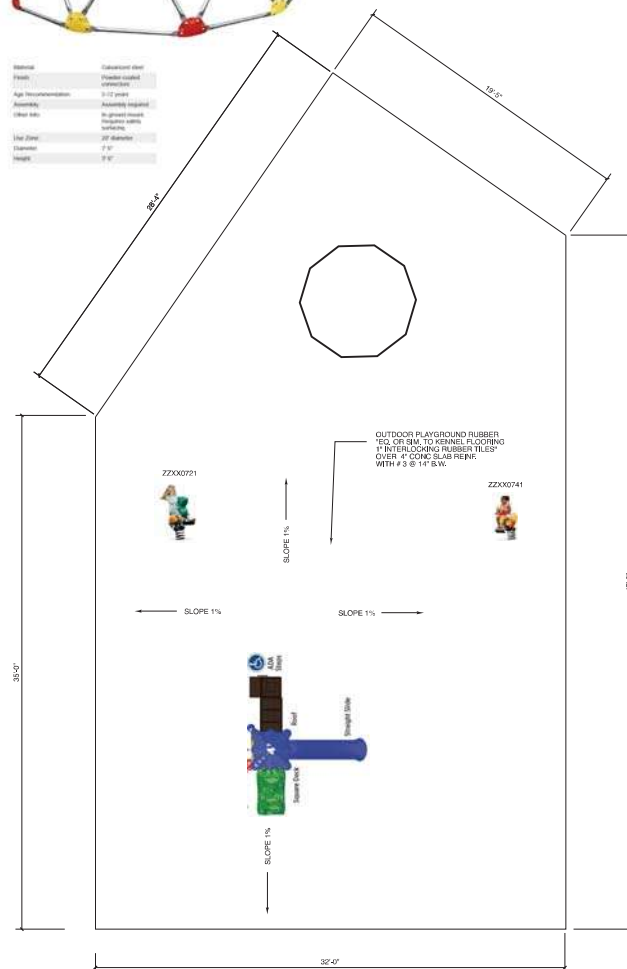


PLAYGROUND EQUIPMENT AND RECREATIONAL EQUIPMENT SITE #1

SCALE 1/4" = 1'-0"



Material	Replacement level
Frame	Timber treated
Age Recommendation	3-12 years
Assembly	Assembly required
Other Info	On-ground assembly Playground safety compliance
Use Zone	27' diameter
Clearance	7' 0"
Height	7' 0"



PLAYGROUND EQUIPMENT AND RECREATIONAL EQUIPMENT SITE #2

SCALE 1/4" = 1'-0"



Product Overview

Details

- STRUCTURE INFO:
 - Age: 3 to 5-12
 - Deck height: 4'
 - Deck: 36" x 36" (arched steel, painted metal)
 - Post: 2" x 4" (arched steel)
 - Frame: 1 1/2" galvanized steel tube, powdercoated
 - Plastic: Heavy duty, reinforced & heavy metal components
 - Activities: 5 events
 - Capacity: 10-15 kids
 - Overall height: 4' 11"

Details

- Weight: 500 lbs
- 4" x 4" x 4" x 4"
- Window: 1/2"
- Base: 1/2" x 1/2" x 1/2"
- Post: 2" x 4"
- Frame: 1 1/2"
- Plastic: Heavy duty, reinforced & heavy metal components
- Activities: 5 events
- Capacity: 10-15 kids
- Overall height: 4' 11"

The most fun you'll find in a tree house structure is the fact that it's a challenge to climb and an exciting if slightly scary. The structure features a unique design with a variety of climbing and sliding options. The structure is made of heavy-duty materials and is designed to be safe and fun. The structure is made of heavy-duty materials and is designed to be safe and fun.

This structure meets ASTM guidelines and is commercially compliant with ASTM & CPSC. A ground safety surface is included with the structure, but an optional safety surface or in-ground assembly kit can be purchased separately.

Perfect for every school, commercially compliant and budget conscious solutions for schools, churches and apartment complexes. Assembly required. Truck delivery.

SET	1 SET (1 SET)
Assembly	Ready to Assemble
Weight	500 lbs
Material	Galvanized Steel
Dimensions	4' x 4' x 4'
Age Recommendation	3-12 years
Assembly	Assembly required
Other Info	On-ground assembly Playground safety compliance
Use Zone	27' diameter
Clearance	7' 0"
Height	7' 0"

SCALE:

DRAWN: A.B.

DATE: 11/16/20

TRACED: J.S.

PROJ. NUM.

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STRUCTURAL CONSULTANT:

MECHANICAL CONSULTANT:

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Professional Engineer
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State of California

PROJECT TITLE:

REHAB BRISAS
DE ARROYO
ARROYO, PR

DRAWING TITLE:

PLAYGROUND EQUIPMENT
AND RECREATIONAL
EQUIPMENT



AV. SAN ALONSO (CALLE)
LA LOMA, RD. P.R. 00946
TEL: 787-250-1000
WWW.AMTDESIGNSTUDIO.COM

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KEY MAP

INDEX SHEET

SHEET LAST EDITED ON 10/22/2020

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PROJECT TITLE:
REHAB. BRISAS
DE ARROYO
ARROYO P.R.
DRAWING TITLE:

INDEX



AVE. SAN ALFONSO U3-26
LAS LOMAS, RÍO PIEDRAS, P.R. 00921
TELS.(787)792-7395, 792-1546
FAX(787)277-0376
email: eadlmany@coqui.net

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ANGLE	F.O	FACE OF	O.A	OVERALL
CHANNEL	F.O.C	FACE OF CONCRETE	O.S.A	OVERSIDE SUPPLY AIR
ENTER LINE	F.O.F	FACE OF FINISH	PROJ	PROJECTION
DIAMETER	F.O.M	FACE OF MASONRY	PROJ	POLY VINYL CHLORIDE
PLATE	F.O.S	FACE OF STUDS	PAR	PARALLEL
PERPENDICULAR	F.H	FLAT HEAD/FIRE HYDRANT	PART	PARTIAL
ABV ABOVE	FIN	FINISH, FINISHED	PERF	PERFORATE, PERFORATED
A.F.F ABOVE FINISHED FLOOR	FINSH	FINISH FLOOR ELEVATION	P.LAM	PLASTIC LAMINATE
A.S.C ABOVE SUSPENDED CEILING	F.F.L	FINISH FLOOR LINE	PL	PLATE
ASTM AMERICAN SOCIETY FOR TESTING AND MATERIALS	F.A	FIRE ALARM	PLUM	PLUMBING
	F.F	FIRE-RATED	POINT	POINT
ACC ACCESS	F.E.C	FIRE EXTINGUISHER CABINET	PROP	PROPERTY
A.P ACCESS PANEL	F.H.C	FIRE HOSE CABINET	P.S	POINT OF SWITCH
A.C ACUSTIC, ACUSTICAL	F.H.V	FIRE HOSE VALVE	P.L	PROPERTY LINE
ADD'L ADDITIONAL	FLG	FLASHING	PC	PRECAST
ADH ADHESIVE	F.C	FLEXIBLE CONNECTION	PLAT	PLATFORM
ADJ ADJUSTABLE	FLR, FL	FLOOR, FLOORING	QT	QUARRY TILE
AGG AGGREGATE	FL	FLOOR CLEANOUT	R	R
ALT ALTERNATE	F.D	FLOOR DRAIN	R.T	RIGHT
AL ALUM	FLUOR	FLUORESCENT	RAD, R	RADIUS
AUX AUXILIARY	F.A.I	FRESH AIR INTAKE	REF	REFERENCE
ANCH ANCHOR BOLT	F.S	FLOOR SLIP	REFL	REFLECT, REFLECTED, REFLECTIVE
ANCH ANCHOR	F.B.O	FURNISHED BY OTHERS	REFL	REFLECTOR
ANOD ANODIZED			RES	RESILIENT
ARCH ARCHITECT, ARCHITECTURAL	GALV	GALVANIZED	REIN	REINFORCING
C.EE CEMENT/ENGINEER	G.S.M	GALVANIZED SHEET METAL	REV	REVISION, REVISED, REVERSE
ADR AREA DRAIN	G	GLASS, GLAZING	R.O.W	RIGHT-OF-WAY
AUTO AUTOMATIC	G.B	GRAB BAR	R	RISER, RADIUS
AUX AUXILIARY	GRN	GRANITE	R.D	ROOF DRAIN
APPROX APPROXIMATE	GYP	GYPSPUM	RFG	ROOFING
	GEN	GENERAL	RM	ROOM
B.P BACK PLASTER/PLASTERED	G.R.C	GLASS FIBER	R.O	ROUGH OPENING
BEAM		REINFORCED CONCRETE	R.B	RUBBER BASE
BEL BELOW			REQ'D	REQUIRED
BTW BETWEEN	HH	HANDHOLE	RD	ROAD
BVL BEVELED	HDW	HARDWARE		
BLKG BOARD	HDR	HEADER		
B.R.S BLAST RELIEF SHAFT	H.D	HEAVY DUTY		
B.S BOTH SIDES	HT	HEIGHT		
BOT, BTM BOTTOM	HX	HEXAGONAL	SECT	SECTION
BRZ BRONZE	H.M	HOLLOW METAL	SHT	SHEET
BLDG BUILDING	HORIZ	HORIZONTAL	SM	SIMILAR
B.M BENCHMARK	H.B	HOSE BIBB	S	SOUTH
BLVD, BL BOULEVARD	H.W.P	HIGH WORKING POINT	SPEC	SPECIFICATION, SPECIFICATIONS
	H.P	HIGH POINT	SQ	SQUARE
	H.D.P.M	HIGH DENSITY POLYETHYLENE MEMBRANE	STD	STANDARD
CAB CABINET			STA	STATION (ALIGNMENT)
CAB CAST IRON			STL	STEEL
C.I.P CAST-IN-PLACE (CONCRETE)	I.D	INSIDE DIAMETER	STRUCT	STRUCTURAL
C.B CATCH BASIN	INSUL	INSULATE, INSULATED, INSULATION	SYM	SYMMETRY, SYMMETRICAL
CLG CASTING			S.S	STAINLESS STEEL
CHAM CHAMFER	INT	INTERIOR	SCHED	SCHEDULE
CLR CLEAR, CLEARANCE	INV	INVERT	SPKR	SPEAKER
C.C.T.V CLOSED CIRCUIT T.V. CAMERA	INCL	INCLUDING		
COL COLUMN				
COMPO COMPOSITION	J.C	JANITOR'S CLOSET	T.D.D	TELECOMMUNICATION DEVICE
CON CONCRETE	JT	JOINT		FOR THE DEAF
C.M.U CONCRETE MASONRY UNIT	J.F	JOINT FILLER	TEL	TELEPHONE
C.O CONVENIENCE OUTLET,	K	KILOGRAM	T	TELEVISION
CLEAN OUT	KPa	KILO PASCAL	T.V.M	TICKET VENDING MACHINE
CONSTR CONSTRUCTION	K.O.P	KNOCKOUT PANEL	THK	THICK, THICKNESS
CONT CONTINUE, CONTINUOUS			T.O.S	TOP OF STEEL
C.J CONTROL JUNCTION	LVL	LEVEL	T.O.C	TOP OF CONCRETE CURB
CPR COPPER	LTG	LIGHTING	T.O.W	TOP OF WALL
C.G CORNER GUARD	LAM	LAMINATE, LAMINATED	TREAD	TREAD
C.L CHAIN LINK	LAV	LAVATORY	TYP	TYPICAL
C.R CARD READER	LT	LIGHT	T.O.P	TOP OF PARAPET
CEM CEMENT	LW	LIGHTWEIGHT	T.O.A	TOP OF ARCH
CER CERAMIC	L.P	LOW POINT		& COMMUNICATIONS
	L.W.P	LOWER WORKING POINT	T.D	TRENCH DRAIN
	L	LENGTH		
	LN	LINEAR		
	LONGIT	LONGITUDINAL	UR	URINAL
DEG OR DEGREE			U.N.O	UNLESS NOTED OTHERWISE
DET DETAIL	m	METERS	U.W.P	UNDER WORKING POINT
DIAG DIAGONAL	m ²	SQUARE METERS		
DIA DIAMETER	mm	MILLIMETERS	V.C.T	VINYL COMPOSITION TILE
DM DIMENSION	MH	MANHOLE	VENT	VENTILATION
DV DIVISION	MFR	MANUFACTURER	VERT	VERTICAL
DR DOOR	M.O	MASONRY OPENING	VEST	VESTIBULE
DTA DOVETAIL ANCHOR	MACH	MACHINE	V.M.S	VARIABLE MESSAGE SIGN
DTS DOVETAIL ANCHOR SLOT	MAX	MAXIMUM		
DWG DRAWING	MECH	MECHANICAL	W.S.P	WET STAND PIPE
D.F DRINKING FOUNTAIN	MED	MEDIUM	W.T	WATER TABLE
DN DOWN	MTL, MET	METAL	WP	WATERPROOFING
D.I DRAIN INLET	MN	MINIMUM	W.W.M	WELDED W.W.M
	MIR	MIRROR	W.W.F	WELDED WIRE FABRIC
E EACH	MISC	MISCELLANEOUS	W	WEST, WIDTH
E EAST	MTD	MOUNT, MOUNTED	W/O	WITHOUT
ELECT ELECTOR	MTG	MOUNTING	WOOD	WOOD
ELECT ELECTRIC, ELECTRICAL	MEZZ	MEZZANINE	W.P	WORKING POINT
EL ELEVATION	N.R.C	NOISE REDUCTION COEFFICIENT	W/	WITH
ELEV ELEVATOR	NOM	NOMINAL		
EMERG EMERGENCY	N/R	NON-RATED		
E.M.P EMERGENCY MANAGEMENT PANEL	N/A	NOT APPLICABLE		
	N, #	NUMBER		
EQ EQUAL	N	NORTH		
EQUIP EQUIPMENT	N.I.C	NOT IN CONTRACT		
ESC ESCALATOR	N.T.S	NOT TO SCALE		
E TEL EMERGENCY TELEPHONE				

	TILE		EXTERIOR BLDG. ELEVATION MARK
	PLYWOOD		DETAIL MARK
	METAL		DETAIL MARK
	GLAZING		DETAIL MARK
	STAINLESS STEEL OR ALUMINUM		DETAIL MARK
	STEEL		DETAIL MARK
	EARTH		DETAIL MARK
	CONCRETE		DETAIL MARK
	REINFORCED CONCRETE WALL		DETAIL MARK
	CONCRETE BLOCK WALL		DETAIL MARK
	GRANITE STONE		DETAIL MARK
	INSULATION PANEL		DETAIL MARK
	MARBLE		DETAIL MARK
	COMPACTED FILL		DETAIL MARK
	EXISTING STRUCTURE		DETAIL MARK
	GYPSUM WALL BOARD (SEE DESCRIPTION NOTES FOR CLASSIFICATION)		DETAIL MARK
	GRAPHIC SCALE		INTERIOR ELEVATION MARK
	FIRE HOSE CABINET		LEVEL MARK
	ROOM IDENTIFICATION		NEW SPOT ELEVATION (FEET OR METERS)
	AXIS OR STRUCTURAL GRID		EXISTING SPOT ELEVATION (FEET OR METERS)
	DOOR IDENTIFICATION		NORTH SYMBOL
	WINDOW IDENTIFICATION		PROJECT LIMIT
	BUILDING SECTION MARK		FINISH LIMIT
	WALL SECTION		REVISION MARK
	WALL SECTION		CEILING HEIGHT ABOVE FIN. FLOOR
	WALL SECTION		WALL TYPE IDENTIFICATION

1. REFER TO PROJECT SPECIFICATIONS FOR GENERAL CONTRACT REQUIREMENTS MATERIALS, WORKMANSHIP AND SHOP DRAWINGS.
2. ALL DIMENSIONS OTHER THAN PURELY ARCHITECTURAL DIMENSIONS SHOWN ON ARCHITECTURAL DRAWINGS SHALL BE FIELD COORDINATED BY THE CONTRACTOR WITH ALL OTHER TRADES. DRAWINGS, AND ANY INCONSISTENCIES REPORTED TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
3. CONTRACTOR SHALL VERIFY ALL PROPOSED AND EXISTING DIMENSIONS AND ELEVATIONS IN THE FIELD.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD. NOTIFY THE ARCHITECT IMMEDIATELY AND BEFORE PROCEEDING WITH RELEVANT ASPECT OF THE WORK OF ANY FIELD CONDITION THAT IS NOT CONSISTENT WITH THE DRAWINGS OR THAT WILL IMPAIR LAYOUTS OR ATTACHMENTS OF FINISHES.
4. DO NOT SCALE DRAWINGS. USE INDICATED OR CALCULATED DIMENSIONS AND ELEVATIONS IN THE FIELD. NOTIFY THE ARCHITECT IMMEDIATELY AND BEFORE PROCEEDING WITH RELEVANT ASPECT OF THE WORK OF ANY FIELD CONDITIONS THAT ARE NOT CONSISTENT WITH, OR MISSING FROM, THE DRAWINGS OR THAT WILL IMPAIR LAYOUT.
5. DIMENSIONING FORMAT FOR THE ARCHITECTURAL DRAWINGS IS:
 - A. DIMENSIONS FOR FIELDS AND SPACES BETWEEN ELEMENTS ARE TO THE FACE OF THE ELEMENT UNLESS OTHERWISE NOTED.
 - B. DIMENSIONS FOR MASONRY ARE NOMINAL UNLESS OTHERWISE INDICATED.
 - C. CRITICAL CLEAR DIMENSIONS, FINISH OPENING DIMENSIONS REQUIRED ARE INDICATED AND ARE TO FINISH FACE OF ELEMENT.
6. REFER TO STRUCTURAL DRAWINGS FOR DIMENSIONS AND LAYOUTS OF STRUCTURAL CONCRETE.
7. SEE STRUCTURAL DRAWINGS FOR STRUCTURAL STEEL SIZES, ALL CONCRETE REINFORCEMENT, UNIT MASONRY REINFORCEMENT, STEEL LINTEL SIZES, RELYING ANGLE SIZES, AND REINFORCED LINED JOINTS. WORK AND ALL OTHER REQUIREMENTS FOR LOAD CARRYING MEMBERS. STRUCTURAL DRAWINGS SHALL GOVERN FOR LOAD CARRYING MEMBERS.
8. REFER ALSO TO LANDSCAPING, STRUCTURAL, PLUMBING, FIRE PROTECTION, MECHANICAL AND ELECTRICAL DRAWINGS AND RELATED SHOP DRAWINGS FOR LOCATION AND DIMENSIONS OF CHASES, INSERTS, OPENING, SLEEVES, DEPRESSIONS AND ATTACHMENT REQUIREMENTS.
9. REFER TO STRUCTURAL DRAWINGS FOR PENETRATIONS OF STRUCTURAL ELEMENTS. REFER ALSO TO MECHANICAL, ELECTRICAL AND ELECTRICAL PROTECTION DRAWINGS FOR SLEEVE, PENETRATIONS, AND EMBEDMENTS REQUIRED FOR THESE SYSTEMS. THE CONTRACTOR IS TO COORDINATE ALL EMBEDMENTS AND PENETRATIONS.
10. PROVIDE ALL ACCESS PANELS AS REQUIRED BY APPLICABLE CODES AND REQUIREMENTS FOR PLUMBING EQUIPMENT. WHETHER OR NOT SHOWN ON DRAWINGS, ALL ACCESS PANELS SHALL BE FLUSH WITH ADJACENT FINISH SURFACES.
11. SEE MECHANICAL, PLUMBING, FIRE PROTECTION, AND ELECTRICAL DRAWINGS FOR EQUIPMENT REQUIRING HOUSEKEEPING PADS. SEE STRUCTURAL DRAWINGS FOR TYPICAL HOUSEKEEPING PAD DETAILS AND REINFORCEMENT.
12. COORDINATE PLACEMENT OF ALL CEILING ELEMENTS WITH MECHANICAL, ELECTRICAL, AND INSTALLER.
13. CONTRACTOR SHALL COORDINATE SIZE AND LOCATION OF ALL PIPING AND WALL OPENINGS IN WALLS. NOT LIMITED TO OPENINGS IN ELECTRICAL CLOSETS, CONTROL ROOMS, MACHINE ROOMS, ETC., PER EQUIPMENT MANUFACTURER RECOMMENDATIONS.
14. BACK-CHECK REFERENCES ARE NOT INTENDED TO GIVE GUARANTEE OF LOCATION IN WHICH A PARTICULAR DETAIL OCCURS, BUT ARE TO AID CONTRACTOR IN FINDING SAMPLE LOCATION(S) IN WHICH A PARTICULAR DETAIL OCCURS.
15. WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT THE ARCHITECT BEFORE PROCEEDING.
16. DETAILED DRAWINGS AND LARGER SCALE DRAWINGS TAKE PRECEDENCE OVER SMALL SCALE DRAWINGS.
17. ALL EXPOSED CORNERS AT CAST IN PLACE CONCRETE ARE TO RECEIVE CONCRETE 20MM CHAMFER. CHAMFER TO BE WHERE CMTU OR OTHER ADJACENT MATERIAL ABUTS CORNER.
18. ALL PENETRATIONS THRU RATED WALLS OR FLOORS SHALL BE PROTECTED AND/OR SEALED WITH MATERIAL OF THE SAME QUALITY AS THE PENETRATED MATERIAL.
19. HANDRAILS AND GRAPHIC BANDS, HORIZONTAL CONCRETE JOINTS, CEILINGING AND COT ED ENCLOSURES SHALL RUN PARALLEL TO THE FLOOR. ALL VERTICAL JOINTS AND JUNCTIONS IN THE CEILINGING, CONCRETE AND C.M.U. SHALL BE TRUE VERTICAL.
20. PROVIDE ISOLATION BETWEEN DISJALM MATERIALS (TYPICAL).
21. ALL STEEL ITEMS SHALL BE GALV. DOUBLE DIP (U.N.O.).
22. ALL WOOD ITEMS SHALL BE FIRE RETARDANT TREATED (FLAME SPREAD: 25 OR LESS PER A.S.T.M. E-84).
23. ANCHORS INDICATED BY MFR. INSTALLATION SHALL BE ESTABLISHED TO THE MATERIAL AND LOAD CAPACITY.
24. SHIM MEMBERS AT COTED SURFACES AS REQUIRED.
25. PROVIDE SLOTTED HOLES IN METAL MEMBERS FOR ADJUSTMENT.
26. ALL EXPOSED AREAS SUBJECT TO FOOT TRAFFIC SHALL BE SURFACE TREATED, OR COAT IN 10% MIN. WET MIX & DRY (ASTM C-1028) OR AS PER DESIGN TYPICAL.
27. C.M.U. OPENINGS AND WALLS MUST BE LAD PLUMB AND TRUE.
28. CONDUITS SHALL BE EMBEDDED.

11/11/2016



AVE. SAN ALFONSO U3-26
LAS LOMAS, RÍO PIEDRAS, P.R. 00981
TELS.(787)792-7395, 792-1546
FAX(787)277-0376
email:reslemanv@coqui.net

DRAWING	TOTAL
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100

G-002 | ☒

— EXISTING CONC. WALL TO BE REMIAN
 - - - EXISTING CONC. WALL TO BE DEMOLISHED

EXISTING & DEMOLITION LEGEND:

- EXISTING DOOR TO BE REMOVED
- EXISTING WINDOW TO BE REMOVED
- EXISTING KITCHEN CABINET TO BE REMOVED
- EXISTING CLOSET DOOR TO BE REMOVED
- EXISTING PLUMBING FIXTURE WINDOW TO BE REMOVED
- EXISTING CLOTHS LINES TO BE REMOVED
- EXISTING WATER HEADER TO BE REMOVED
- EXISTING APPLIANCES TO BE REMOVED
- EXISTING CLOSETS SHELVES TO BE REMOVED
- EXISTING BATHTUB TO BE REMOVED
- EXISTING TOILET TO BE REMOVED
- EXISTING CONC. WALL TO BE DEMOLISHED
- EXISTING TERRAZO FLOOR TO BE REMOVED
- EXISTING ORNAMENTAL CONC.BLOCK TO BE DEMOLISHES

SCALE :AS SHOWN

DRAWING :

DATE: OCTOBER 22,2020

REVISED:

APROV:

FILE:

PROJECT

NUMBER:

REVISIONS

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CIVIL
CONSULTANT

STRUCTURAL
CONSULTANT

MECHANICAL
CONSULTANT

ELECTRICAL
CONSULTANT

CERTIFICACION:
 "EL DISEÑO REPRESENTADO EN ESTOS DISEÑOS DEBE SER EL PROYECTO DE DISEÑO QUE SE HA DE EJECUTAR, SIN MODIFICACIONES, Y LAS MODIFICACIONES DEBE SER HECHAS POR EL DISEÑADOR, DE LO CONTRARIO, EL DISEÑADOR NO SE RESPONSABILIZA POR LOS DAÑOS QUE PUEDAN OCURRIR POR EL USO DE ESTOS DISEÑOS SIN LA ADECUADA VERIFICACION Y CONTROL DE CALIDAD POR PARTE DEL CLIENTE. EL DISEÑADOR NO SE RESPONSABILIZA POR LOS DAÑOS QUE PUEDAN OCURRIR POR EL USO DE ESTOS DISEÑOS SIN LA ADECUADA VERIFICACION Y CONTROL DE CALIDAD POR PARTE DEL CLIENTE. EL DISEÑADOR NO SE RESPONSABILIZA POR LOS DAÑOS QUE PUEDAN OCURRIR POR EL USO DE ESTOS DISEÑOS SIN LA ADECUADA VERIFICACION Y CONTROL DE CALIDAD POR PARTE DEL CLIENTE."

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PROJECT TITLE:
 REHAB. BRISAS
 DE ARROYO
 ARROYO P.R.
 DRAWING TITLE:

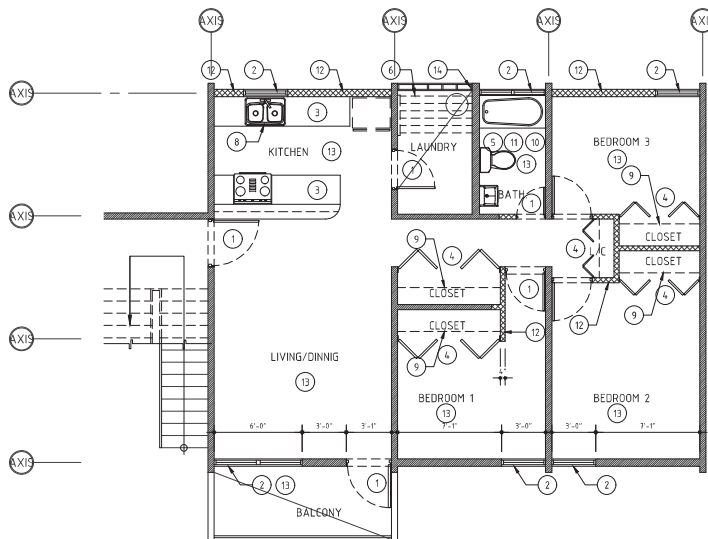
EXISTING & DEMOLITION (3 BEDROOM
 UNIT)



A&T Design Inc.
 AVE. SAN ALFONSO 132-26
 LAS LOMAS, RIO PIEDRAS, P.R. 00921
 TEL: (787) 793-7395, 793-4546
 FAX: (787) 793-7395
 email: ealemany@coqui.net

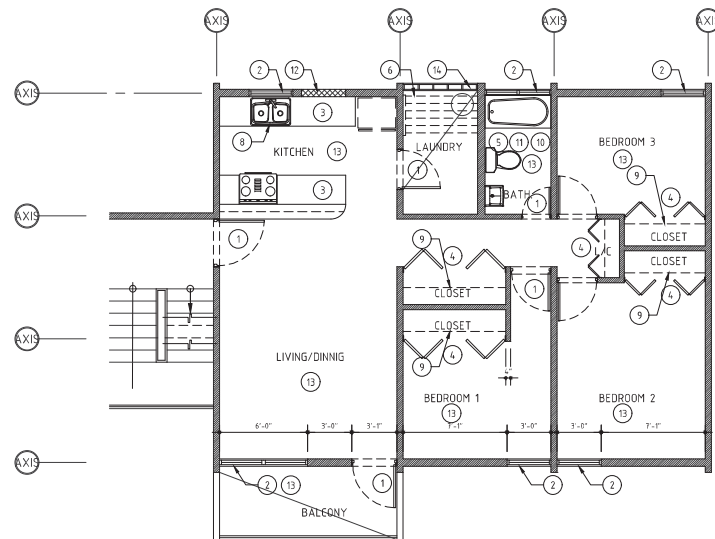
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KEY MAP



EXISTING & DEMOLITION GROUND FLOOR PLAN
 [TYP. 3 BEDROOM UNIT]

SCALE 1/4"=1'-0"



EXISTING & DEMOLITION SECOND, THIRD & FOURTH FLOOR PLAN
 [TYP. 3 BEDROOM UNIT]

SCALE 1/4"=1'-0"



 EXISTING CONC. WALL TO BE REMAIN
 EXISTING CONC. WALL TO BE DEMOLISHED

EXISTING & DEMOLITION LEGEND:

- ① EXISTING DOOR TO BE REMOVED
- ② EXISTING WINDOW TO BE REMOVED
- ③ EXISTING KITCHEN CABINET TO BE REMOVED
- ④ EXISTING CLOSET DOOR TO BE REMOVED
- ⑤ EXISTING PLUMBING FIXTURE WINDOW TO BE REMOVED
- ⑥ EXISTING CLOTHS LINES TO BE REMOVED
- ⑦ EXISTING WATER HEADER TO BE REMOVED
- ⑧ EXISTING APPLIANCES TO BE REMOVED
- ⑨ EXISTING CLOSETS SHELVES TO BE REMOVED
- ⑩ EXISTING BATHTUB TO BE REMOVED
- ⑪ EXISTING TOILET TO BE REMOVED
- ⑫ EXISTING CONC. WALL TO BE DEMOLISHED
- ⑬ EXISTING TERRAZZO FLOOR TO BE REMOVED
- ⑭ EXISTING ORNAMENTAL CONC.BLOCK TO BE DEMOLISHES

SCALE :AS SHOWN

DRAWING :

DATE: OCTOBER 22, 2020

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FILE: _____

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PROJECT TITLE:
REHAB. BRISAS
DE ARROYO
ARROYO P.R

DRAWING TITLE:

EXISTING & DEMOLITION (2 BEDROOM UNIT)

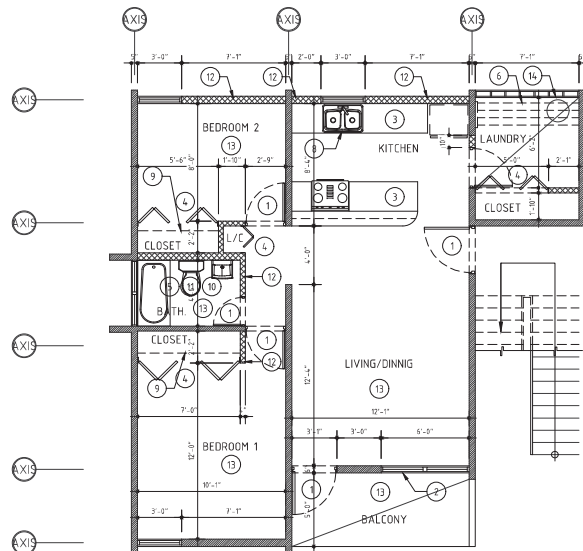


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email:eslemayn@coquil.net

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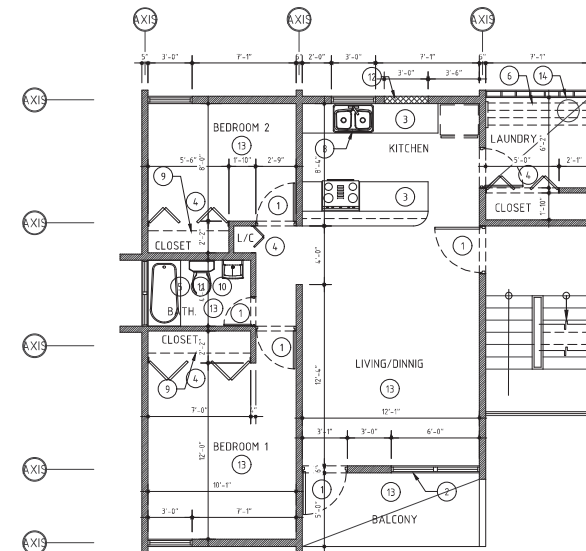
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EXISTING & DEMOLITION GROUND FLOOR PLAN
[TYP. 2 BEDROOM UNIT]

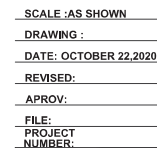
SCALE 1/4"=1'-0"



EXISTING & DEMOLITION SECOND, THIRD & FOURTH FLOOR PLAN
[TYP. 2 BEDROOM UNIT]

SCALE 1/4"=1'-0"





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CONSULTANT**

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CERTIFICACIÓN:

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 Alemany,cn=00970
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 12:17:11 -0400

PROJECT TITLE:
REHAB. BRISAS
DE ARROYO
ARROYO P.R

DRAWING TITLE:

BUILDING (A) SECTIONS



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TELS. (787) 792-7395, 792-1546
FAX (787) 277-0376
email: ealemany@coqui.net

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ELECTRICAL
CONSULTANT

PROFESIONAL, QUE SUSCRIBA ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS, TAMBIÉN DECLARA QUE ENTENDE QUE, A LA VEZ QUE SE REALIZA EL DISEÑO PROFESIONAL, DICHS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES AFECTIVAS DEL REGLAMENTO CONJUNTO Y CON LAS DISPOSICIONES AFECTIVAS DE LOS REGLAMENTOS Y CÓDIGOS DE LOS PROFESIONALES, ASÍ COMO REGLAMENTARIOS Y O COMPROMISOS PÚBLICOS DE LA PROFESIÓN, RECONOCIENDO QUE CUALQUIER DECLARACIÓN FALSA DE LA VERACIDAD DE LOS HECHOS QUE SE HAYA PRODUCIDO SIN CONCIENCIA POR NEGLIGENCIA YA SEA POR MAL, MIS AGENTES O EMPLEADOS, O POR OTRAS PERSONAS CON QUI CONCORDANTE, ME HACEN RESPONSABLE CUALQUIER ACCIÓN JUDICIAL Y DISCIPLINARIA POR LA OPCIÓN Y OTROS EFECTOS LEGALES, INCLUYENDO, PERO SIN LIMITARSE, LA DETERMINACIÓN DE LA PARTICIPACIÓN EN LOS PROCEDIMIENTOS DE CERTIFICACIÓN PROFESIONAL, EN LA OPCIÓN.

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FINISHES SCHEDULES



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		WINDOW SCHEDULE																				
AREA		FLOOR				BASE				WALL				CEILING								
		EXISTING TERRAZZO TO REMAIN	NEW TERRAZZO SIMILAT TO EXISTING	EXISTING SMOOTH CEMENT TO REMAIN				EXISTING TERRAZZO TO REMAIN	NEW TERRAZZO SIMILAT TO EXISTING			EXIST. SMOOTH CEMENT PLASTER TO REMAIN	1/2" SMOOTH CEMENT PLASTER	GLAZED TILES		EXIST. SMOOTH CEMENT PLASTER TO REMAIN	NEW 1/2" SMOOTH CEMENT PLASTER TO REMAIN					
1	REMODELED STAIR		●																			
2	REMODELED BALCONY	●						●				●					●					
3	REMODELED LIVING & DINING	●						●				●					●					
4	REMODELED LAUNDRY & KITCHEN	●	●					●	●			●	●				●	●				
5	REMODELED HALLWAY	●						●				●					●					
6	REMODELED BEDROOM 1, 2, 3 & 4	●	●					●	●			●	●				●	●				
7	REMODELED BATHROOM												●				●					
8	REMODELED CLOSETS	●						●				●					●					



#3

GOBIERNO DE PUERTO RICO
Oficina Estatal de Conservación Histórica

Wednesday, March 3, 2021

Lauren B. Poche, M.A.

Architectural Historian, Historic Preservation Manager
Horne
10000 Perkins Rowe Suite 610 Bldg. G
Baton Rouge, LA 70810

SHPO: 11-19-20-03 STAR ARROYO LLC, MORSE ST.. ARROYO, PUERTO RICO

Dear Ms. Poche,

Our Office has received and reviewed the above referenced project in accordance with 54 USC 306108 (commonly known as Section 106 of the *National Historic Preservation Act, as amended*) and 36 CFR Part 800: *Protection of Historic Properties* from the Advisory Council on Historic Preservation. The State Historic Preservation Officer (SHPO) is to advise and assist federal agencies and other responsible entities when identifying historic properties, assessing effects upon them, and considering alternatives to avoid or reduce the project's effects.

Our records support your finding of **no historic properties affected** within the project's area of potential effects.

Please note that should the Agency discover other historic properties at any point during project implementation, you should notify the SHPO immediately. If you have any questions concerning our comments, do not hesitate to contact our Office.

Sincerely,

Carlos A. Rubio-Cancela
State Historic Preservation Officer

CARC/GMO/MB/MDT



#6

NOISE SURVEY REPORT

AT
Brisas de Arroyo
Arroyo, Puerto Rico



Physical Address:

Villa Blanca Industrial Park
Plaza Bairoa Suite 215
Caguas, P.R. 00725
www.sharetechgroup.com

June 3, 2021

Rafael Ortiz, CPA
Star Management, Corp.
PMB 140
53 Esmeralda Avenue
Guaynabo, P. R. 00969-4429
Email: rortiz@starmanagement.org
Phone: 787-790-0525

RE: Environmental Noise Survey for Brisas de Arroyo at Arroyo, Puerto Rico

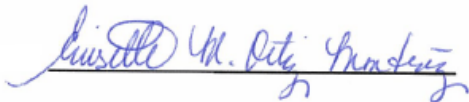
Dear Mr. Ortiz,

Enclosed please find professional consulting services report for subject environmental noise survey conducted at the location of Brisas de Arroyo in Arroyo, P.R., on May 28, 2021.

We appreciate the opportunity to service you and look forward to continuing supporting Star Management, Corp. in the near future.

If you have any questions, do not hesitate to contact us.

Sincerely,



Enisette Ortiz
EHS Coordinator
ShareTech Group

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EXECUTIVE SUMMARY

This report summarizes the results obtained from environmental noise survey conducted at Brisas de Arroyo in Arroyo, P.R. (See figure #1 for location) during May 28, 2021.



Figure #1- Survey Location for Brisas de Arroyo (Satellite Photo)

The results from this survey are summarized on Table # 4 and 5. The interpretation of the results is presented on page 16, and the conclusions and recommendations on page 17.

The LDN represents the 24 hours average sound level. For daytime period the Time – Weighted Average LDN is 52.1 dB. For nighttime period the Time – Weighted Average LDN is 60.1 dB.

Based on the data collected during the noise survey at daytime and nighttime, the Calculated Time – Weighted LDN Average _{24 hours} is 55.1 dB reveal a LDN level acceptable using the acceptability criterion of 65 dB for exterior.

INTRODUCTION

ShareTech Group was contracted by Star Management Corp. on May 26, 2021, to perform a limited and specific-scope noise survey during day and night periods at their project located at Morse Street Intersection with O Street Palmas Ward in the municipality of Arroyo. The study was carried out to measure the noise levels at selected locations at the perimeter of the Project to confirm compliance with the established HUD Noise criteria (24 CFR 51).

HUD defines the day period with hours in a range between 7:00 am and 10:00 pm and the night period in a range between 10:01 pm until 6:59 am. Refer to Table I on next page for the HUD noise criteria.

This study was carried out considering the Environmental Quality Board (EQB) regulatory requirements. Results were compared with the EQB established noise limits during night and day periods based on the residential nature of the buildings in the area. Day and night periods for environmental noise control limits are defined in the Puerto Rico's Environmental Quality Board (EQB) Noise Control Regulation, refer to Table III on Appendix 6 referenced from said regulation.

The area under study is classified as intermediate residential (R-I), as established by the Puerto Rico Planning Board, known in Spanish as “Junta de Planificación”. Table I on the next page shows the HUD Site Acceptability Standards for Day – Night Average Sound Level in decibels. An exterior noise level of 65 dB or lower is considered acceptable by HUD.

The HUD exterior noise standards refer to the degree of acceptability of the noise environment at the site. Noise environment is determined by the additional sound levels of those generated by buildings or other facilities containing noise sensitive uses.

The standards shall usually apply at a location 2 meters (6.5 feet) from the building housing noise sensitive activities in the direction of the predominant noise source. Where the building location is undetermined, the standards shall apply 2 meters (6.5 feet) from the building setback line nearest to the predominant noise source. The standards shall also apply at other locations where it is determined that quite outdoor space is required in an area ancillary to the principal use on the site.

The noise environment inside a building is considered acceptable if: (i) The noise environment external to the building complies with these standards, and (ii) the building is constructed in a manner common to the area or, if of uncommon construction, has at least the equivalent noise attenuation characteristics.

Under HUD, the Site Acceptability Standards for Day – Night sound level (in decibels) is presented below:

Table #1 – HUD Site Acceptability Standards

Acceptable or Unacceptable	Day-night average sound level (in decibels)	Special approvals and requirements
Acceptable	Not exceeding 65 dB (1)	None.
Normally Unacceptable	Above 65 dB but not exceeding 75 dB	Special Approvals (2)
		Environmental Review (3).
		Attenuation (4).
Unacceptable	Above 75 dB	Special Approvals (2).
		Environmental Review (3).
		Attenuation (5).

Notes:

- (1) Acceptable threshold may be shifted to 70 dB in special circumstances pursuant to §51.105(a).
- (2) See §51.104(b) for requirements.
- (3) See §51.104(b) for requirements.
- (4) 5 dB additional attenuation required for sites above 65 dB but not exceeding 70 dB and 10 dB additional attenuation required for sites above 70 dB but not exceeding 75 dB. (See §51.104(a).)
- (5) Attenuation measures to be submitted for approval on a case-by-case basis.

This report includes the results of the noise levels during the daytime period as well as during the nighttime period.

METHODOLOGY & EQUIPMENT

The noise survey was conducted in accordance with the requirements under HUD 24 CFR 51 and by EQB's Noise Pollution Control Regulation entitled "Reglamento para el Control de la Contaminación de Ruido" Appendix 1. The following tasks were performed as part of this survey:

Task 1) As stated earlier, the noise survey was also conducted in accordance with the requirements of EQB's Noise Pollution Control Regulation entitled "*Reglamento para el Control de la Contaminación de Ruido*" and with *HUD Noise criteria (Appendix 1)* as stated under 24 CFR 51 using one (1) calibrated sound level meter under the required American National Standards Institute (ANSI) Specifications. Two 3M Sound Pro Series DL Sound Level Meters was used to carry out this study.

The noise survey was conducted during the early morning periods at hours considered within both, the HUD and EQB daytime and nighttime regulatory definition on Friday, May 28, 2021. Four (4) noise measurement locations were surveyed during the daytime and nighttime periods on that day. No rain events occurred during the noise survey.

The noise survey was carried out using one (1) calibrated sound level meter which meets the "American National Standards Institute" (ANSI) specification for Type 1, sound level meter on its latest revision (See Figure #2). Sound Pro Series DL Sound Level Meter manufactured by 3M (Quest Technologies) were used. Refer to Appendix 3 for data on calibration of the sound level meter instrument. The instrument is equipped with software and data logger and generate the data used to prepare this report. The raw data is included under Appendix 4.



Figure #2- Sound Level Meter Photo

The sequence followed for conducting the noise survey is described below:

- The noise level measurements for the nighttime period were started at around 04:29 a.m. and finished approximately 06:38 a.m. The EQB nighttime noise period is encompassed between 10:01 p.m. and 06:59 a.m. Refer to table #II for details.
- The measurements for the daytime period were started at around 07:01 a.m. and finished approximately 09:08 a.m. The EQB daytime noise period is encompassed between 07:00 a.m. and 10:00 p.m. Refer to table #III for details.
- The sound level meter was calibrated pre and post the measurement using calibrator model AC-300. Refer to Appendix 2 for equipment calibration data.

The readings were collected using one (1) calibrated Sound Level Meter Model Sound-Pro DL:

- Meter 1 – Serial Number: BLP070008 (Calibrator serial number: AC300009487)

The monitoring stations (MS) or locations of this noise survey at Brisas de Arroyo Apartments perimeter are described in the table shown above. Refer to Figure #3 for these locations.

Table #2- Noise Survey Data Collected on Nighttime Period

Meter	Monitoring Station (MS)	Time	Run Time	Description – Refer to figure #3 for locations
1	1	04:29:47 am	00:30:04	Located at north side.
1	2	05:02:13 am	00:30:24	Located at west side.
1	3	05:36:26 am	00:30:03	Located at south side.
1	4	06:08:28 am	00:30:11	Located at east side.

Table #3- Noise Survey Data Collected on Daytime Period

Meter	Monitoring Station (MS)	Time	Run Time	Description- Refer to figure #3 for locations
1	1	07:01:52 am	00:30:30	Located at north side.
2	2	07:32:42 am	00:30:14	Located at west side.
1	3	08:06:38 am	00:30:05	Located at south side.
2	4	08:38:11 am	00:30:09	Located at east side.



Figure #3- Monitoring Station Locations on Brisas de Arroyo Apartments Aerial Photo

The monitoring stations (MS) for daytime and nighttime period are described as:

- **Monitoring Station #1:** Located at north side. Refer to Figure #3, the green pin.
- **Monitoring Station #2:** Located at west side. Refer to Figure #3, the red pin.
- **Monitoring Station #3:** Located at south side. Refer to Figure #3, the yellow pin.
- **Monitoring Station #4:** Located at east side. Refer to Figure #3, the blue pin.

***Note:** No rain events occurred during the noise survey. See Appendix 4 for Field Notes.

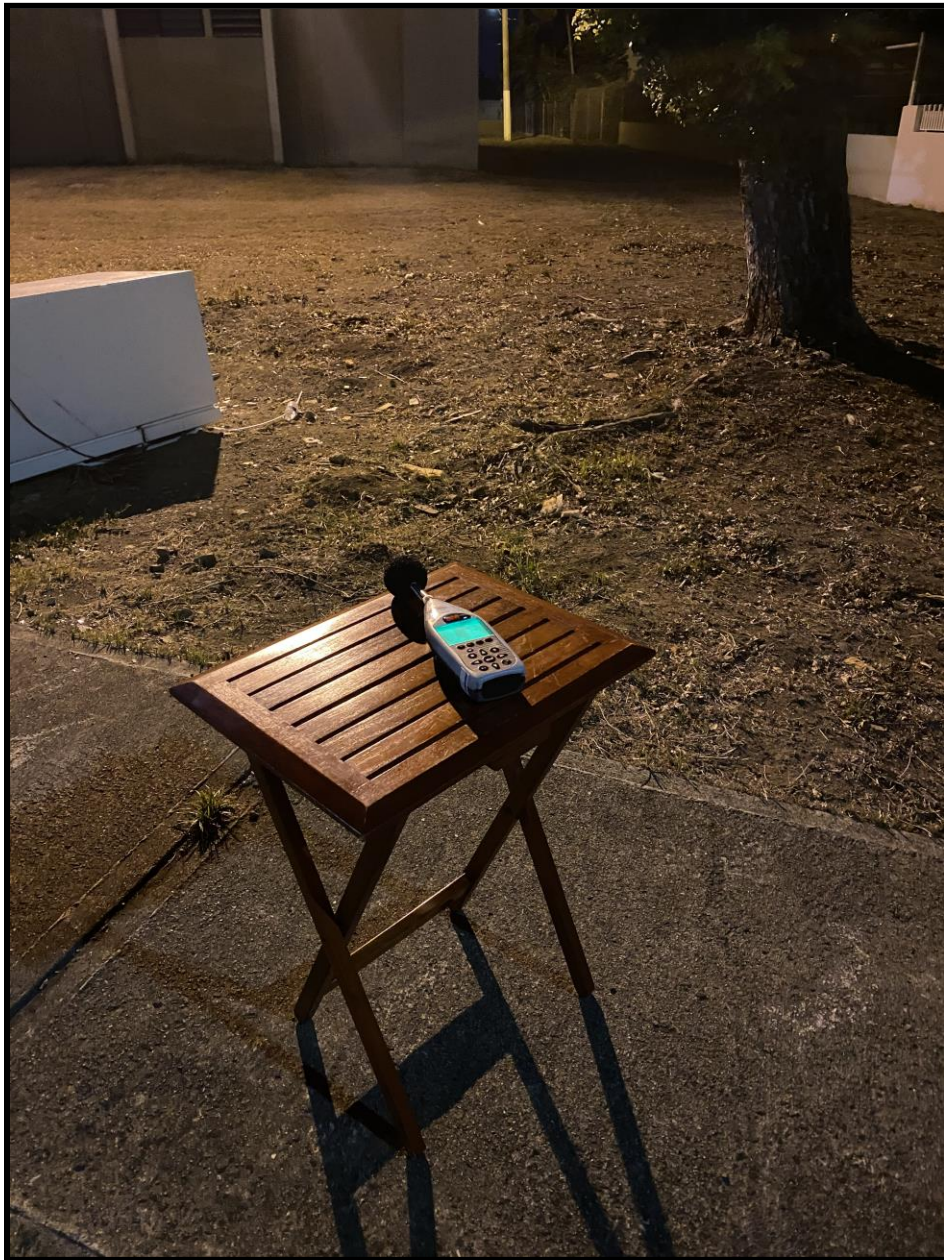


Figure #5- Monitoring Stations #1 location (North Side).



Figure #6- Monitoring Stations #2 location (West side).



Figure #7- Monitoring Stations #3 location (South Side).



Figure #8- Monitoring Stations #4 location (East Side).

Task 2) Preparation of Report - This report summarizes the results of the noise survey and was prepared for client use and discussions as they consider pertinent. Report includes findings, explanation of existing particular conditions during this noise survey, and interpretations of results, conclusions and recommendations, as applicable. **Appendix 3** includes the noise level measurements data and associated graphs as collected by the sound level meters, data logged and retrieved at the end of the study.

REPORT OF RESULTS

On May 28, 2021, a noise survey was performed during the day and night periods establish by EQB. No rain events occurred during the noise survey. The levels of this survey will be compared to the levels established on the regulation.

The detailed results of this survey are illustrated in Appendix 3. A summary was prepared using LDN values for each monitoring station. The LDN represents the day / night sound level, this measurement is a 24 – hour average sound level where 10 dB is added to all the readings that occur between 10 pm and 7 am. The results of this survey are presented in tables #IV & V, and in figure #9.

Table #4- Readings Recorded by the Sound Level Meters (Nighttime Period)

Monitoring Stations (MS)	LDN
Monitoring Station 1	58.8 dB
Monitoring Station 2	59.8 dB
Monitoring Station 3	59.9 dB
Monitoring Station 4	61.7 dB
Average Nighttime LDN	60.1 dB

Table #5- Readings Recorded by the Sound Level Meters (Daytime Period)

Monitoring Stations (MS)	LDN
Monitoring Station 1	50.5 dB
Monitoring Station 2	50.8 dB
Monitoring Station 3	55.1 dB
Monitoring Station 4	51.8 dB
Average Daytime LDN	52.1 dB

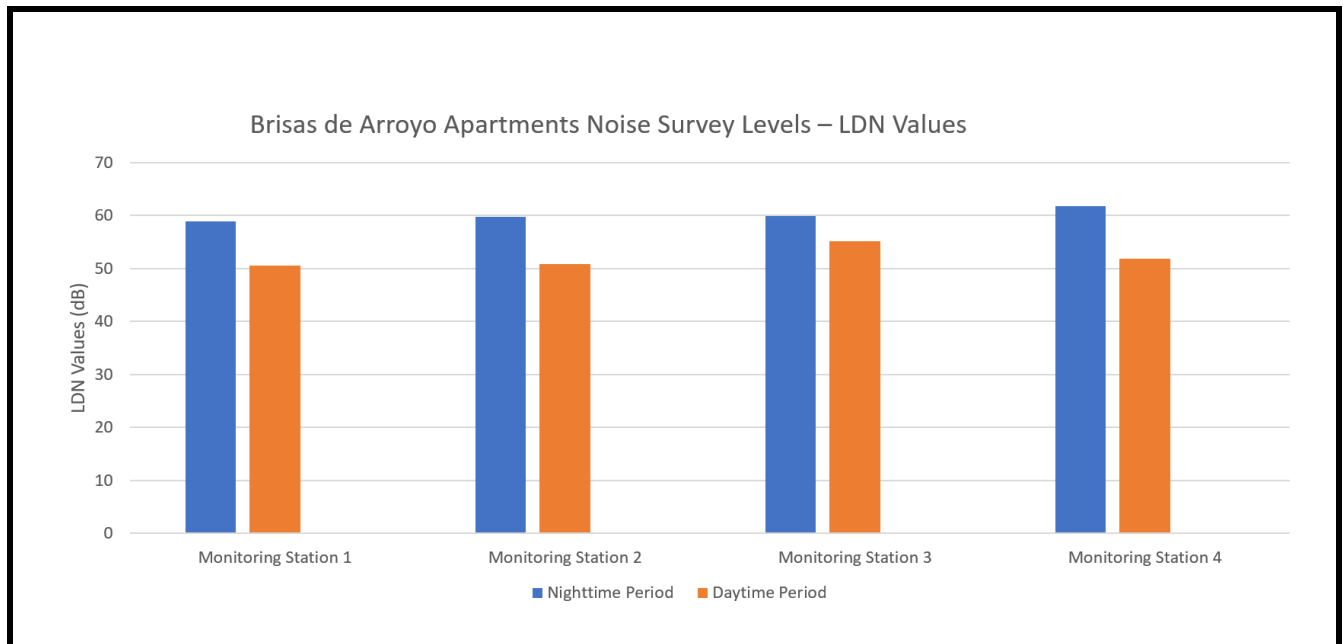


Figure #9- Monitoring Stations LDN Values.

A Calculated Time-Weighted Average for 24 hours is presented below:

$$\begin{aligned}
 \text{Weighted Average 24 hours} &= ((15/24) * \text{Daytime Period LDN}) + ((9/24) * \text{Nighttime Period LDN}) \\
 &= ((15/24) * 52.1 \text{ dB}) + ((9/24) * 60.1 \text{ dB}) \\
 &= 32.56 \text{ dB} + 22.54 \text{ dB}
 \end{aligned}$$

Calculated Time-Weighted LDN Average 24 hours = 55.1 dB

INTERPRETATION OF RESULTS

The EQB's Noise Pollution Control Regulation entitled "*Reglamento para el Control de la Contaminación de Ruido*" and HUD Noise criteria (Appendix 1) under 24 CFR 51 established the guidelines for an exterior noise level of 65 dB or lower is considered acceptable by HUD.

The LDN represents the 24 hours average sound level. For daytime period the Time – Weighted Average LDN is 52.1 dB. For nighttime period, the Time – Weighted Average LDN is 60.1 dB.

Based on the data collected during the noise survey at daytime and nighttime, the Calculated Time – Weighted LDN Average 24 hours is 55.1 dB reveal a LDN level acceptable using the acceptability criterion of 65 dB for exterior.

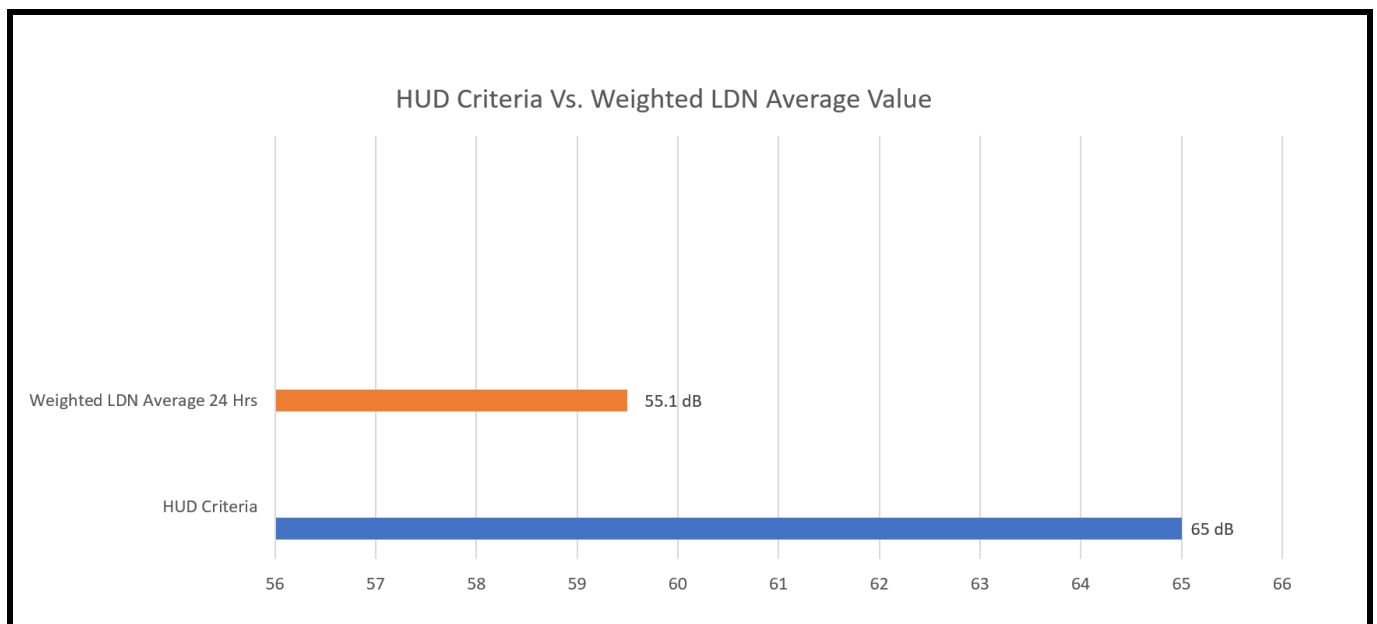


Figure #10- HUD Criteria -vs- Weighted LDN Average Value.

CONCLUSIONS AND RECOMMENDATIONS

The HUD noise acceptability criterion of 65 dB for exterior of the Brisas de Arroyo Apartments was met and, in our opinion, no further restrictions or controls are applicable to this project.

ACRONYMS

- SPL** - Sound Pressure Level will be displayed, with the selected weighting and response characteristics. The value displayed is the maximum SPL during the previous second. (SPL is also always shown in the display bar indicator.)
- LEQ** - The average integrated sound level accumulated while in the RUN mode is shown in the numeric display. LEQ indicates that a 3dB exchange rate was used for the measurements.
- LAVG** - The same type of measurement as LEQ, except that a 4, 5 or 6dB exchange rate was used. The display will be correct for the exchange rate selected.
- TWA** - Time Weighted Average. The average level accumulated during a study, but calculated with an eight-hour integration time.
- LMAX** - The Maximum SPL obtained while in the RUN mode is shown in the numeric display. With PEAK response selected, this functions as a Peak Hold.
- LMIN** - The Minimum Sound Pressure Level obtained while in the RUN mode is shown in the numeric display.
- LN** - The SPL exceeded for N of the time during a study. Four user selectable values are calculated. The default values are L5, L10, L50 and L90. The values may be changed in the PARA Setup Menu.
- LDN** - Day/Night Sound Level. The average sound pressure over a 24 hour study, with additional factors for time of day. Sound pressures between the hours of 10 pm and 7 am are increased by 10dB prior to being averaged. A 3dB exchange rate should be used and is generally assumed.
- CNEL** - Community Noise Exposure Level. The average sound pressure over a 24 hour study, with additional factors for time of day. Sound pressures between the hours of 7 pm and 10 pm are increased by 5dB prior to being averaged. Sound pressures between the hours of 10 pm and 7 am are increased by 10dB prior to being averaged. A 3dB exchange rate should be used and is generally assumed. If an exchange rate other than 3dB is selected via the Setup Menu, CNEL will not be calculated and the display will show.
- % OL** - Percentage of time during the study that an overload (OL) condition occurred. Overload indicates that the signal has exceeded the measuring range.
- SEL** - Sound Exposure in Pascal-squared seconds or Pascal-squared hours, switching from Pa2S to Pa2H at 3600 Pa2S. The display will show if the exchange rate is not 3dB.

SEL - The Sound Exposure Level is the constant Sound level which, if lasting for one Second, would deliver the same amount of acoustical energy as that accumulated over the entire Study

RTMS or **RTHM** - The total RUN time will be displayed. Time may be displayed in MIN:SEC and HRS:MIN. The MIN:SEC display for a Study that lasts over one hour will wrap around to 00:00. The HRS:MIN display will count to 99:59 and then wrap around to 00:00 but the actual time will be stored in memory.

LPK - The Peak Level. The output of a second peak detector may be viewed as LPK or logged. The frequency weighting is independent of the main RMS detector and may be set in the PAPA setup menu as 2PK. The selection of whether or not to log peaks is made in the LOG Setup Menu. The weighting selection (A, C or LIN) is made in the PAPA Setup Menu. While viewing LPK the weighting of the second peak detector is displayed, and the Weighting and Response keys are disabled.

LLOG - The LEQ (or LAVG) last logged during a study. Data is logged at a user defined interval. This feature may be used to display a timed LEQ for the previous logging interval. This display updates at the end of each logging interval. The display will show LLOG " if LEQ is not being logged.

TAKM - The time integration of individual Taktmaximal values. Taktmaximal is the maximum level (LMAX) encountered over either a 3 or 5 second interval. 3 or 5 second Taktmaximal is selected in the PAPA Setup Menu. Individual Taktmaximal (LMAX) values may be logged by setting the logging interval to 3 or 5 seconds in the LOG Setup Menu. Taktmaximal measurements are required by some countries' noise regulations. A Taktmaximal measurement calculates a higher average level for highly impulsive sounds than does a LEQ measurement. TAKM is affected by the Exchange Rate and should be run with an Exchange Rate of 3dB.

BATT - Displays the voltage of the weaker of the two 9 volt batteries to give an indication of remaining life. The low battery indication (DAT) on the display occurs at approximately 6.8 volts.

LC-A - An optional second RMS detector may be used to provide a simultaneous C-A weighted LEQ or LAVG of the measured sound. Refer to section 3.6 C-A Option".

DEFINITIONS

DbA- Sound level in decibels read on the A scale of sound-level meter. The A scale of a sound discriminates against very low frequencies (as does the human ear) and is therefore better for measuring general sound levels.

dBC- Sound level in decibels read on the C scale of sound-level meter. The C scale discriminates very little against very low frequencies.

Decibel (dB)- A unit used to express sound-power level (L) and sound-pressure level (Lv). Sound power is the total acoustic output of a sound source in watts (W). By definition, sound-power level, in decibels, is: $L_w = 10 \log W/W_o$, where W is the sound power of the source and W_o is the reference sound power of 10^{-12} . Because the decibel is also used to describe other physical quantities, such as electrical current and electrical voltage, the correct reference quantity must be specified.

Far field- In noise measurements, this refers to the distance from the noise source where the sound-pressure level decreases 6 dBA for each doubling of distance (inverse square law).

Filter- A device for separating components of a signal on the basis of its frequency. It allows components in one or more frequency bands to pass relatively unattenuated, and it greatly attenuates components in other frequency bands.

Free sound field (free field)- A field in a homogeneous, isotropic medium free from boundaries. In practice it is a field in which the effects of the boundaries are negligible over the region of interest.

Frequency (in Hz)- Rate at which pressure oscillations are produced One hertz is equivalent to one cycle per second A subjective characteristic of sound related to frequency is pitch.

Hearing conservation- The prevention or minimizing of noise-induced deafness through the use of hearing protection devices, the control of noise through engineering methods, annual audiometric tests, and employee training.

Hearing level- The deviation in decibels of an individual's threshold from the zero reference of the audiometer.

Near Field- In noise measurements, refers to a field in the immediate vicinity of the noise source where the sound-pressure level does not follow the inverse square law.

Noise- Any unwanted sound.

Pink noise- Noise that has been weighted, especially at the low end of the spectrum, so that the energy per band (usually octave band) is approximately constant over the spectrum.

Sound absorption coefficient- The ratio of the sound energy absorbed by the surface of a medium (or material) exposed to a sound field (or to sound radiation) to the sound energy incident on that surface.

Sound analyzer- A device for measuring the band-pressure level or pressure-spectrum level of a sound as a function of frequency.

Sound level- A weighted sound-pressure level obtained by the use of metering characteristics and the weighting A, B, or C specified in ANSI S1.4.

Sound-level meter and octave-band analyzer- Instruments for measuring sound-pressure levels in decibels referenced to 0.0002 microbars. Readings can also be made in specific octave bands, usually beginning at 75 Hz and continuing through 10,000 Hz.

Sound-pressure level, SPL- The level, in decibels, of a sound is 20 times the logarithm to the base 10 of the ratio of the pressure of this sound to the reference pressure, which must be explicitly stated.

Sound transmission- The word sound usually means sound waves traveling in air. However, sound waves also travel in solids and liquids. These sound waves may be transmitted to air to make sound we can hear.

APPENDIX 1: “REGLAMENTO PARA EL CONTROL DE LA CONTAMINACIÓN DE RUIDO”

DEPARTAMENTO DE ESTADO

Número: 8019

Fecha: 9 de mayo de 2011

Aprobado: Hon. Kenneth D. McClintock
Secretario de Estado



Por: Eduardo Arosemena Muñoz
Secretario Auxiliar de Servicios

Reglamento para el control de la CONTAMINACIÓN por RUIDOS

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DEPARTAMENTO DE ESTADO
CERTIFICACIONES Y
REGULACIONES
11 MAY -9 PM 3:55 PM

Título del Reglamento: Reglamento para el Control de Contaminación por Ruidos

Fecha de aprobación 5 de mayo de 2011 (Resolución R-11-7-1)

Aprobación: Junta de Gobierno en pleno compuesta por:

Sr. Reynaldo Matos
Miembro Asociado

Lcda. Blanche Gonzalez Hodge
Miembro Asociado

Lcdo. Pedro J. Nieves Miranda
Presidente

Fecha de publicación del Aviso Público: 1 de mayo de 2010, periódico El Vocero
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Agencia que lo aprobó: Junta de Calidad Ambiental
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San Juan, Puerto Rico 00926-2604

Referencia sobre autoridad estatutaria para promulgar el reglamento: Ley sobre Política Pública Ambiental, Ley Núm. 416 de 22 de septiembre de 2004, según enmendada

Reglamento Número: _____

Fecha de Radicación en el
Departamento de Estado: _____

Fecha de Vigencia: _____

Reglamento a enmendarse:

Reglamento para el Control de la
Contaminación por Ruidos,
Reglamento Núm. 3418 de 25 de
febrero de 1987.

CERTIFICACIÓN

Certifico que el procedimiento de reglamentación seguido en este caso se llevó a tenor con las disposiciones de la Ley de Procedimiento Administrativo Uniforme, Ley Núm. 170 de 12 de agosto de 1988, según enmendada, y que el reglamento a que hace referencia este Volante Supletorio fue debidamente revisado y no contiene errores sustantivos, tipográficos o clericales. Además, Certifico que con el Volante Supletorio se acompaña copia de los avisos de prensa publicados.



Lcda. Edmée Zeidan Cuebas
Secretaria de la Junta de Gobierno de
la Junta de Calidad Ambiental

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PARTE I: DISPOSICIONES GENERALES

REGLA 1 – TÍTULO

Estas Reglas se conocerán como Reglamento para el Control de la Contaminación por Ruidos.

REGLA 2 – BASE LEGAL

Este Reglamento es promulgado bajo la autoridad conferida a la Junta de Calidad Ambiental de Puerto Rico, en adelante la JCA, mediante la Ley sobre Política Pública Ambiental, Ley Núm. 416 del 22 de septiembre de 2004, según enmendada, y de conformidad con las disposiciones de la Ley de Procedimiento Administrativo Uniforme, Ley Núm. 170 del 22 de agosto de 1988, según enmendada.

REGLA 3 – ENMIENDA AL REGLAMENTO PARA EL CONTROL DE LA CONTAMINACIÓN POR RUIDO

Este Reglamento enmienda el Reglamento para el Control de la Contaminación por Ruidos, Reglamento Núm. 3418 de 25 de febrero de 1987.

REGLA 4 – PROPÓSITO

Los propósitos de este Reglamento son:

- A. Establecer las normas y requisitos para el control, disminución o eliminación de ruidos que puedan resultar nocivos a la salud y perturbar el bienestar público.
- B. Establecer los requisitos para los niveles de emisiones de ruido entre zonas y para la administración y procedimientos relacionados con la valoración de los niveles sonoros.

REGLA 5 – VIGENCIA DEL REGLAMENTO

- A. Este Reglamento comenzará a regir a los treinta (30) días de su radicación en el Departamento de Estado.

- B. Todos los asuntos que hayan sido presentados con antelación a la vigencia de este Reglamento y que se encuentren pendientes ante la JCA o un tribunal con jurisdicción y competencia, continuarán su curso de acuerdo a lo establecido en el Reglamento Núm. 3418 de 24 de febrero de 1987.

REGLA 6 – CLÁUSULA DE SEPARABILIDAD

Si cualquier disposición del presente Reglamento fuese declarada ilegal o inconstitucional por un tribunal con jurisdicción y competencia, tal decisión no afectará las demás disposiciones del mismo, las cuales se mantendrán en pleno efecto y vigor, considerándose cada una por separado.

REGLA 7 – DISPOSICIONES CONFLICTIVAS O CONTRADICTORIAS

Cuando dos o más disposiciones de este Reglamento sean aplicables a la misma situación de hechos y éstas resultaran ser contradictorias o conflictivas entre sí, se aplicará la disposición que sea más restrictiva.

REGLA 8-9 –RESERVADAS

PARTE II: DEFINICIONES

REGLA 10 – DEFINICIONES

Para propósitos de este Reglamento, los siguientes términos tendrán los significados que se expresan a continuación y deberá entenderse que el singular incluye el plural y el masculino incluye el femenino:

- A. Aerogenerador** – es un aparato que convierte la energía eólica en energía eléctrica mediante un generador accionado por el viento, conocido también como turbina eólica. Sus componentes estructurales y mecánicos incluyen una torre, góndola (en inglés, "nacelle"), generador, sistema de control y cimientos, entre otros.
- B. Amortiguador de sonido ("muffler")** – es cualquier dispositivo o artefacto utilizado para reducir el sonido producido por la emisión de gases provenientes de un motor de combustión interna.
- C. Bocina de aire** – es cualquier artefacto que se utilice para producir una señal de sonido y para lo cual se utilice gas comprimido.

- D. Construcción** – es cualquier actividad relacionada a la instalación de un equipo generador de sonido, movimiento de terreno, demolición, remoción o disposición, excavación y operaciones de terminaciones en edificios, predios, derechos de vías, estructuras públicas o privadas o propiedad similar.
- E. Contaminación por ruido** – es cualquier emisión de sonido que exceda los niveles de ruido permitidos en este Reglamento.
- F. Decibello o Decibel (dB)** – es una unidad para medir la intensidad del sonido, la cual es igual a veinte (20) veces el logaritmo de base 10 de la razón entre la presión del sonido y la presión de referencia, la que es 20 micro pascals (μPa).
- G. dB(A)** – es la unidad de medida utilizada para comparar magnitudes del total de la presión de sonido cuando se usa la escala de medición "A" del sonómetro y usando una presión de referencia de 20 micro pascals (μPa).
- H. Demolición** – es la destrucción, remoción o desmantelamiento intencional de estructuras de forma total o parcial, tales como, pero sin limitarse a, edificios públicos o privados, superficies de vía u otros similares.
- I. Día de la semana** – es cualquier día natural de la semana.
- J. Emergencia** – es cualquier determinación hecha por el Director Ejecutivo de la JCA o la Junta de Gobierno de la JCA, mediante Resolución al respecto, ante un evento particular, sobre cualquier situación o serie de situaciones que ponen en peligro real o inminente a cualquier persona, propiedad o recurso, y para el cual se requiere atención inmediata. Se entenderá también como emergencia, cualquier anomalía causada por un evento natural o tecnológico, tales como huracán, tornado, tormenta, inundación, terremoto, maremoto, derrumbe de tierra, sequía, incendio, explosión, accidente o materiales peligrosos, entre otros; cualquier grave perturbación del orden público o un ataque por fuerza enemiga a través de sabotaje o mediante el uso de bombas, artillería o explosivo de cualquier género o por medio atómico, radiológico, químico o bacteriológico, así como también por cualquier otro medio que utilice el enemigo en cualquier parte de Puerto Rico y que amerite que se movilicen y se utilicen recursos humanos y económicos extraordinarios a nivel estatal y municipal para remediar los daños causados o evitar los que puedan surgir en ese estado o para prevenir o disminuir la amenaza de que la emergencia pueda convertirse en un desastre.
- K. Emisión de Sonido** – es la emanación de sonido a la atmósfera por una

fuentes emisoras.

- L. Espectro sonoro** – es la descripción de un sonido en términos de sus componentes de frecuencia. Se utiliza el análisis en bandas de 1/1 octava, 1/3 octava y el análisis de Fourier (FFT).
- M. Fuente emisora** – es cualquier objeto o artefacto originador de ondas sonoras, sea de tipo estacionario, móvil o portátil.
- N. Góndola ("nacelle")** – es la estructura en la cima de la torre de un aerogenerador que contiene todos los componentes generadores del aerogenerador, incluyendo el multiplicador y el generador eléctrico, entre otros.
- O. Junta de Calidad Ambiental (JCA)** – es la agencia del Gobierno de Puerto Rico creada por la Ley Núm. 416 de 22 de septiembre de 2004, según enmendada, conocida como la Ley sobre Política Pública Ambiental.
- P. Junta de Gobierno de la JCA** – es el organismo rector de la Junta de Calidad Ambiental, el cual se compone de tres miembros nombrados por el Gobernador con el consejo y consentimiento del Senado y se compone de un Presidente, un Vice-Presidente y un Miembro Asociado. Un Miembro Alternativo, que también es nombrado por el Gobernador, podrá sustituir a cualquiera de los miembros asociados cuando uno de estos no se encuentre presente.
- Q. K_I** – es la penalización por ruidos impulsivos ($L_{im} - L_{eq}$).
- R. K_T** – es la penalización por tonos prominentes.
- S. L_{10}** – es el nivel de sonido en la escala A, dB (A), que es excedido en un diez por ciento (10%) del tiempo para un determinado periodo bajo consideración.
- T. L_{90}** – representa el nivel que ha superado el 90% del tiempo de medida. Es indicativo de los valores bajos de ruido.
- U. L_{im}** – es el nivel máximo de presión observado con detección de "impulsos".
- V. $L_{equivalente} (L_{eq})$** – es el nivel sonoro continuo equivalente; es decir, el nivel constante, dB(A), que puede producir la misma energía sonora (medida en escala A) que un sonido variante especificado en un tiempo establecido.
- W. $L_{equivalente tiempo} (L_{eq T})$** – es el nivel sonoro continuo equivalente. Éste se

define como el valor del nivel de presión en dB en ponderación A de un sonido estable que en un intervalo de tiempo (T) posee la misma presión sonora cuadrática media (P_{rms} : valor eficaz) que el sonido que se mide y cuyo nivel varía con el tiempo.

X. LICA – el nivel máximo permitido a la fuente por este Reglamento, excluyendo la influencia del ruido de fondo.

Y. Límite de propiedad – es límite de la colindancia del predio donde ubica la fuente originadora de sonido.

Z. Medición de Sonido – es la recopilación de datos sonoros de acuerdo a los procedimientos establecidos por la Junta de Calidad Ambiental.

AA. Nivel de presión acústica ("Sound Pressure Level" o SPL) – es la cantidad en decibeles que se obtiene como resultado del cálculo matemático que consiste del producto de 20 por el logaritmo de base 10 de la razón entre la presión acústica registrada (P) y el valor de la presión acústica de referencia (P_{ref}) que equivale a 2×10^{-5} Newtons/m²; esto es, " $20 \cdot \log_{10} (P/P_{ref})$ ".

BB. Nivel de sonido o nivel sonoro – es el nivel de presión de sonido medido mediante las características de medición y escalas A, B o C, tal como lo especifica la última revisión de "*Specification for Sound Level Meters*" de la "*American National Standards Institute*" (ANSI).

CC. Ondas de sonido – son las variaciones periódicas ondulatorias de sonido en la densidad y en la presión del medio.

DD. Onda sonora – es la variación en la presión de un medio (típicamente, el aire) y que se propaga a una velocidad característica.

EE. Parte responsable – es toda persona natural o jurídica que sea dueño u operador de la fuente emisora del ruido causando un incumplimiento con este Reglamento.

FF. Periodo diurno – es el periodo comprendido entre las 7:00 a.m. y las 10:00 p.m. de cualquier día de la semana.

GG. Periodo nocturno – es el periodo comprendido entre las 10:01 p.m. de un día y las 6:59 a.m. del día siguiente.

HH. Persona – es toda persona, natural o jurídica, o grupo de personas privadas o públicas, incluyendo agencias e instrumentalidades del gobierno, municipios u otras similares.

II. Predio originador de sonido – es el sitio, local o lugar de origen de ondas sonoras o cualquier área geográfica, incluyendo todos los terrenos y cuerpos de agua contiguos. Éste comprende todas las fuentes individuales de sonido que estén localizadas dentro de los límites de dicha propiedad, ya sean de tipo estacionario, móvil o portátil.

JJ. Predio originador de sonido existente – es cualquier predio originador de sonido existente a la fecha de vigencia de este Reglamento.

KK. Predio originador de sonido nuevo o modificado – es cualquier predio originador de sonido que sea establecido en una fecha posterior a la vigencia de este Reglamento, o que existiendo sea modificado de alguna manera.

LL. Presión acústica – son las variaciones en la fuerza por unidad de área, medida en Newtons/metro², que se observa en un medio durante la propagación de una onda acústica. Para el caso del medio "aire", se registran variaciones por encima y por debajo de la presión atmosférica local.

MM. Presión de onda sonora– se representa como "Lp" y se expresa en decibeles. Esta cantidad se obtiene como resultado de un cálculo matemático que consiste del producto de 20 por el logaritmo de base 10 de la razón entre la presión de sonido (P) y una presión de referencia (P_{ref}) de 20 micro pascales (μPa); esto es, $L_p = 20 \log_{10} (P/P_{ref})$.

NN. Rotor – está compuesto por varias palas y es el que transforma la energía cinética del viento en un momento torsor en el eje del equipo.

OO. Ruido – es un sonido que excede las limitaciones (valores) establecidos en este Reglamento. El sonido podría o no resultar indeseable y afectar psicológicamente y/o fisiológicamente al ser humano.

PP. Ruido continuo – es aquel ruido que se manifiesta ininterrumpidamente durante más de tres minutos. Dentro de esta categoría se diferencian las siguientes tres situaciones:

1. Ruido continuo fluctuante – es aquel ruido cuyo nivel de presión acústica, (SPL), varía entre unos límites que difieren en más de 6 dB(A) cuando se utiliza la respuesta rápida ("fast") del sonómetro.

2. Ruido continuo uniforme – es aquel ruido cuyo nivel de presión acústica, (SPL), varía entre unos límites que difieren en menos de 3 dB(A) cuando se utiliza la respuesta rápida ("fast") del sonómetro.

- 3. Ruido continuo variable** – es aquel ruido cuyo nivel de presión acústica, (SPL), varía entre unos límites que van desde 3 a 6 dB(A) cuando se utiliza la respuesta rápida ("fast") del sonómetro.
- QQ. Ruido de fondo ambiental** – es el ruido existente en un ambiente dado y que se compone, usualmente, de sonidos de diversas fuentes, cercanas y lejanas. Se excluye la fuente de ruido que da lugar a la querella.
- RR. Ruido de fondo despreciable** – es un ruido de fondo cuyo nivel está sobre los 10 dB de diferencia al de la fuente sonora que se desea medir.
- SS. Ruido de fondo elevado** – es un ruido de fondo cuya diferencia es menor de 3 dB cuando se compara con el ruido de la fuente sonora.
- TT. Ruido esporádico** – es aquel ruido que se manifiesta interrumpidamente durante un periodo de tiempo igual o menor de tres (3) minutos.
- UU. Ruido esporádico aleatorio** – es aquel ruido esporádico que se produce de forma totalmente impredecible.
- VV. Ruido esporádico intermitente** – es aquel ruido esporádico que se repite en periodos de tiempo que son posibles de determinar.
- WW. Ruido estridente** – es un ruido agudo, desapacible y chirriante.
- XX. Ruido impulsivo** – es un ruido procedente de un sonido impulsivo.
- YY. Ruido perturbador** – es un ruido que atenta contra la paz y/o tranquilidad de una persona y que viola las disposiciones de este Reglamento.
- ZZ. Sistema de generación de energía eólica** – es un sistema compuesto de uno o más aerogeneradores y sus obras accesorias. Para propósito de este Reglamento, este sistema podrá clasificarse en uno de tres grupos básicos conforme a las siguientes definiciones:
- 1. Sistema de generación de energía eólica de escala pequeña** – es aquel que en total tiene una capacidad nominal para generar hasta veinte (20) kilowatts (kW) de electricidad.
 - 2. Sistemas de generación de energía eólica de escala mediana o distribuida** – es aquel que se compone de uno (1) a cinco (5) aerogeneradores y que en total tiene una capacidad nominal para generar más de veinte (20) kilowatts (kW) de electricidad, pero en el que

ninguno de los aerogeneradores tiene la capacidad para generar individualmente más de un (1) megawatt (MW) de electricidad.

3. Sistemas de generación de energía eólica de gran escala o escala industrial – es aquel que se compone de más de cinco (5) aerogeneradores o que, de estar compuesto por menos de cinco (5) aerogeneradores, incluye al menos un (1) aerogenerador que tiene la capacidad individual para generar un (1) megawatt (MW) de electricidad o más.

AAA. Sonido – es un fenómeno físico en el cual la materia se pone en vibración y genera una onda acústica en un medio particular que es captada por un receptor. Éste se puede describir usando diversas características, tales como: longitud de onda, velocidad de propagación, nivel sonoro, contenido espectral y duración.

BBB. Sonido impulsivo – es un sonido de muy corta duración, generalmente de una fracción de segundo y con una abrupta subida y rápida disminución de presión acústica. Ejemplos típicos de este tipo de sonido son las explosiones, impactos de martillo, descargas de armas de fuego, entre otros.

CCC. Sonido indeseable – es aquel sonido que excede los niveles permitidos en este Reglamento.

DDD. Sonómetro – es un instrumento que se usa para medir los niveles de sonido, de acuerdo con el "Specification for Sound Level Meters" Type 1 y 2, o la última revisión aprobada de la "American National Standards Institute" (ANSI). Incluye el sonómetro de precisión calibrada y el sonómetro integrado de precisión.

EEE. Tono – es un sonido caracterizado por una sola frecuencia e incluye cualquier sonido que pueda ser percibido como un tono único o una sucesión de tonos.

FFF. Torre – es una estructura que soporta la góndola y el rotor en un aerogenerador.

GGG. Vehículo de motor – es cualquier vehículo impulsado o movido sobre el terreno por un motor. Incluye vehículos tales como, pero sin limitarse a, vehículos de pasajeros, camiones, camiones de arrastre, arrastres de acampar, vehículos de carreras, vehículos de recreación y motocicletas.

HHH. Vía pública – es cualquier vía, calle, carretera, autopista, avenida, callejón, acera o espacio similar destinado al uso público.

III. Vibración – es un movimiento oscilatorio de cuerpos materiales y que es descrito por las variables de velocidad, aceleración y amplitud.

JJJ. Zona – cualquiera de las áreas en la que el ser humano lleva a cabo diversas actividades y que han sido clasificadas en este Reglamento como: zona de tranquilidad, zona residencial, zona comercial o zona industrial.

KKK. Zona Comercial – área donde se agrupan locales comerciales no habitados por humanos y en los que se vende toda clase de mercancía o se brindan servicios misceláneos. En esta zona se permiten niveles superiores a los permitidos en las zonas residenciales, pero inferiores a los niveles de ruido en las zonas industriales. Esta definición incluye, pero no se limita, a áreas tales como las siguientes: establecimientos comerciales de alimentos, estaciones de servicios de vehículos, recreación y entretenimiento, servicios comunales.

LLL. Zona de Tranquilidad – área previamente designada por el gobierno estatal, municipal o federal, en la que haya necesidad de una tranquilidad excepcional.

MMM. Zona Industrial – área de terreno subdividida y desarrollada, de acuerdo con un plan general, para el uso de una cantidad de empresas industriales en la cual los seres humanos van a permanecer por largos periodos de tiempo. Las actividades económicas que envuelve esta zona, son de tal naturaleza que se anticipan niveles mayores de ruido que en las otras zonas.

NNN. Zona Residencial – área en la cual los seres humanos habitan y donde los niveles de ruido pueden interferir con el disfrute de la propiedad. Ésta incluye todas las residencias, terrenos y estructuras. Dicha zona aplica también a cualquier sitio dentro de los límites de la propiedad, según sea aplicable.

PARTE III: DISPOSICIONES ADMINISTRATIVAS

REGLA 11 – DERECHO DE UN FUNCIONARIO A ACCEDER, INSPECCIONAR, EXAMINAR O LLEVAR A CABO CUALQUIER ACCIÓN PERTINENTE

A. La JCA, representada por sus miembros, agentes o empleados, podrá acceder, inspeccionar, examinar y llevar a cabo cualquier otra acción autorizada por este Reglamento, por la Ley sobre Política Pública Ambiental, *supra*, por la Ley de Procedimiento Administrativo Uniforme, *supra*, o por un Tribunal con jurisdicción y competencia. Estas acciones podrán llevarse a

cabo en cualquier local, equipo, instalación y/o documentos de cualquier persona, entidad, firma, agencia o instrumentalidad gubernamental sujeta a su jurisdicción. Estas gestiones serán realizadas con el fin de investigar, inspeccionar o tomar aquellas medidas que se estimen necesarias para asegurar las mejores condiciones ambientales, verificar el cumplimiento con las disposiciones de este Reglamento y tomar las medidas de sonido que la JCA estime necesarias.

- B. En caso de que a un funcionario de la JCA que esté identificado como tal, se le niegue el acceso o se le impida realizar una inspección o cualquier acción autorizada en ley, la JCA podrá expedir una orden administrativa u obtener una orden judicial, según los procedimientos dispuestos por la Ley sobre Política Pública Ambiental, *supra*, la Ley de Procedimiento Administrativo Uniforme, *supra*, o cualquier otra ley especial.
- C. Cualquier solicitud de documentos que se encuentre dentro del ámbito jurisdiccional de la JCA que sea hecha por un funcionario de esta agencia y que esté debidamente identificado y autorizado para llevar a cabo una inspección o cualquier asunto comprendido en la Ley de Política Pública Ambiental, *supra*, o en este Reglamento, tendrá que ser provista dentro de un término no mayor de cuarenta y ocho (48) horas o aquel período de tiempo que disponga la JCA.

REGLA 12 – INFORMACIÓN DISPONIBLE AL PÚBLICO

- A. Toda información recibida por la JCA estará disponible para ser inspeccionada y copiada por el público, según dispuesto en la Ley sobre Política Pública Ambiental, *supra*, en este Reglamento o en cualquier mecanismo que para ello se apruebe por la JCA.
- B. Cualquier persona que someta información y documentos a la JCA, podrá reclamar confidencialidad para toda o parte de la información o documento sometido. Dicha solicitud deberá realizarse por escrito y expondrá todas las razones por las cuales se solicita la confidencialidad.
- C. Cualquier información o documento presentado a la JCA sin haberse presentado la correspondiente solicitud de confidencialidad conforme a lo aquí dispuesto, estará disponible al público sin restricción alguna. La JCA adjudicará los reclamos de confidencialidad de conformidad con la Ley sobre Política Pública Ambiental, *supra*, o cualquier mecanismo que a tales efectos apruebe la Junta de Gobierno de la JCA.

REGLA 13 – NOTIFICACIÓN DE VIOLACIÓN Y ÓRDENES ADMINISTRATIVAS

- A. Siempre que la JCA encuentre que una o más disposiciones de este Reglamento han sido violadas o haya motivos fundados para pensar que han sido violadas, la JCA podrá, a su discreción, expedir por escrito una notificación de violación en contra del alegado infractor. Toda notificación especificará en qué consistió la violación y/o los aspectos que están fuera de cumplimiento con esta reglamentación.
- B. La notificación de la que habla el inciso anterior especificará los requisitos y las condiciones que la JCA determine necesarios y podrá incluir términos de tiempo para lograr cumplimiento. No obstante lo antes mencionado e independientemente de que se haya expedido una notificación de violación, la JCA podrá expedir una Orden Administrativa de Hacer, Mostrar Causa y/o, Cese y Desista, así como cualquier otra acción o provisión disponible en la Ley sobre Política Pública Ambiental, *supra*.

REGLA 14 – PENALIDADES

- A. Cualquier violación a este Reglamento estará sujeta a las penalidades según establecidas en la Ley sobre Política Pública Ambiental, *supra*.
- B. La imposición de penalidades se realizará luego de finalizado un proceso de vista administrativa, el que se conducirá según las disposiciones de la Ley de Procedimiento Administrativo Uniforme, *supra*, la Ley sobre Política Pública Ambiental, *supra*, y el reglamento aprobado por la JCA para la celebración de procedimientos y/o vistas administrativas.

REGLA 15 – ESTORBO PÚBLICO

Ninguna parte de este Reglamento deberá entenderse como que autoriza o legaliza la creación o mantenimiento de un estorbo público, según ha sido definido por las leyes estatales y federales.

REGLA 16 – ACCIONES LEGALES DE CIUDADANOS

Ninguna parte de este Reglamento deberá entenderse como un límite a las acciones legales civiles que pudiesen llevar los ciudadanos, según se establece en el Artículo 19 de la Ley sobre Política Pública Ambiental, *supra*.

REGLA 17 – RESPONSABILIDAD DE CUMPLIMIENTO

Este Reglamento no limita el derecho de persona alguna para exigir o lograr el cumplimiento con sus requisitos o para proveer los servicios requeridos al

contratar con terceros. Sin embargo, tales contratos no relevarán a ninguna persona de la obligación de cumplir con este Reglamento.

REGLA 18-19- RESERVADAS

PARTE IV: PROHIBICIONES Y REQUISITOS GENERALES

REGLA 20- PROHIBICIONES GENERALES

A. Acciones prohibidas

Queda prohibida cualquier acción u omisión en violación a los requisitos establecidos en este Reglamento. Por tanto, ninguna persona causará o permitirá que se produzca la contaminación por ruido debido a la emisión de cualquier sonido en violación a este Reglamento.

B. Información Falsa o Errónea.

Ninguna persona podrá someter por sí o por una tercera persona, información falsa o errónea a la JCA. Tampoco podrá incluir o permitir que se incluya información falsa en algún documento sometido a la JCA en virtud de este Reglamento.

C. Interferencia

Ninguna persona causará o permitirá:

1. La interferencia, alteración, remoción o destrucción de cualquier equipo de control de ruido, excepto que no sea para propósitos de reparación o reposición.
2. La interferencia intencional o alteración de cualquier instrumento, artefacto o área de localización debidamente rotulada, que haya sido localizado por o para la JCA con el propósito de llevar a cabo cualquier tipo de medición de sonido.
3. El uso de un producto al cual le haya sido removido o dejado inoperante el sistema de control de ruido, cualquier elemento de diseño de éste o su rótulo de nivel de sonido.

D. Registros o Records

La JCA podrá requerir del dueño o persona responsable de cualquier predio originador de sonido o fuente emisora de sonido, que establezca y mantenga un registro sobre la emisión de los mismos, así como preparar aquellos informes que, a juicio de la JCA, sean necesarios.

E. Mediciones

Todas las mediciones y los análisis de datos se harán de acuerdo con los métodos y procedimientos adoptados o aceptados por la JCA conforme a este Reglamento.

F. Equipo

Todo equipo para el control de la contaminación por ruidos deberá instalarse, conservarse y operarse en forma satisfactoria y razonable de acuerdo con las especificaciones del fabricante, de la "American National Standards Institute" (ANSI), *Specification for Sound Level Meter*, S1.4-1971, o su última revisión, así como con aquellos requisitos establecidos por la JCA.

REGLA 21 – RUIDOS PROHIBIDOS

A. Las siguientes acciones, entre otras, se declaran como ruidos contaminantes, excesivos, perturbadores y estridentes y están prohibidos por este Reglamento:

1. Bocinas y sirenas

Ninguna persona ocasionará o permitirá, innecesariamente, el sonar de bocinas y sirenas de cualquier vehículo de motor en una vía pública o predio originador de sonido, excepto como una señal de peligro o en casos de emergencia, según definido en este Reglamento.

2. Radios, instrumentos musicales, velloneras, amplificadores y artefactos similares

Ninguna persona operará o permitirá la operación de cualquier radio, instrumento musical, vellonera, amplificador o cualquier artefacto similar para la producción o reproducción de sonido, de tal forma que ocasione contaminación por ruido a través del límite de propiedad, en violación de los límites fijados en este Reglamento.

3. Altoparlantes exteriores, megáfonos y artefactos similares

Ninguna persona usará u operará o permitirá el uso u operación de cualquier altoparlante, megáfono o artefacto similar en una posición fija o movable en el exterior de cualquier estructura o vehículo de motor, en exceso de los niveles máximos permitidos bajo este Reglamento. No podrán usarse dichos artefactos durante el periodo nocturno.

4. Construcción

Ninguna persona usará u operará o permitirá el uso u operación de cualquier equipo para la construcción, reparación o trabajos de demolición, de forma que se produzca contaminación por ruido, según se define en este Reglamento. Además, se prohíbe el uso u operación de dicho equipo durante el periodo nocturno, excepto para realizar obras en casos de emergencia, según definido en este Reglamento.

Esta Sección no aplicará al uso de herramientas domésticas, sujeto a este Reglamento.

5. Vehículos de motor

- a. Ninguna persona operará o permitirá la operación de un vehículo de motor en una vía pública en cualquier momento de forma tal que los niveles de presión de sonido emitidos por el vehículo excedan los niveles máximos permisibles establecidos en este Reglamento. Tampoco se permitirá la operación de un vehículo de motor que no esté equipado por un sistema, aparato o artefacto amortiguador de sonido que opere eficientemente.
- b. Ninguna persona dejará operando o permitirá la operación de cualquier vehículo de motor o cualquier equipo auxiliar de arrastre estacionado en una vía pública o predio de estacionamiento público o privado, a una distancia menor de 150 pies de la zona designada como residencial o tranquilidad durante el periodo nocturno. Esta prohibición abarca todo equipo que forme parte del vehículo de motor, tales como, pero no limitados a, equipo de refrigeración o equipo similar.

6. Eventos de vehículos de motor de carreras

Ninguna persona realizará o permitirá la realización de pruebas o carreras de vehículos de motor, en violación de las normas establecidas

en este Reglamento. Dicha prohibición está exceptuada para aquellas pistas autorizadas en forma prescrita por la JCA.

7. Vehículos de recolección de desperdicios sólidos

- a. Ninguna persona operará o permitirá la operación del mecanismo de compactar desperdicios sólidos en cualquier vehículo de motor, de tal forma que durante el ciclo de compactación se exceda el nivel de presión de sonido de 76 dB(A) medido a una distancia de 23 pies o su equivalente, desde cualquier punto del vehículo.
- b. Ninguna persona recolectará o permitirá la recolección de desperdicios sólidos en las zonas residenciales y de tranquilidad entre las 10:00 p.m. de un día a las 6:00 a.m. del siguiente día.

8. Alarmas

Ninguna persona sonará o permitirá el sonar de cualquier alarma exterior en cualquier edificio o vehículo a menos que tal alarma cese su operación dentro de diez (10) minutos luego de ser activada y cuya finalidad tenga el propósito de alertar una emergencia u acto criminal.

9. Maquinaria, equipo, abanicos y acondicionador de aire

Ninguna persona operará o permitirá la operación de maquinaria, equipo, abanicos y acondicionadores de aire de tal forma que excedan los límites máximos de niveles de presión de sonido establecidos en este Reglamento.

10. Reparación y prueba de vehículos de motor

La reparación, remodelación, reconstrucción, fabricación o prueba de cualquier vehículo de motor o motocicletas estará sujeta a los niveles máximos permisibles de sonidos fijados en este Reglamento.

11. Equipo de motor doméstico (*Domestic Power Tools*)

Ninguna persona operará o permitirá la operación de equipos de motor tales como: sierras, lijadoras, taladros, máquinas de cortar grama y equipo de jardín o herramientas de cualquier naturaleza, usados primordialmente para propósitos domésticos en el exterior e interior de residencias, durante las horas que comprende el periodo nocturno. Tampoco se podrá operar o permitir la operación de tal equipo de motor

en cualquier momento, de tal forma que viole las disposiciones de este Reglamento.

12. Venta por pregono

Ninguna persona venderá o permitirá la venta de cualquier producto pregonando en cualquier área, mediante el uso de sistemas de amplificación, de forma que la emisión de sonidos exceda los niveles máximos permisibles especificados en este Reglamento. Además, queda prohibida la venta por pregono durante el periodo nocturno.

13. Vibración

Ninguna persona operará o permitirá la operación de cualquier artefacto que genere vibraciones causadas por ondas sonoras o presión de sonido que puedan percibirse sin instrumentos, o que esté sobre los límites de percepción de una persona, en o más allá de los límites de cualquier propiedad contigua a la fuente originadora.

- B. Zona de Tranquilidad – Ninguna persona emitirá o permitirá la emisión de cualquier ruido innecesario, inesperado o inusitado, en violación a este Reglamento, en zonas donde sea necesaria tranquilidad mientras la misma está en uso. El área designada como zona de tranquilidad deberá estar provista de señales y rótulos conspicuos que hayan sido desplegados en calles adyacentes o contiguas, indicando que la misma es una zona de tranquilidad.

REGLA 22-23 – RESERVADAS

PARTE V: CLASIFICACIÓN DE ZONAS Y LOS NIVELES DE EMISIÓN DE SONIDOS ENTRE ZONAS

REGLA 24 – APLICABILIDAD

Esta Parte aplica a la fuente emisora o predio originador de cualquier sonido que pueda cruzar los límites de propiedad y exceder los niveles establecidos en la Tabla I, según medido en la zona receptora apropiada.

REGLA 25 – CLASIFICACIÓN DE ZONAS

A. Zona I: Residencial – Incluye, pero no se limita, a áreas tales como las siguientes:

1. Residencias

- a. permanentes
- b. rurales o campestres
- c. de verano

2. Viviendas comerciales

- a. hoteles y moteles
- b. apartamentos alquilados
- c. parques de casas móviles
- d. campamentos
- e. cabañas
- f. casa de huéspedes
- g. dormitorios estudiantiles

3. Servicios a la comunidad

- a. orfanatos
- b. instituciones correccionales
- c. instituciones de caridad

B. Zona II: Comercial – Incluye, pero no se limita, a áreas tales como:

1. Establecimientos comerciales de alimentos

- a. restaurantes
- b. comedores
- c. cafeterías
- d. heladerías
- e. clubes nocturnos
- f. cafetería al aire libre o rodante
- g. carnicerías
- h. supermercados

2. Estaciones de servicios de vehículos

- a. gasolineras
- b. venta y renta de vehículos de motor

- c. estacionamientos de vehículos públicos y privados
- d. centro de lavado de vehículos de motor
- e. servicios de reparación (hojalatería, pintura y mecánica, electrónica)
- f. servicio de accesorios para vehículos de motor

3. Comerciales

- a. funeraria
- b. clínicas veterinarias
- c. barberías
- d. salones de Belleza
- e. lavanderías
- f. oficinas
- g. farmacias
- h. centros comerciales

4. Recreación y entretenimiento

- a. teatros
- b. estadios
- c. hipódromos
- d. campos de golf
- e. lugares de diversiones y recreación
- f. playas, Ríos, Lagos y Lagunas
- g. plazas públicas
- h. gimnasios
- i. salones de bailes y discotecas

5. Servicios comunales

- a. iglesias
- b. centros culturales
- c. cotos de caza y pesca
- d. bosques estatales o nacionales

C. Zona III: Industrial – Incluye, pero no se limita, a áreas tales como:

1. Establecimientos de carga y descarga

- a. ferreterías
- b. almacenes, madereras, tiendas de ventas al por mayor
- c. terminal de camiones
- d. muelles
- e. depósito de materiales de construcción

f. instalación de desperdicios sólidos no peligrosos o peligrosos

2. Área industrial: propiedades utilizadas en la fabricación de bienes de consumo

- a. minería
- b. industrias livianas y pesadas
- c. petroquímicas
- d. refinerías
- e. extracción y procesamiento de materiales de la corteza terrestre
- f. siderúrgicas
- g. canteras
- h. central termoeléctrica
- i. farmacéuticas
- j. procesamiento agroquímicos
- k. almacenamiento de tanques de gas

3. Agricultura: área utilizada en la producción de cultivos de cosechas y/o crianza de animales

- a. granjas avícolas, conejos, porcinos y apicultura (abejas)
- b. vaquerías
- c. invernaderos
- d. graneros
- e. siembra, cultivo
- f. caballerizas

D. Zona IV: Tranquilidad – Incluye, pero no se limita, a áreas tales como:

- 1. Hospitales
- 2. Clínicas
- 3. Hospitales de salud mental
- 4. Tribunales de justicia
- 5. Asilos de ancianos
- 6. Escuelas
- 7. Guardería o cuidados infantiles

REGLA 26 – LÍMITE DE NIVELES DE SONIDO

Ninguna persona emitirá o permitirá la emisión de cualquier sonido, el cual al cruzar el límite de propiedad del predio originador de sonido, pueda exceder los niveles establecidos en la Tabla I de este Reglamento, según medido en la zona receptora apropiada de acuerdo con las definiciones de este Reglamento.

REGLA 27 – LÍMITES DE NIVELES DE SONIDO PARA AEROGENERADORES O SISTEMAS DE GENERACIÓN DE ENERGÍA EÓLICA

A fin de establecer los límites de sonido para los casos en que la fuente emisora de sonido es un aerogenerador o sistema de generación de energía eólica, según definido en este Reglamento, se aplicará la Tabla I con los siguientes ajustes:

- A. Cuando la fuente emisora es un aerogenerador o sistema de generación de energía eólica y la zona receptora es una Zona I (residencial), para el periodo nocturno con un nivel de sonido establecido de 50 dB(A), se realizará el ajuste de añadir 5 dB(A), a fin de que el nivel de sonido en estos casos sea de 55 dB(A).
- B. Cuando la fuente emisora es un aerogenerador o sistema de generación de energía eólica y la zona receptora es una Zona IV (tranquilidad) para el periodo nocturno con un nivel de sonido establecido de 50 dB(A), se realizará el ajuste de añadir 5 dB(A), a fin de que el nivel de sonido en estos casos sea de 55 dB(A).

TABLA I
LÍMITE DE NIVELES DE SONIDO
dB(A)

Nivel de Sonido Excedido en 10 % del Periodo de Medición (L₁₀)

FUENTE EMISORA	ZONAS RECEPTORAS							
	Zona I (Residencial)		Zona II (Comercial)		Zona III (Industrial)		Zona IV (Tranquilidad)	
	D	N	D	N	D	N	D	N
Zona I (Residencial)	60	50	65	55	70	60	55	50
Zona II (Comercial)	65	50	70	60	75	65	55	50
Zona III (Industrial)	65	50	70	65	75	75	55	50
Zona IV (Tranquilidad)	65	50	70	65	75	75	55	50

Nota: "D" implica el periodo diurno y "N" implica el periodo nocturno.

REGLA 28 – MONITOREO

- A. A los únicos fines de orientar sobre la reglamentación de la JCA a una potencial fuente de ruidos que se presume podría emitir ruidos en violación a este Reglamento, personal de la JCA podrá requerir el encendido de la fuente, siempre y cuando la misma esté instalada o construida. Dicho encendido se solicitará con el fin de evaluar los niveles de sonido que genera la fuente. De no estar en cumplimiento con este Reglamento, la JCA podrá emitir una Notificación de Cortesía apercibiéndole de las violaciones a las que se expone de encontrarse operando la fuente.
- B. La JCA podrá requerir de cualquier predio originador de sonido o fuente emisora de ruido, que instale, opere y mantenga un equipo de monitoreo, así como la preparación y radicación de informes sobre la misma.

REGLA 29 – EXCEPCIONES A LAS PROHIBICIONES

A. Durante el periodo diurno

Las prohibiciones establecidas en esta Regla aplicarán a las fuentes emisoras o predio originador de cualquier sonido que pueda cruzar los límites de la propiedad. Las siguientes acciones, cuando se lleven a cabo durante el periodo diurno (7:00 a.m. a 10:00 p.m.), estarán exentas de los requisitos establecidos en este Reglamento:

1. los sonidos emitidos por los proyectos temporeros para la reparación y mantenimiento de hogares y sus dependencias,
2. los sonidos emitidos durante la instalación y reparación de servicios públicos esenciales, y
3. los sonidos emitidos por un disparo de armas livianas de fuego en polígonos de tiro autorizados.

B. Emergencias

No se considerará contaminación por ruido aquel sonido que, generado en exceso de los niveles autorizados en este Reglamento, sea realizado al efectuarse un trabajo de emergencia, según definido en este Reglamento, para proteger la salud, seguridad o bienestar inmediato de la comunidad o individuos, o restauración de la propiedad como medida de seguridad luego de un desastre. Nada de lo contenido en este inciso se entenderá como que permite al personal de emergencia, policías, bomberos o conductores de

ambulancias y otros similares a producir ruidos durante el cumplimiento de sus deberes cuando tales ruidos sean claramente innecesarios.

C. Excepciones generales

Las siguientes situaciones se considerarán como excepciones adicionales a la prohibición de ruidos, según definido en este Reglamento:

1. los sonidos emitidos por artefactos para la prevención de accidentes;
2. los sonidos emitidos por asambleas, actos públicos y paradas no rutinarias;
3. los sonidos emitidos por el disparo de armas livianas de fuego durante la temporada de caza siempre que se produzcan en áreas designadas para esos fines;
4. los sonidos emitidos por las calderas de refinerías de petróleo y las plantas generatrices de electricidad durante el encendido de esas calderas;
5. los sonidos emitidos por campanas, campanarios y/o carillones que se extienden hasta quince (15) minutos;
6. el sonido emitido por la voz humana no amplificada;
7. el sonido emitido por los animales;
8. el sonido emitido por el encendido de plantas de emergencia como parte del proceso de calentamiento, siempre que no exceda los diez (10) minutos; y
9. el sonido emitido por los aeroplanos, ya que el mismo está regulado por la Ley Federal de la Administración Federal de Aviación (Federal Aviation Administration) y las normas de ruido establecidas por la Agencia Federal de Protección Ambiental (*Environmental Protection Agency*) para la manufactura de nuevos productos.

D. La mejor tecnología de control

Nada de lo contenido en esta sección se entenderá como que impedirá a la JCA requerir la instalación de la mejor tecnología de control de ruido disponible en el mercado para aquellas actividades que se declaran exentas de las disposiciones de este Reglamento.

REGLA 30 – CONSEJO ASESOR PARA ASUNTOS RELIGIOSOS

El Director Ejecutivo de la JCA constituirá un Consejo Asesor sobre Asuntos Religiosos para asesorar a la JCA en el establecimiento de la política pública ambiental que de alguna manera incida en el derecho constitucional de libre culto que les asiste a las instituciones religiosas en Puerto Rico. Este Consejo Asesor estará compuesto, entre otros, por líderes de organizaciones religiosas debidamente establecidas en Puerto Rico. Dicho Consejo Asesor establecerá su organización interna.

REGLA 31 – CRITERIOS PARA LA TOMA DE MEDICIONES

Los siguientes criterios serán utilizados para identificar condiciones que requieren la mitigación de ruidos relacionados al tránsito en las vías públicas, siempre que éstos sean la fuente emisora más prominente. Esta evaluación requiere la determinación del nivel equivalente, L_{eq} 1hr (1HL), correspondiente a la hora del día o de la noche en que se registra el mayor impacto de ruido, según se describe en la Tabla II.

TABLA II
CRITERIOS PARA LA TOMA DE MEDICIONES

CATEGORÍA	1HL	DESCRIPCIÓN DE USOS Y ACTIVIDADES
A	57 dBA (exterior)	Lugares que requieren tranquilidad excepcional y preservación del ambiente
B	67 dBA (exterior)	Viviendas, hoteles, parques, iglesias, escuelas, bibliotecas, hospitales
C	72 dBA (exterior)	Desarrollos no incluidos en A y B, y comercios e industrias
D	(No hay límites establecidos)	Tierras no desarrolladas
E	52 dBA (interior)	Viviendas, hoteles, edificios públicos, iglesias, escuelas, bibliotecas, hospitales, auditorios, edificios comerciales

Estos criterios son cónsonos con las recomendaciones de la Administración Federal de Carreteras (*Federal Highway Administration*). Como los límites indicados no representan condiciones normales aceptables, se recomienda en cada caso la implantación de mitigación de ruidos que provean atenuación mínima del orden de 10 dB(A).

REGLA 32-33- RESERVADAS

PARTE VI: VALORACIÓN DE LOS NIVELES SONOROS

REGLA 34 – APLICABILIDAD

Esta Parte aplicará a todo procedimiento en el que se valorará el nivel sonoro, incluyendo el equipo utilizado.

REGLA 35 – CONSIDERACIONES GENERALES SOBRE EQUIPO SONOMÉTRICO

- A. El sonómetro deberá cumplir con las normas de la *American National Standards Institute* para instrumentos Tipo I o Tipo II, las cuales están disponibles en la Biblioteca de la JCA.
- B. El sonómetro tiene que estar en total funcionamiento y deberá tener baterías con la carga suficiente para evitar que el aparato indique necesidad de reemplazo de baterías durante una medición.
- C. El sonómetro tiene que ser verificado en su calibración antes y después de cada medición sonométrica.

REGLA 36 – PROTOCOLO PARA MEDICIONES SONOMÉTRICAS

- A. Se utilizará un sonómetro para determinar el nivel de sonido L_{10} . Se determinará el valor de L_{10} registrado en un intervalo no menor de treinta (30) minutos de duración. Deberá considerarse si la fuente emisora opera el mínimo de tres (3) minutos, que es el nivel de sonido correspondiente al L_{10} del periodo de medición. Se podrán tomar muestras adicionales para asegurarse que dichas medidas son representativas de las emisiones de la fuente, según medidas en la zona receptora correspondiente.
- B. Se empleará la escala de ponderación de frecuencias A ("A-weighting") en todas las mediciones. Los niveles de sonido se indicarán en dB(A).

- C. La respuesta del detector del sonómetro ("response") se colocará en la posición de integración rápida ("fast") y si las oscilaciones de la lectura fueran superiores a 4 ó 5 dB(A), se cambiará a respuesta lenta ("slow").

REGLA 37 – RUIDO DE FONDO

A. Consideraciones

1. El ruido de fondo no debe "ahogar" la señal que es de interés.
2. El nivel de la señal (fuente emisora) debe ser por lo menos de 3 dB superior al ruido de fondo.
3. Si el nivel de ruido de fondo es 3 dB menos que la fuente generante, no se realizará una medición de precisión del efecto de la fuente sonora.
4. La medición de ruido de fondo se realizará en términos de la estadística L_{spi} , según medido durante un intervalo continuo no menor de tres (3) minutos de duración.
5. Se podrán tomar muestras adicionales del nivel de ruido de fondo para asegurar que las medidas obtenidas son representativas del ambiente acústico existente en el lugar.
6. Si el operador de la fuente causante del ruido no acata la solicitud del funcionario de la JCA para detener el equipo o las actividades ruidosas durante el tiempo requerido para realizar las mediciones de ruido de fondo o el operador de la fuente no se encuentra en la facilidad, o por situaciones de emergencia y/o seguridad no sea posible detener el equipo o las actividades ruidosas, no se incluirá ajuste alguno por ruido de fondo. Bajo estas circunstancias se asumirá que los niveles de ruido observados son causados enteramente por la fuente emisora. Dicho hecho se hará constar como parte del informe realizado.

B. Procedimiento a seguir en condiciones de un nivel de ruido de fondo elevado:

1. Se tomará la medida del nivel de sonido con la fuente de ruido funcionando (L_{sn}).
2. Se tomará la medida del nivel de ruido de fondo con la fuente detenida (L_n).
3. Se calculará la diferencia entre ambas lecturas: ($L_{sn} - L_n$).

C. Procedimiento para medir el nivel sonoro de una fuente emisora bajo condiciones de un ruido de fondo.

1. Medir el nivel de sonido total (L_{s+n}) con la fuente de ruido funcionando, medido según indicado en este Reglamento.
2. Medir L_{10} del nivel de ruido de fondo (L_n) con la fuente apagada, medido según indicado en este Reglamento.
3. Determinar la diferencia entre ambas lecturas ($L_{s+n} - L_n$).
4. Determinar la diferencia entre los niveles de la fuente y el ruido de fondo (L_s).
5. Realizar la corrección correspondiente, según se describe en el siguiente inciso, y comparar dicho nivel corregido con los límites regulatorios correspondientes, según especificados en este Reglamento, a fin de evaluar el cumplimiento con el mismo.

D. Condiciones para calcular la corrección correspondiente a fin de ajustar el nivel de ruido medido en la presencia de ruido de fondo.

1. Si el L_s es menor de 3 dB, el nivel de ruido de fondo es muy alto para una medición precisa del efecto de la fuente sonora.
2. Si el L_s está entre 3 y 10 dB, será necesaria una corrección al nivel de sonido de la fuente.
3. Si el L_s es mayor de 10 dB, no se requiere una corrección al nivel medido de la fuente de ruido.
4. Si el ruido de fondo es despreciable, se puede registrar directamente el nivel de ruido de dicha fuente (L_s) y determinar si cumple o no con el nivel reglamentario.

E. Corrección cuando el ruido de fondo es inferior al límite establecido en este Reglamento.

Cuando el ruido de fondo es inferior al límite establecido en la Tabla I de este Reglamento, es importante realizar la siguiente corrección, de manera que se incluya el efecto del ruido de fondo:

TABLA III
CORRECCIÓN AL NIVEL DE RUIDO DE FONDO

Nivel de ruido de fondo L_n relativo a L_{JCA}	Nivel total permitido
De 0 hasta 3 dB	$L_{JCA} + 3 \text{ dB}$
Mayor de 3 hasta 6 dB	$L_{JCA} + 2 \text{ dB}$
Mayor de 6 hasta 10 dB	$L_{JCA} + 1 \text{ dB}$
Mayor de 10 dB	$L_{JCA} + 0 \text{ dB}$

REGLA 38 – CONSIDERACIONES GENERALES SOBRE EL LUGAR DE MEDICIÓN

- A. La medición de nivel sonoro se llevará a cabo en un lugar en que su valor sea más alto y, si fuera preciso, en el momento y situación en que las molestias sean más intensas para los afectados o querellantes.
- B. Las mediciones se tomarán en diferentes puntos en el área exterior del predio receptor, típicamente en las colindancias. En caso de edificios o apartamentos, los balcones y ventanas pueden ser utilizados para estos propósitos. Se utilizarán los valores del nivel sonoro registrados en espacios interiores (habitaciones, pasillos, entre otros), cuando no haya otro espacio adecuado para la realización de la medición.
- C. Los dueños de las fuentes emisoras, ubicadas tanto al aire libre como en establecimientos y locales interiores, facilitarán a los técnicos de la JCA el acceso a sus instalaciones o fuente de emisión de ruidos y pondrán en funcionamiento dichas fuentes emisoras a las distintas velocidades, cargas y marchas que les indique el personal técnico de la JCA. El dueño u operador podrá presenciar el proceso operativo en todos sus detalles.

REGLA 39 – PRECAUCIONES EN LA METODOLOGÍA

A fin de reducir los posibles errores de medición, se adoptarán las siguientes precauciones:

- A. Contra el efecto de pantalla: el técnico se situará en el plano normal (perpendicular) al eje del micrófono y lo más separado del mismo que sea posible, en forma compatible con la lectura del indicador de medida del sonómetro.

- B. Contra el efecto de las reflexiones sonoras: para evitar la influencia de ondas estacionarias o reflejadas, se situará el sonómetro, de ser posible, a más de 1.2 metros (4 pies) de cualquier pared o superficie reflectante. Es importante ilustrar, mediante un dibujo o plano, la colocación del sonómetro con relación a dichas superficies.
- C. Contra el efecto del viento: el técnico, cuando estime que la velocidad del viento es superior a 1.5 metros/segundo (3 mph), empleará una pantalla ("windscreen") contra el viento. Para velocidades superiores a 3 metros/segundos (7 mph), se desistirá de la medición.

REGLA 40 – PROCEDIMIENTO PARA LA REALIZACIÓN DE ESTUDIOS SONOROS

- A. Se realizarán estudios detallados en circunstancias especiales donde se requiera una caracterización exhaustiva de una fuente de ruido con características especiales. Cada estudio será diseñado por personal técnico de la JCA tomando en consideración todos los aspectos reglamentarios.
- B. Cuando existan tonos prominentes o ruidos impulsivos, el nivel máximo permitido quedará medido según

$$L_{JCA} = L_{eq} + K_i + K_t,$$

donde

L_{JCA} es el nivel máximo permitido a la fuente por este Reglamento, excluyendo la influencia del ruido de fondo,

L_{eq} es el nivel equivalente de sonido observado,

K_i es la penalización por ruidos impulsivos ($L_{im} - L_{eq}$) y en el que L_{im} es el nivel máximo de presión observado con detección de "impulsos", y

K_t es la penalización por tonos prominentes.

- C. Para la evaluación de ruidos de impulso, se efectuarán mediciones breves de cinco (5) segundos de duración con el sonómetro en el modo de detección de impulsos "I". De este modo, se determinará la diferencia entre el nivel de los impulsos L_{im} y el valor de L_{eq} correspondiente a dicho intervalo. No se tendrán en cuenta valores de K_i iguales o inferiores a 2dB y la penalización máxima será de 5 dB.

REGLA 41 – MÉTODOS ALTERNOS DE MEDICIÓN

Cualquier persona que solicite autorización para utilizar un método analítico o una prueba alterna a lo establecido en este Reglamento, solicitará y demostrará a satisfacción de la JCA, que el método propuesto es igual o superior al establecido en este Reglamento en términos de precisión, exactitud

y sensibilidad de los procedimientos y equipos utilizados. De igual forma, debe demostrar que el equipo a utilizarse ha sido calibrado y que tal calibración se encuentra vigente.

REGLA 42-43- RESERVADAS

PARTE VII: PLANES DE CUMPLIMIENTO, DISPENSAS Y AUTORIZACIONES DE EMERGENCIA

REGLA 44 – PLANES DE CUMPLIMIENTO

A. Aplicabilidad

Los Planes de Cumplimiento son aplicables a fuentes emisoras o predios originadores de sonido que estén en violación de cualquiera de los requisitos de este Reglamento. La aprobación de los mismos no limita la facultad de la JCA para requerir acciones específicas con relación a tales violaciones. Estos planes no son aplicables a la Parte IV de este Reglamento.

B. Prohibición de operar

Ninguna persona podrá construir, operar o permitir la construcción u operación de una fuente emisora de sonido en violación a cualquier requisito de este Reglamento, a menos que el dueño u operador de la fuente de emisión opere conforme a un Plan de Cumplimiento o Dispensa aprobada por la JCA.

C. Requisitos del Plan de Cumplimiento

El Plan de Cumplimiento será presentado ante la Junta de Gobierno de la JCA y cumplirá con los siguientes requisitos:

1. Deberán ser firmados por el dueño u operador de una fuente emisora de sonido o ruido cuando se haya comenzado una acción para la cual se requiera cumplimiento con los requisitos de este Reglamento.
2. Establecerá acciones de progreso para alcanzar las metas específicas y para la instalación de los controles necesarios mediante la construcción y modificación de su fuente emisora, así como la fecha límite en las que serán alcanzadas estas acciones de progreso.

3. Establecerá fechas límites para alcanzar cumplimiento con cada requisito que esté violando. El tiempo final de cumplimiento para el control de la contaminación por ruido que se requiera para llevar a cabo los objetivos del Plan, será el más corto que pueda lograrse, pero en ningún caso, mayor de noventa (90) días laborables.
4. Notificará, mediante informes periódicos a la JCA, su cumplimiento con las acciones de progreso y las metas específicas.

D. Normas para la aprobación de los Planes de Cumplimiento

1. El solicitante demostrará, a satisfacción de la JCA, que el Plan de Cumplimiento:
 - a. no causará incumplimiento con los requisitos de la Ley sobre Política Pública Ambiental, *supra*;
 - b. establecerá pautas para el cumplimiento final de las metas propuestas tan rápidamente como sea factible;
 - c. establecerá pautas para medir las acciones de progreso y el logro de metas temporales que brindan la protección máxima para la salud humana y el ambiente.
2. La JCA actuará sobre el Plan de Cumplimiento propuesto dentro de un término razonable que no deberá exceder de noventa (90) días laborables.

E. Modificación o revocación de la aprobación de un Plan de Cumplimiento

1. La JCA podrá modificar o revocar un Plan de Cumplimiento previamente aprobado cuando se den las siguientes situaciones:
 - a. cuando sea necesario para la protección de la salud humana y el ambiente;
 - b. cuando exista una condición de emergencia;
 - c. cuando se identifique alguna información que altere el razonamiento seguido en la concesión del Plan de Cumplimiento;
 - d. cuando se proponga un cambio significativo en el el Plan de Cumplimiento aprobado; y

e. cuando la JCA así lo determine necesario.

2. Si la JCA decide denegar la solicitud de modificación o revocación, enviará por escrito al peticionario una denegatoria exponiendo las razones de su decisión de acuerdo a lo establecido en la Ley de Procedimiento Administrativo Uniforme, *supra*, y la Ley sobre Política Pública Ambiental, *supra*.

REGLA 45– DISPENSAS

A. Autorización para Dispensas

La Junta de Gobierno de la JCA podrá dispensar del estricto cumplimiento de los requisitos establecidos en este Reglamento únicamente mediante el trámite establecido en esta Regla.

B. Solicitud de Dispensa

Toda solicitud de dispensa presentada ante la Junta de Gobierno de la JCA incluirá lo siguiente:

1. una descripción de la Regla para la cual se solicita dispensa, exponiendo claramente la naturaleza y alcance de lo que se propone;
2. una exposición por escrito de las razones para la petición de aprobación de la dispensa, e incluirá una explicación de por qué no será factible el cumplimiento;
3. un estudio acústico de los niveles de ruido en los límites de la propiedad;
4. una expresión del término por el cual estará solicitando la dispensa;
5. evidencia de la implementación de la mejor tecnología disponible en el mercado para el cumplimiento con los límites establecidos en este Reglamento; y
6. cualquier otra información que la JCA determine necesaria para evaluar dicha solicitud.

C. Normas para conceder dispensas

La solicitud de dispensa será aprobada solamente si el solicitante demuestra a satisfacción de la Junta de Gobierno de la JCA que ha cumplido con los siguientes requisitos:

1. que la implementación de la mejor tecnología disponible no es suficiente para cumplir con las disposiciones de este Reglamento;
2. que la dispensa no causará impacto adverso significativo sobre la salud humana o el ambiente; y
3. que existen circunstancias especiales que justifiquen la concesión de la dispensa.

D. Acción sobre la solicitud de Dispensa

1. La Junta de Gobierno de la JCA, *motu proprio* o a solicitud de parte debidamente fundamentada, podrá, discrecionalmente, celebrar una vista administrativa previo al otorgamiento de una dispensa, según los requisitos que para ello se disponen en este Reglamento.
2. La Junta de Gobierno de la JCA notificará por escrito al solicitante de la dispensa o la solicitud de vista, si la misma fue concedida o denegada.
3. En la notificación sobre la dispensa de la que habla el inciso anterior, la Junta de Gobierno de la JCA expondrá las razones que tuvo para la acción tomada.

E. Condiciones para la Concesión de Dispensas

Al conceder una dispensa, la Junta de Gobierno de la JCA podrá imponer las condiciones que considere necesarias para la protección de la salud, seguridad y bienestar público.

F. Periodo de Vigencia

1. Una dispensa se mantendrá en vigor por el periodo de tiempo que determine la Junta de Gobierno de la JCA, el cual no podrá exceder de cuatro (4) años. Para gestionar la renovación o extensión de la misma, el dueño u operador del predio originador de sonido deberá radicar una solicitud a tales efectos con por lo menos noventa (90) días de anticipación a la fecha en que la dispensa original expire.
2. Cualquier solicitud de renovación o extensión deberá ser presentada durante el término concedido. Posterior a esa fecha, el solicitante tendrá que presentar una nueva solicitud de dispensa de conformidad con este Reglamento. Dicha renovación, extensión o nueva dispensa no podrá exceder de doce (12) meses de vigencia.

3. A partir de la fecha en que se radique la solicitud de dispensa, renovación o extensión de una dispensa, la Junta de Gobierno de la JCA deberá actuar sobre la misma, de acuerdo a las reglas y reglamentos vigentes.

REGLA 46 – AVISOS PÚBLICOS Y VISTAS PÚBLICAS PARA EL TRÁMITE DE LAS DISPENSAS

A. Avisos Públicos

1. Todo aviso público relacionado con un asunto pendiente ante la JCA bajo este Reglamento, especificará la fecha, hora y lugar donde los documentos estarán disponibles para inspección pública. Estos documentos incluirán cualquier determinación preliminar de la JCA.
2. Todo aviso público indicará el periodo de tiempo durante el que las personas interesadas podrán someter comentarios escritos o solicitar, de forma fundamentada, vistas públicas. El aviso especificará la fecha, hora y el lugar de cada vista pública, así como horario de duración de la vista y término de espera para declararla desierta de no comparecer público.
3. Todo aviso público será publicado por lo menos treinta (30) días antes de que la JCA tome cualquier determinación final con respecto a cualquier asunto pendiente ante su consideración, a menos que por una situación de emergencia la JCA determine que, en el mejor interés público, sea necesario que se haga una determinación final en un periodo de tiempo más corto.
4. El aviso público podrá publicarse en un (1) periódico de circulación general en Puerto Rico o por cualquier otro método que disponga la Junta de Gobierno de la JCA. En los casos en que los avisos públicos sean para considerar una solicitud de dispensa y/o autorización ante la JCA, el solicitante de la misma sufragará cualquier costo relacionado a su publicación, previo a que sea publicado.
5. La JCA podrá publicar avisos adicionales o avisos de cualquier otra índole en la forma que considere apropiada.

B. Vistas Públicas

1. La JCA podrá celebrar, a su discreción, una vista pública sobre el otorgamiento de una dispensa o cualquier otro asunto pendiente ante ella, mediante solicitud debidamente fundamentada por cualquier persona interesada o cuando la JCA determine que la celebración de

una vista pública ayudará a evaluar la situación ante su consideración. La JCA no celebrará vistas públicas sin publicar un aviso notificando la celebración de la misma. Para determinar si se concede la celebración de vistas públicas, la Junta de Gobierno de la JCA tomará en consideración los siguientes factores:

- a. la magnitud y naturaleza de la solicitud y la cuantía de la inversión necesaria;
 - b. el grado de interés de parte del público en la acción a llevarse a cabo; y
 - c. el grado de interés de parte de la JCA y de otras agencias gubernamentales en la acción a llevarse a cabo, entre otros factores relevantes.
2. La Junta de Gobierno de la JCA podrá presidir la vista pública por sí o a través de un panel examinador.
 3. La vista pública deberá iniciarse a la hora indicada en el aviso público y de no haber presente ninguna persona interesada en deponer en la misma, ésta podrá darse por culminada luego de una (1) hora de la hora indicada en el aviso público. El horario de duración de la vista estará incluido en el aviso público.
 4. El registro de deponentes de la vista pública estará disponible para inspección del público en general.

C. Los comentarios recibidos

Todos los comentarios recibidos durante el periodo de participación pública serán evaluados por la JCA al momento de tomar una determinación final sobre el asunto en cuestión, según la Ley sobre Política Pública Ambiental, *supra*, y Ley de Procedimiento Administrativo Uniforme, *supra*.

D. Decisión final

Luego de celebrada una vista pública, la Junta de Gobierno de la JCA preparará una resolución que detalle su decisión final. Esta resolución deberá cumplir con los requisitos de notificación, según dispuestos en la Ley sobre Política Pública Ambiental, *supra*, y Ley de Procedimiento Administrativo Uniforme, *supra*, así como en cualquier otra legislación aplicable.

REGLA 47 – REVOCACIÓN DE PLAN DE CUMPLIMIENTO, DISPENSAS O AUTORIZACIONES

La JCA podrá decretar el cese de operaciones o revocar un Plan de Cumplimiento o dispensa que haya sido encontrado en violación de este Reglamento o de las condiciones del mismo, de acuerdo a la Ley sobre Política Pública Ambiental, *supra*, la Ley de Procedimiento Administrativo Uniforme, *supra*, y el Reglamento de Procedimiento de Vistas Administrativas, *supra*. La Orden de Cese será efectiva hasta tanto la fuente emisora se encuentre en cumplimiento con este Reglamento y así lo disponga la JCA mediante Resolución al respecto en la que ordene el dejar sin efecto dicha Orden o así lo ordene un tribunal con jurisdicción y competencia.

REGLA 48 – AUTORIZACIÓN DE EMERGENCIA

A. Autorización en caso de emergencia

1. Si la Junta de Gobierno de la JCA encuentra que existe un peligro significativo e inminente para la salud humana o el ambiente, podrá expedir una autorización de emergencia para personas o fuentes emisoras no autorizadas.
2. Estas autorizaciones podrán incluir dispensas a reglas específicas de este Reglamento, según se establece en la Regla sobre dispensas.

B. Disposiciones para autorizaciones de emergencias

Las autorizaciones para casos de emergencias cumplirán con los siguientes requisitos:

1. Según las circunstancias, éstas podrán ser verbales o escritas. Si la autorización es verbal, inmediatamente deberá producirse una autorización escrita, la cual se expedirá dentro de un término de cinco (5) días después de concedida la autorización verbal.
2. No tendrán una duración mayor de noventa (90) días.
3. Especificarán claramente la fuente emisora.
4. Incorporarán, hasta el máximo factible que no sea inconsistente con la situación de emergencia, todos los requisitos de este Reglamento.
5. Podrán ser revocadas por la Junta de Gobierno de la JCA en cualquier momento, si se determina que dicha revocación es necesaria para

proteger la salud humana o el ambiente.

GOBIERNO DE PUERTO RICO
OFICINA DEL GOBERNADOR
JUNTA DE CALIDAD AMBIENTAL

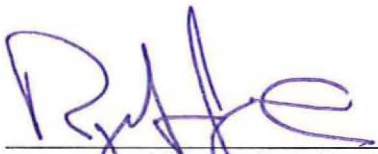
A tenor y de acuerdo con la Ley sobre Política Pública Ambiental, Ley Núm. 416 de 22 de septiembre de 2004, según enmendada, ha sido enmendado por la **Resolución R-11-7-1** de la Junta de Gobierno de la Junta de Calidad Ambiental el

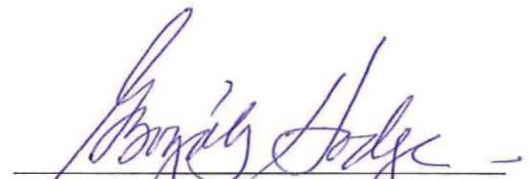
REGLAMENTO PARA EL CONTROL DE LA CONTAMINACIÓN POR RUIDOS

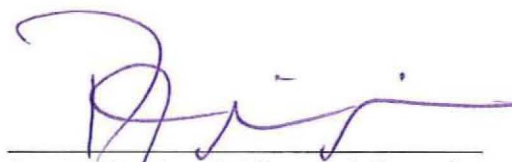
Estas enmiendas al Reglamento establecen las normas y requisitos para el control, disminución o eliminación de ruidos que puedan resultar nocivos a la salud y perturbar el bienestar público. Establece, además, los requisitos para los niveles de emisiones de ruido entre zonas, así como la administración y procedimientos relacionados con la valoración de los niveles sonoros.

Aprobado: 5 de mayo de 2011

En virtud de la Sección 2.8 de la Ley Núm. 170 de 12 de agosto de 1988, según enmendada, conocida como Ley de Procedimiento Administrativo Uniforme, (3 L.P.R.A. sección 2128), este Reglamento entra en vigencia a los treinta (30) días a partir de su radicación en el Departamento de Estado,



Sr. Reynaldo Matos Jiménez
Miembro Asociado

Lda. Blanche Gonzalez Hodge
Miembro Asociado

Lcdo. Pedro J. Nieves Miranda
Presidente

ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR Data is current as of February 10, 2014

Title 24: Housing and Urban Development

PART 51—ENVIRONMENTAL CRITERIA AND STANDARDS

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- §51.300 Purpose.
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 - §51.302 Coverage.
 - §51.303 General policy.
 - §51.304 Responsibilities.
 - §51.305 Implementation.
-

AUTHORITY: 42 U.S.C. 3535(d), unless otherwise noted.

SOURCE: 44 FR 40861, July 12, 1979, unless otherwise noted.

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Subpart A—General Provisions

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§51.1 Purpose.

The Department of Housing and Urban Development is providing program Assistant Secretaries and administrators and field offices with environmental standards, criteria and guidelines for determining project acceptability and necessary mitigating measures to insure that activities assisted by the Department achieve the goal of a suitable living environment.

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§51.2 Authority.

This part implements the Department's responsibilities under: The National Housing Act (12 U.S.C. 1701 *et seq.*); sec. 2 of the Housing Act of 1949 (42 U.S.C. 1441); secs. 2 and 7(d) of the Department of Housing and Urban Development Act (42 U.S.C. 3531 and 3535(d)); the National Environmental Policy Act of 1969 (42 U.S.C. 4321); and the other statutes that are referred to in this part.

[61 FR 13333, Mar. 26, 1996]

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§51.3 Responsibilities.

The Assistant Secretary for Community Planning and Development is responsible for administering HUD's environmental criteria and standards as set forth in this part. The Assistant Secretary for Community Planning and Development may be assisted by HUD officials in implementing the responsibilities established by this part. HUD will identify these HUD officials and their specific responsibilities through FEDERAL REGISTER notice.

[61 FR 13333, Mar. 26, 1996]

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§51.4 Program coverage.

Environmental standards shall apply to all HUD actions except where special provisions and exemptions are contained in each subpart.

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Subpart B—Noise Abatement and Control

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§51.100 Purpose and authority.

(a) It is the purpose of this subpart B to:

(1) Call attention to the threat of noise pollution;

(2) Encourage the control of noise at its source in cooperation with other Federal departments and agencies;

(3) Encourage land use patterns for housing and other noise sensitive urban needs that will provide a suitable separation between them and major noise sources;

(4) Generally prohibit HUD support for new construction of noise sensitive uses on sites having unacceptable noise exposure;

(5) Provide policy on the use of structural and other noise attenuation measures where needed; and

(6) Provide policy to guide implementation of various HUD programs.

(b) *Authority.* Specific authorities for noise abatement and control are contained in the Noise Control Act of 1972, as amended (42 U.S.C. 4901 *et seq.*); and the General Services Administration, Federal Management Circular 75-2; *Compatible Land Uses at Federal Airfields*.

[44 FR 40861, July 12, 1979, as amended at 61 FR 13333, Mar. 26, 1996]

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§51.101 General policy.

(a) It is HUD's general policy to provide minimum national standards applicable to HUD programs to protect citizens against excessive noise in their communities and places of residence.

(1) *Planning assistance.* HUD requires that grantees give adequate consideration to noise exposures and sources of noise as an integral part of the urban environment when HUD assistance is provided for planning purposes, as follows:

(i) Particular emphasis shall be placed on the importance of compatible land use planning in relation to airports, highways and other sources of high noise.

(ii) Applicants shall take into consideration HUD environmental standards impacting the use of land.

(2) *Activities subject to 24 CFR part 58.* (i) Responsible entities under 24 CFR part 58 must take into consideration the noise criteria and standards in the environmental review process and consider ameliorative actions when noise sensitive land development is proposed in noise exposed areas. Responsible entities shall address deviations from the standards in their environmental reviews as required in 24 CFR part 58.

(ii) Where activities are planned in a noisy area, and HUD assistance is contemplated later for housing and/or other noise sensitive activities, the responsible entity risks denial of the HUD assistance unless the HUD standards are met.

(3) *HUD support for new construction.* HUD assistance for the construction of new noise sensitive uses is prohibited generally for projects with unacceptable noise exposures and is discouraged for projects with normally unacceptable noise exposure. (Standards of acceptability are contained in §51.103(c).) This policy applies to all HUD programs providing assistance, subsidy or insurance for housing, manufactured home parks, nursing homes, hospitals, and all programs providing assistance or insurance for land development, redevelopment or any other provision of facilities and services which are directed to making land available for housing or noise sensitive development. The policy does not apply to research demonstration projects which do not result in new construction or reconstruction, flood insurance, interstate land sales registration, or any action or emergency assistance under disaster assistance provisions or appropriations which are provided to save lives, protect property, protect public health and safety, remove debris and wreckage, or assistance that has the effect of restoring facilities substantially as they existed prior to the disaster.

(4) *HUD support for existing construction.* Noise exposure by itself will not result in the denial of HUD support for the resale and purchase of otherwise acceptable existing buildings. However, environmental noise is a marketability factor which HUD will consider in determining the amount of insurance or other assistance that may be given.

(5) *HUD support of modernization and rehabilitation.* For modernization projects located in all noise exposed areas, HUD shall encourage noise attenuation features in alterations. For major or substantial rehabilitation projects in the Normally Unacceptable and Unacceptable noise zones, HUD actively shall seek to have project sponsors incorporate noise attenuation features, given the extent and nature of the rehabilitation being undertaken and the level of exterior noise exposure. In Unacceptable noise zones, HUD shall strongly encourage conversion of noise-exposed sites to land uses compatible with the high noise levels.

(6) *Research, guidance and publications.* HUD shall maintain a continuing program designed to provide new knowledge of noise abatement and control to public and private bodies, to develop improved methods for anticipating noise encroachment, to develop noise abatement measures through land use and building construction practices, and to foster better understanding of the consequences of noise. It shall be HUD's policy to issue guidance documents periodically to assist HUD personnel in assigning an acceptability category to projects in accordance with noise exposure standards, in evaluating noise attenuation measures, and in advising local agencies about noise abatement strategies. The guidance documents shall be updated periodically in accordance with advances in the state-of-the-art.

(7) *Construction equipment, building equipment and appliances.* HUD shall encourage the use of quieter construction equipment and methods in population centers, the use of quieter equipment and appliances in buildings, and the use of appropriate noise abatement techniques in the design of residential structures with potential noise problems.

(8) *Exterior noise goals.* It is a HUD goal that exterior noise levels do not exceed a day-night average sound level of 55 decibels. This level is recommended by the Environmental Protection Agency as a goal for outdoors in residential areas. The levels recommended by EPA are not standards and do not take into account cost or feasibility. For the purposes of this regulation and to meet other program objectives, sites with a day-night average sound level of 65 and below are acceptable and are allowable (see Standards in §51.103(c)).

(9) *Interior noise goals.* It is a HUD goal that the interior auditory environment shall not exceed a day-night average sound level of 45 decibels. Attenuation measures to meet these interior goals shall be employed where feasible. Emphasis shall be given to noise sensitive interior spaces such as bedrooms. Minimum attenuation requirements are prescribed in §51.104(a).

(10) *Acoustical privacy in multifamily buildings.* HUD shall require the use of building design and acoustical treatment to afford acoustical privacy in multifamily buildings pursuant to requirements of the Minimum Property Standards.

[44 FR 40861, July 12, 1979, as amended at 50 FR 9268, Mar. 7, 1985; 61 FR 13333, Mar. 26, 1996]

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§51.102 Responsibilities.

(a) *Surveillance of noise problem areas.* Appropriate field staff shall maintain surveillance of potential noise problem areas and advise local officials, developers, and planning groups of the unacceptability of sites because of noise exposure at the earliest possible time in the decision process. Every attempt shall be made to insure that applicants' site choices are consistent with the policy and standards contained herein.

(b) *Notice to applicants.* At the earliest possible stage, HUD program staff shall:

(1) Determine the suitability of the acoustical environment of proposed projects;

(2) Notify applicants of any adverse or questionable situations; and

(3) Assure that prospective applicants are apprised of the standards contained herein so that future site choices will be consistent with these standards.

(c) *Interdepartmental coordination.* HUD shall foster appropriate coordination between field offices and other departments and agencies, particularly the Environmental Protection Agency, the Department of Transportation, Department of Defense representatives, and the Department of Veterans Affairs. HUD staff shall utilize the acceptability standards in commenting on the prospective impacts of transportation facilities and other noise generators in the Environmental Impact Statement review process.

[44 FR 40861, July 12, 1979, as amended at 54 FR 39525, Sept. 27, 1989; 61 FR 13333, Mar. 26, 1996]

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§51.103 Criteria and standards.

These standards apply to all programs as indicated in §51.101.

(a) *Measure of external noise environments.* The magnitude of the external noise environment at a site is determined by the value of the day-night average sound level produced as the result of the accumulation of noise from all sources contributing to the external noise environment at the site. Day-night average sound level, abbreviated as DNL and symbolized as L_{dn} , is the 24-hour average sound level, in decibels, obtained after addition of 10 decibels to sound levels in the night from 10 p.m. to 7 a.m. Mathematical expressions for average sound level and day-night average sound level are stated in the Appendix I to this subpart.

(b) *Loud impulsive sounds.* On an interim basis, when loud impulsive sounds, such as explosions or sonic booms, are experienced at a site, the day-night average sound level produced by the loud impulsive sounds alone shall have 8 decibels added to it in assessing the acceptability of the site (see appendix I to this subpart). Alternatively, the C-weighted day-night average sound level (L_{Cdn}) may be used without the 8 decibel addition, as indicated in §51.106(a)(3). Methods for assessing the contribution of loud impulsive sounds to day-night average sound level at a site and mathematical expressions for determining whether a sound is classed as “loud impulsive” are provided in the appendix I to this subpart.

(c) *Exterior standards.* (1) The degree of acceptability of the noise environment at a site is determined by the sound levels external to buildings or other facilities containing noise sensitive uses. The standards shall usually apply at a location 2 meters (6.5 feet) from the building housing noise sensitive activities in the direction of the predominant noise source. Where the building location is undetermined, the standards shall apply 2 meters (6.5 feet) from the building setback line nearest to the predominant noise source. The standards shall also apply at other locations where it is determined that quiet outdoor space is required in an area ancillary to the principal use on the site.

(2) The noise environment inside a building is considered acceptable if: (i) The noise environment external to the building complies with these standards, and (ii) the building is constructed in a manner common to the area or, if of uncommon construction, has at least the equivalent noise attenuation characteristics.

SITE ACCEPTABILITY STANDARDS

	Day-night average sound level (in decibels)	Special approvals and requirements
Acceptable	Not exceeding 65 dB(1)	None.
Normally Unacceptable	Above 65 dB but not exceeding 75 dB	Special Approvals (2)
		Environmental Review (3).

		Attenuation (4).
Unacceptable	Above 75 dB	Special Approvals (2).
		Environmental Review (3).
		Attenuation (5).

Notes: (1) Acceptable threshold may be shifted to 70 dB in special circumstances pursuant to §51.105(a).

(2) See §51.104(b) for requirements.

(3) See §51.104(b) for requirements.

(4) 5 dB additional attenuation required for sites above 65 dB but not exceeding 70 dB and 10 dB additional attenuation required for sites above 70 dB but not exceeding 75 dB. (See §51.104(a).)

(5) Attenuation measures to be submitted to the Assistant Secretary for CPD for approval on a case-by-case basis.

[44 FR 40861, July 12, 1979, as amended at 49 FR 12214, Mar. 29, 1984]

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§51.104 Special requirements.

(a)(1) *Noise attenuation.* Noise attenuation measures are those required in addition to attenuation provided by buildings as commonly constructed in the area, and requiring open windows for ventilation. Measures that reduce external noise at a site shall be used wherever practicable in preference to the incorporation of additional noise attenuation in buildings. Building designs and construction techniques that provide more noise attenuation than typical construction may be employed also to meet the noise attenuation requirements.

(2) *Normally unacceptable noise zones and unacceptable noise zones.* Approvals in Normally Unacceptable Noise Zones require a minimum of 5 decibels additional sound attenuation for buildings having noise-sensitive uses if the day-night average sound level is greater than 65 decibels but does not exceed 70 decibels, or a minimum of 10 decibels of additional sound attenuation if the day-night average sound level is greater than 70 decibels but does not exceed 75 decibels. Noise attenuation measures in Unacceptable Noise Zones require the approval of the Assistant Secretary for Community Planning and Development, or the Certifying Officer for activities subject to 24 CFR part 58. (See §51.104(b)(2).)

(b) *Environmental review requirements.* Environmental reviews shall be conducted pursuant to the requirements of 24 CFR parts 50 and 58, as applicable, or other environmental regulations issued by the Department. These requirements are hereby modified for all projects proposed in the Normally Unacceptable and Unacceptable noise exposure zones as follows:

(1) *Normally unacceptable noise zone.* (i) All projects located in the Normally Unacceptable Noise Zone require a Special Environmental Clearance except an EIS is required for a proposed project located in a largely undeveloped area, or where the HUD action is likely to encourage the establishment of incompatible land use in this noise zone.

(ii) When an EIS is required, the concurrence of the Program Assistant Secretary is also required before a project can be approved. For the purposes of this paragraph, an area will be considered as largely undeveloped unless the area within a 2-mile radius of the project boundary is more than 50 percent developed for urban uses and infrastructure (particularly water and sewers) is available and has capacity to serve the project.

(iii) All other projects in the Normally Unacceptable zone require a Special Environmental Clearance, except where an EIS is required for other reasons pursuant to HUD environmental policies.

(2) *Unacceptable noise zone.* An EIS is required prior to the approval of projects with unacceptable noise exposure. Projects in or partially in an Unacceptable Noise Zone shall be submitted to the Assistant Secretary for Community Planning and Development, or the Certifying Officer for activities subject to 24 CFR part 58, for approval. The Assistant Secretary or the Certifying Officer may waive the EIS requirement in cases where noise is the only environmental issue and no outdoor noise sensitive activity will take place on the site. In such cases, an environmental review shall be made pursuant to the requirements of 24 CFR parts 50 or 58, as appropriate.

[44 FR 40861, July 12, 1979, as amended at 61 FR 13333, Mar. 26, 1996]

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§51.105 Exceptions.

(a) *Flexibility for non-acoustic benefits.* Where it is determined that program objectives cannot be achieved on sites meeting the acceptability standard of 65 decibels, the Acceptable Zone may be shifted to L_{dn} 70 on a case-by-case basis if all the following conditions are satisfied:

(1) The project does not require an Environmental Impact Statement under provisions of §51.104 (b)(1) and noise is the only environmental issue.

(2) The project has received a Special Environmental Clearance and has received the concurrence of the Environmental Clearance Officer.

(3) The project meets other program goals to provide housing in proximity to employment, public facilities and transportation.

(4) The project is in conformance with local goals and maintains the character of the neighborhood.

(5) The project sponsor has set forth reasons, acceptable to HUD, as to why the noise attenuation measures that would normally be required for new construction in the L_{dn} 65 to L_{dn} 70 zone cannot be met.

(6) Other sites which are not exposed to noise above L_{dn} 65 and which meet program objectives are generally not available.

The above factors shall be documented and made part of the project file.

[44 FR 40861, July 12, 1979, as amended at 61 FR 13334, Mar. 26, 1996]

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§51.106 Implementation.

(a) *Use of available data.* HUD field staff shall make maximum use of noise data prepared by others when such data are determined to be current and adequately projected into the future and are in terms of the following:

(1) *Sites in the vicinity of airports.* The noise environment around airports is described sometimes in terms of Noise Exposure Forecasts, abbreviated as NEF or, in the State of California, as Community Noise Equivalent Level, abbreviated as CNEL. The noise environment for sites in the vicinity of airports for which day-night average sound level data are not available may be evaluated from NEF or CNEL analyses using the following conversions to DNL:

$DNL \approx NEF + 35$

$DNL \approx CNEL$

(2) *Sites in the vicinity of highways.* Highway projects receiving Federal aid are subject to noise analyses under the procedures of the Federal Highway Administration. Where such analyses are available they may be used to assess sites subject to the requirements of this standard. The Federal Highway Administration employs two alternate sound level descriptors: (i) The A-weighted sound level not exceeded more than 10 percent of the time for the highway design hour traffic flow, symbolized as L_{10} ; or (ii) the equivalent sound level for the design hour, symbolized as L_{eq} . The day-night average sound level may be estimated from the design hour L_{10} or L_{eq} values by the following relationships, provided heavy trucks do not exceed 10 percent of the total traffic flow in vehicles per 24 hours and the traffic flow between 10 p.m. and 7 a.m. does not exceed 15 percent of the average daily traffic flow in vehicles per 24 hours:

$$DNL \approx L_{10} \text{ (design hour)} - 3 \text{ decibels}$$

$$DNL \approx L_{eq} \text{ (design hour) decibels}$$

Where the auto/truck mix and time of day relationships as stated in this section do not exist, the HUD Noise Assessment Guidelines or other noise analysis shall be used.

(3) *Sites in the vicinity of installations producing loud impulsive sounds.* Certain Department of Defense installations produce loud impulsive sounds from artillery firing and bombing practice ranges. Noise analyses for these facilities sometimes encompass sites that may be subject to the requirements of this standard. Where such analyses are available they may be used on an interim basis to establish the acceptability of sites under this standard. The Department of Defense uses day-night average sound level based on C-weighted sound level, symbolized L_{Cdn} , for the analysis of loud impulsive sounds. Where such analyses are provided, the 8 decibel addition specified in §51.103(b), is not required, and the same numerical values of day-night average sound level used on an interim basis to determine site suitability for non-impulsive sounds apply to the L_{Cdn} .

(4) *Use of areawide acoustical data.* HUD encourages the preparation and use of areawide acoustical information, such as noise contours for airports. Where such new or revised contours become available for airports (civil or military) and military installations they shall first be referred to the HUD State Office (Environmental Officer) for review, evaluation and decision on appropriateness for use by HUD. The HUD State Office shall submit revised contours to the Assistant Secretary for Community Planning and Development for review, evaluation and decision whenever the area affected is changed by 20 percent or more, or whenever it is determined that the new contours will have a significant effect on HUD programs, or whenever the contours are not provided in a methodology acceptable under §51.106(a)(1) or in other cases where the HUD State Office determines that Headquarters review is warranted. For other areawide acoustical data, review is required only where existing areawide data are being utilized and where such data have been changed to reflect changes in the measurement methodology or underlying noise source assumptions. Requests for determination on usage of new or revised areawide data shall include the following:

(i) Maps showing old, if applicable, and new noise contours, along with brief description of data source and methodology.

(ii) Impact on existing and prospective urbanized areas and on development activity.

(iii) Impact on HUD-assisted projects currently in processing.

(iv) Impact on future HUD program activity. Where a field office has determined that immediate approval of new areawide data is necessary and warranted in limited geographic areas, the request for approval should state the circumstances warranting such approval. Actions on proposed projects shall not be undertaken while new areawide noise data are being considered for HUD use except where the proposed location is affected in the same manner under both the old and new noise data.

(b) *Site assessments.* Compliance with the standards contained in §51.103(c) shall, where necessary, be determined using noise assessment guidelines, handbooks, technical documents and procedures issued by the Department.

(c) *Variations in site noise levels.* In many instances the noise environment will vary across a site, with portions of the site being in an Acceptable noise environment and other portions in a Normally Unacceptable noise environment. The standards in §51.103(c) shall apply to the portions of a building or buildings used for residential purposes and for ancillary noise sensitive open spaces.

(d) *Noise measurements.* Where noise assessments result in a finding that the site is borderline or questionable, or is controversial, noise measurements may be performed. Where it is determined that noise measurements are required, such measurements will be conducted in accordance with methods and measurement criteria established by the Department. Locations for noise measurements will depend on the location of noise sensitive uses that are nearest to the predominant noise source (see §51.103(c)).

(e) *Projections of noise exposure.* In addition to assessing existing exposure, future conditions should be projected. To the extent possible, noise exposure shall be projected to be representative of conditions that are expected to exist at a time at least 10 years beyond the date of the project or action under review.

(f) *Reduction of site noise by use of berms and/or barriers.* If it is determined by adequate analysis that a berm and/or barrier will reduce noise at a housing site, and if the barrier is existing or there are assurances that it will be in place prior to occupancy, the environmental noise analysis for the site may reflect the benefits afforded by the berm and/or barrier. In the environmental review process under §51.104(b), the location height and design of the berm and/or barrier shall be evaluated to determine its effectiveness, and impact on design and aesthetic quality, circulation and other environmental factors.

[44 FR 40861, July 12, 1979, as amended at 61 FR 13334, Mar. 26, 1996]

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Appendix I to Subpart B of Part 51—Definition of Acoustical Quantities

1. *Sound Level.* The quantity in decibels measured with an instrument satisfying requirements of American National Standard Specification for Type 1 Sound Level Meters S1.4-1971. Fast time-averaging and A-frequency weighting are to be used, unless others are specified. The sound level meter with the A-weighting is progressively less sensitive to sounds of frequency below 1,000 hertz (cycles per second), somewhat as is the ear. With fast time averaging the sound level meter responds particularly to recent sounds almost as quickly as does the ear in judging the loudness of a sound.

2. *Average Sound Level.* Average sound level, in decibels, is the level of the mean-square A-weighted sound pressure during the stated time period, with reference to the square of the standard reference sound pressure of 20 micropascals.

Day-night average sound level, abbreviated as DNL, and symbolized mathematically as L_{dn} is defined as:

$$L_{dn} = 10 \log_{10} \left[\frac{1}{86400} \left(\int_{0000}^{0000} 10^{[L_A(t)+10]/10} dt + \int_{0000}^{2200} 10^{L_A(t)/10} dt + \int_{2200}^{2400} 10^{[L_A(t)+10]/10} dt \right) \right]$$

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Time t is in seconds, so the limits shown in hours and minutes are actually interpreted in seconds. $L_A(t)$ is the time varying value of A-weighted sound level, the quantity in decibels measured by an instrument satisfying requirements of American National Standard Specification for Type 1 Sound Level Meters S1.4-1971.

3. *Loud Impulsive Sounds.* When loud impulsive sounds such as sonic booms or explosions are anticipated contributors to the noise environment at a site, the contribution to day-night average sound level produced by the loud impulsive sounds shall have 8 decibels added to it in assessing the acceptability of a site.

A loud impulsive sound is defined for the purpose of this regulation as one for which:

(i) The sound is definable as a discrete event wherein the sound level increases to a maximum and then decreases in a total time interval of approximately one second or less to the ambient background level that exists without the sound; and

(ii) The maximum sound level (obtained with slow averaging time and A-weighting of a Type 1 sound level meter whose characteristics comply with ANSI S1.4-1971) exceeds the sound level prior to the onset of the event by at least 6 decibels; and

(iii) The maximum sound level obtained with fast averaging time of a sound level meter exceeds the maximum value obtained with slow averaging time by at least 4 decibels.

[44 FR 40861, July 12, 1979; 49 FR 10253, Mar. 20, 1984; 49 FR 12214, Mar. 29, 1984]

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Subpart C—Siting of HUD-Assisted Projects Near Hazardous Operations Handling Conventional Fuels or Chemicals of an Explosive or Flammable Nature

AUTHORITY: 42 U.S.C. 3535(d).

SOURCE: 49 FR 5103, Feb. 10, 1984, unless otherwise noted.

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§51.200 Purpose.

The purpose of this subpart C is to:

(a) Establish safety standards which can be used as a basis for calculating acceptable separation distances (ASD) for HUD-assisted projects from specific, stationary, hazardous operations which store, handle, or process hazardous substances;

(b) Alert those responsible for the siting of HUD-assisted projects to the inherent potential dangers when such projects are located in the vicinity of such hazardous operations;

(c) Provide guidance for identifying those hazardous operations which are most prevalent;

(d) Provide the technical guidance required to evaluate the degree of danger anticipated from explosion and thermal radiation (fire); and

(e) Provide technical guidance required to determine acceptable separation distances from such hazards.

[49 FR 5103, Feb. 10, 1984, as amended at 61 FR 13334, Mar. 26, 1996]

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§51.201 Definitions.

The terms *Department* and *Secretary* are defined in 24 CFR part 5.

Acceptable separation distance (ASD)—means the distance beyond which the explosion or combustion of a hazard is not likely to cause structures or individuals to be subjected to blast overpressure or thermal radiation flux levels in excess of the safety standards in §51.203. The ASD is determined by applying the safety standards established by this subpart C to the guidance set forth in HUD Guidebook, “Siting of HUD-Assisted Projects Near Hazardous Facilities.”

Blast overpressure—means the pressure, in pounds per square inch, in excess of normal atmospheric pressure on the surrounding medium caused by an explosion.

Danger zone—means the land area circumscribed by the radius which delineates the ASD of a given hazard.

Hazard—means any stationary container which stores, handles or processes hazardous substances of an explosive or fire prone nature. The term “hazard” does not include pipelines for the transmission of hazardous substances, if such pipelines are located underground or comply with applicable Federal, State and local safety standards. Also excepted are: (1) Containers with a capacity of 100 gallons or less when they contain common liquid industrial fuels, such as gasoline, fuel oil, kerosene and crude oil since they generally would pose no danger in terms of thermal radiation of blast overpressure to a project; and (2) facilities which are shielded from a proposed HUD-assisted project by the topography, because these topographic features effectively provide a mitigating measure already in place.

Hazardous substances—means petroleum products (petrochemicals) and chemicals that can produce blast overpressure or thermal radiation levels in excess of the standards set forth in §51.203. A specific list of hazardous substance is found in appendix I to this subpart.

HUD-assisted project—the development, construction, rehabilitation, modernization or conversion with HUD subsidy, grant assistance, loan, loan guarantee, or mortgage insurance, of any project which is intended for residential, institutional, recreational, commercial or industrial use. For purposes of this subpart the terms “rehabilitation” and “modernization” refer only to such repairs and renovation of a building or buildings as will result in an increased number of people being exposed to hazardous operations by increasing residential densities, converting the type of use of a building to habitation, or making a vacant building habitable.

Thermal radiation level—means the emission and propagation of heat energy through space or a material medium, expressed in BTU per square foot per hour (BTU/ft.² hr.).

[49 FR 5103, Feb. 10, 1984, as amended at 61 FR 5204, Feb. 9, 1996; 61 FR 13334, Mar. 26, 1996]

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§51.202 Approval of HUD-assisted projects.

(a) The Department will not approve an application for assistance for a proposed project located at less than the acceptable separation distance from a hazard, as defined in §51.201, unless appropriate mitigating measures, as defined in §51.205, are implemented, or unless mitigating measures are already in place.

(b) In the case of all applications for proposed HUD-assisted projects, the Department shall evaluate projected development plans in the vicinity of these projects to determine whether there are plans to install a hazardous operation in close proximity to the proposed project. If the evaluation shows that such a plan exists, the Department shall not approve assistance for the project unless the Department obtains satisfactory assurances that adequate mitigating measures will be taken when the hazardous operation is installed.

[49 FR 5103, Feb. 10, 1984, as amended at 61 FR 13334, Mar. 26, 1996]

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§51.203 Safety standards.

The following standards shall be used in determining the acceptable separation distance of a proposed HUD-assisted project from a hazard:

(a) *Thermal Radiation Safety Standard.* Projects shall be located so that:

(1) The allowable thermal radiation flux level at the building shall not exceed 10,000 BTU/sq. ft. per hr.;

(2) The allowable thermal radiation flux level for outdoor, unprotected facilities or areas of congregation shall not exceed 450 BTU/sq. ft. per hour.

(b) *Blast Overpressure Safety Standard.* Projects shall be located so that the maximum allowable blast overpressure at both buildings and outdoor, unprotected facilities or areas shall not exceed 0.5 psi.

(c) If a hazardous substance constitutes both a thermal radiation and blast overpressure hazard, the ASD for each hazard shall be calculated, and the larger of the two ASDs shall be used to determine compliance with this subpart.

(d) Background information on the standards and the logarithmic thermal radiation and blast overpressure charts that provide assistance in determining acceptable separation distances are contained in appendix II to this subpart C.

[49 FR 5103, Feb. 10, 1984, as amended at 61 FR 13334, Mar. 26, 1996]

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§51.204 HUD-assisted hazardous facilities.

In reviewing applications for proposed HUD-assisted projects involving the installation of hazardous facilities, the Department shall ensure that such hazardous facilities are located at an acceptable separation distance from residences and from any other facility or area where people may congregate or be present. The mitigating measures listed in §51.205 may be taken into account in determining compliance with this section.

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§51.205 Mitigating measures.

Application of the standards for determining an Acceptable Separation Distance (ASD) for a HUD-assisted project from a potential hazard of an explosion or fire prone nature is predicated on level topography with no intervening object(s) between the hazard and the project. Application of the standards can be eliminated or modified if:

(a) The nature of the topography shields the proposed project from the hazard.

(b) An existing permanent fire resistant structure of adequate size and strength will shield the proposed project from the hazard.

(c) A barrier is constructed surrounding the hazard, at the site of the project, or in between the potential hazard and the proposed project.

(d) The structure and outdoor areas used by people are designed to withstand blast overpressure and thermal radiation anticipated from the potential hazard (e.g., the project is of masonry and steel or reinforced concrete and steel construction).

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§51.206 Implementation.

This subpart C shall be implemented for each proposed HUD-assisted project by the HUD approving official or responsible entity responsible for review of the project. The implementation procedure will be part of the environmental review process in accordance with the procedures set forth in 24 CFR parts 50 and 58.

[61 FR 13334, Mar. 26, 1996]

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§51.207 Special circumstances.

The Secretary or the Secretary's designee may, on a case-by-case basis, when circumstances warrant, require the application of this subpart C with respect to a substance not listed in appendix I to this subpart C that would create thermal or overpressure effect in excess of that listed in §51.203.

[61 FR 13334, Mar. 26, 1996]

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§51.208 Reservation of administrative and legal rights.

Publication of these standards does not constitute a waiver of any right: (a) Of HUD to disapprove a project proposal if the siting is too close to a potential hazard not covered by this subpart, and (b) of HUD or any person or other entity to seek to abate or to collect damages occasioned by a nuisance, whether or not covered by the subpart.

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Appendix I to Subpart C of Part 51—Specific Hazardous Substances

The following is a list of specific petroleum products and chemicals defined to be hazardous substances under §51.201.

HAZARDOUS LIQUIDS

Acetic Acid	Ethyl Benzene
Acetic Anhydride	Ethyl Dichloride
Acetone	Ethyl Ether
Acrylonitrile	Gasoline
Amyl Acetate	Heptane
Amyl Alcohol	Hexane
Benzene	Isobutyl Acetate
Butyl Acetate	Isobutyl Alcohol
Butyl Acrylate	Isopropyl Acetate
Butyl Alcohol	Isopropyl Alcohol
Carbon Bisulfide	Jet Fuel and Kerosene
Carbon Disulfide	Methyl Alcohol
Cellosolve	Methyl Amyl Alcohol
Cresols	Methyl Cellosolve
Crude Oil (Petroleum)	Methyl Ethyl Ketone
Cumene	Naptha
Cyclohexane	Pentane
No. 2 Diesel Fuel	Propylene Oxide
Ethyl Acetate	Toluene
Ethyl Acrylate	Vinyl Acetate
Ethyl Alcohol	Xylene

HAZARDOUS GASES

Acetaldehyde

Hydrogen

Butadiene	Liquefied Natural Gas (LNG)
Butane	Liquefied Petroleum Gas (LPG)
Ethene	Propane
Ethylene	Propylene
Ethylene Oxide	Vinyl Chloride

(Primary Source: "Urban Development Siting with respect to Hazardous Commercial/Industrial Facilities," by Rolf Jensen and Associates, Inc., April 1982)

[49 FR 5105, Feb. 10, 1984; 49 FR 12214, Mar. 29, 1984]

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Appendix II to Subpart C of Part 51—Development of Standards; Calculation Methods

I. Background Information Concerning the Standards

(a) Thermal Radiation:

(1) *Introduction.* Flammable products stored in above ground containers represent a definite, potential threat to human life and structures in the event of fire. The resulting fireball emits thermal radiation which is absorbed by the surroundings. Combustible structures, such as wooden houses, may be ignited by the thermal radiation being emitted. The radiation can cause severe burn, injuries and even death to exposed persons some distance away from the site of the fire.

(2) *Criteria for Acceptable Separation Distance (ASD).* Wooden buildings, window drapes and trees generally ignite spontaneously when exposed for a relatively long period of time to thermal radiation levels of approximately 10,000 Btu/hr. sq. ft. It will take 15 to 20 minutes for a building to ignite at that degree of thermal intensity. Since the reasonable response time for fire fighting units in urbanized areas is approximately five to ten minutes, a standard of 10,000 BTU/hr. sq. ft. is considered an acceptable level of thermal radiation for buildings.

People in outdoor areas exposed to a thermal radiation flux level of approximately 1,500 Btu/ft² hr will suffer intolerable pain after 15 seconds. Longer exposure causes blistering, permanent skin damage, and even death. Since it is assumed that children and the elderly could not take refuge behind walls or run away from the thermal effect of the fire within the 15 seconds before skin blistering occurs, unprotected (outdoor) areas, such as playgrounds, parks, yards, school grounds, etc., must be placed at such a distance from potential fire locations so that the radiation flux level is well below 1500 Btu/ft² hr. An acceptable flux level, particularly for elderly people and children, is 450 Btu/ft² hr. The skin can be exposed to this degree of thermal radiation for 3 minutes or longer with no serious detrimental effect. The result would be the same as a bad sunburn. Therefore, the standard for areas in which there will be exposed people, e.g. outdoor recreation areas such as playgrounds and parks, is set at 450 Btu/hr. sq. ft. Areas covered also include open space ancillary to residential structures, such as yard areas and vehicle parking areas.

(3) *Acceptable Separation Distance From a Potential Fire Hazard.* This is the actual setback required for the safety of occupied buildings and their inhabitants, and people in open spaces (exposed areas) from a potential fire hazard. The specific distance required for safety from such a hazard depends upon the nature and the volume of the substance. The Technical Guidebook entitled "Urban Development Siting With Respect to Hazardous/Commercial Industrial Facilities," which supplements this regulation, contains the technical guidance required to compute Acceptable Separation Distances (ASD) for those flammable substances most often encountered.

(b) *Blast Overpressure:* The Acceptable Separation Distance (ASD) for people and structures from materials prone to explosion is dependent upon the resultant blast measured in pounds per square inch (psi) overpressure. It has been determined by the military and corroborated by two independent studies conducted for the Department of Housing and Urban Development that 0.5 psi is the acceptable level of blast overpressure for both buildings and occupants, because a frame structure can normally withstand that level of external exertion with no serious structural damage, and it is

unlikely that human beings inside the building would normally suffer any serious injury. Using this as the safety standard for blast overpressure, nomographs have been developed from which an ASD can be determined for a given quantity of hazardous substance. These nomographs are contained in the handbook with detailed instructions on their use.

(c) *Hazard evaluation:* The Acceptable Separation Distances for buildings, which are determined for thermal radiation and blast overpressure, delineate separate identifiable danger zones for each potential accident source. For some materials the fire danger zone will have the greatest radius and cover the largest area, while for others the explosion danger zone will be the greatest. For example, conventional petroleum fuel products stored in unpressurized tanks do not emit blast overpressure of dangerous levels when ignited. In most cases, hazardous substances will be stored in pressurized containers. The resulting blast overpressure will be experienced at a greater distance than the resulting thermal radiation for the standards set in Section 51.203. In any event the hazard requiring the greatest separation distance will prevail in determining the location of HUD-assisted projects.

The standards developed for the protection of people and property are given in the following table.

	Thermal radiation	Blast overpressure
Amount of acceptable exposure allowed for building structures	10,000 BTU/ft ² hr	0.5 psi.
Amount of acceptable exposure allowed for people in open areas	450 BTU/ft ² hr	0.5 psi.

Problem Example

The following example is given as a guide to assist in understanding how the procedures are used to determine an acceptable separation distance. The technical data are found in the HUD Guidebook. Liquid propane is used in the example since it is both an explosion and a fire hazard.

In this hypothetical case a proposed housing project is to be located 850 feet from a 30,000 gallon liquid propane (LPG) tank. The objective is to determine the acceptable separation distance from the LPG tank. Since propane is both explosive and fire prone it will be necessary to determine the ASD for both explosion and for fire. The greatest of the two will govern. There is no dike around the tank in this example.

Nomographs from the technical Guidebook have been reproduced to facilitate the solving of the problem.

ASD For Explosion

Use Figure 1 to determine the acceptable separation distance for explosion.

The graph depicted on Figure 1 is predicated on a blast overpressure of 0.5 psi.

The ASD in feet can be determined by applying the quantity of the hazard (in gallons) to the graph.

In this case locate the 30,000 gallon point on the horizontal axis and draw a vertical line from that point to the intersection with the straight line curve. Then draw a horizontal line from the point where the lines cross to the left vertical axis where the ACCEPTABLE SEPARATION DISTANCE of 660 feet is found.

Therefore the ASD for explosion is 660 feet

Since the proposed project site is located 850 feet from the tank it is located at a safe distance with regards to blast overpressure.

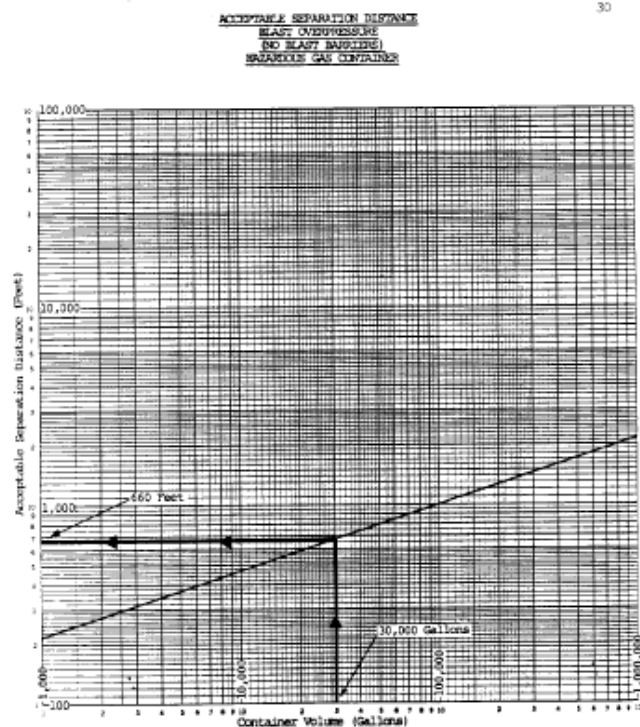


Figure 1

[View or download PDF](#)

ASD For Fire

To determine the ASD for fire it will be necessary to first find the fire width (diameter of the fireball) on Figure 2. Then apply this to Figure 3 to determine the ASD.

Since there are two safety standards for fire: (a) 10,000 BTU/ft²hr. for buildings; and (b) 450 BTU/ft²hr. for people in exposed areas, it will be necessary to determine an ASD for each.

To determine the fire width locate the 30,000 gallon point on the horizontal axis on *Figure 2* and draw a vertical line to the straight line curve. Then draw a horizontal line from the point where the lines cross to the left vertical axis where the FIRE WIDTH is found to be 350 feet.

Now locate the 350 ft. point on the horizontal axis of *Figure 3* and draw a vertical line from that point to curves 1 and 2. Then draw horizontal lines from the points where the lines cross to the left vertical axis where the ACCEPTABLE SEPARATION DISTANCES of 240 feet for buildings and 1,150 feet for exposure to people is found.

Based on this the proposed project site is located at a safe distance from a potential fireball. However, exposed playgrounds or other exposed areas of congregation must be at least 1,150 feet from the tank, or be appropriately shielded from a potential fireball.

(Source: HUD Handbook, "Urban Development Siting With Respect to Hazardous Commercial/Industrial Facilities.")

FIRE WIDTH - UNKNOWN SPILL
HAZARDOUS GAS CONTAINERS
NOT DIED

32

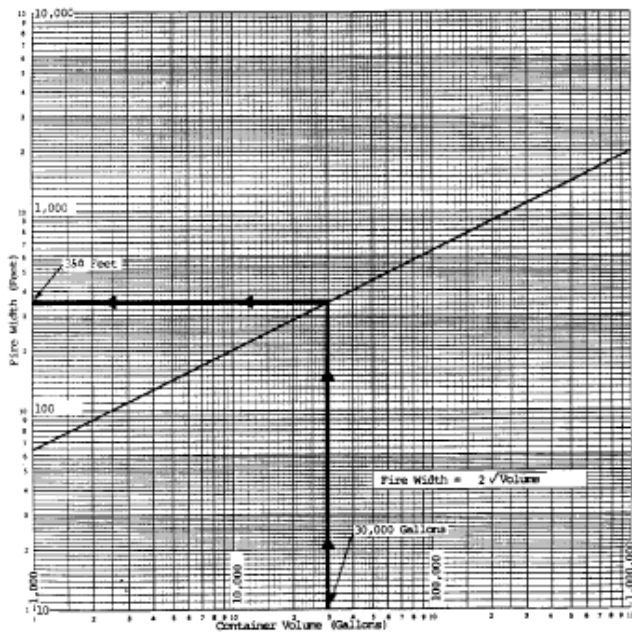


Figure 2

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ACCEPTABLE SEPARATION DISTANCE
HAZARDOUS GAS CONTAINERS
DIED/UNDIED

33

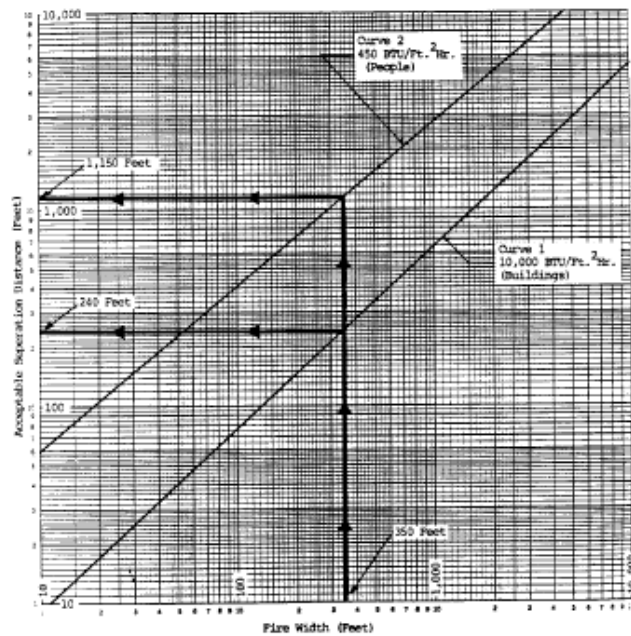


Figure 3

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[49 FR 5105, Feb. 10, 1984; 49 FR 12214, Mar. 29, 1984]

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Subpart D—Siting of HUD Assisted Projects in Runway Clear Zones at Civil Airports and Clear Zones and Accident Potential Zones at Military Airfields

AUTHORITY: Sec. 2, Housing Act of 1949, as amended, 42 U.S.C. 1441, affirmed by sec. 2, HUD Act of 1969, Pub. L. 90-448; sec. 7(d), HUD Act of 1965, 42 U.S.C. 3535(d); OMB, Fed'l Mgmt. Cir. 75-2: Compatible Land Uses At Federal Airfields.

SOURCE: 49 FR 880, Jan. 6, 1984, unless otherwise noted.

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§51.300 Purpose.

It is the purpose of this subpart to promote compatible land uses around civil airports and military airfields by identifying suitable land uses for Runway Clear Zones at civil airports and Clear Zones and Accident Potential Zones at military airfields and by establishing them as standards for providing HUD assistance, subsidy or insurance.

[49 FR 880, Jan. 6, 1984, as amended at 61 FR 13334, Mar. 26, 1996]

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§51.301 Definitions.

For the purposes of this regulation, the following definitions apply:

(a) *Accident Potential Zone*. An area at military airfields which is beyond the Clear Zone. The standards for the Accident Potential Zones are set out in Department of Defense Instruction 4165.57, "Air Installations Compatible Use Zones," November 8, 1977, 32 CFR part 256. There are no Accident Potential Zones at civil airports.

(b) *Airport Operator*. The civilian or military agency, group or individual which exercises control over the operations of the civil airport or military airfield.

(c) *Civil Airport*. An existing commercial service airport as designated in the National Plan of Integrated Airport Systems prepared by the Federal Aviation Administration in accordance with section 504 of the Airport and Airway Improvement Act of 1982.

(d) *Runway Clear Zones and Clear Zones*. Areas immediately beyond the ends of a runway. The standards for Runway Clear Zones for civil airports are established by FAA regulation 14 CFR part 152. The standards for Clear Zones for military airfields are established by DOD Instruction 4165.57, 32 CFR part 256.

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§51.302 Coverage.

(a) These policies apply to HUD programs which provide assistance, subsidy or insurance for construction, land development, community development or redevelopment or any other provision of facilities and services which are designed to make land available for construction. When the HUD assistance, subsidy or insurance is used to make land available for construction rather than for the actual construction, the provision of the HUD assistance, subsidy or insurance shall be dependent upon whether the facility to be built is itself acceptable in accordance with the standards in §51.303.

(b) These policies apply not only to new construction but also to substantial or major modernization and rehabilitation and to any other program which significantly prolongs the physical or economic life of existing facilities or which, in the case of Accident Potential Zones:

(1) Changes the use of the facility so that it becomes one which is no longer acceptable in accordance with the standards contained in §51.303(b);

(2) Significantly increases the density or number of people at the site; or

(3) Introduces explosive, flammable or toxic materials to the area.

(c) Except as noted in §51.303(a)(3), these policies do not apply to HUD programs where the action only involves the purchase, sale or rental of an existing property without significantly prolonging the physical or economic life of the property.

(d) The policies do not apply to research or demonstration projects which do not result in new construction or reconstruction, to interstate land sales registration, or to any action or emergency assistance which is provided to save lives, protect property, protect public health and safety, or remove debris and wreckage.

[49 FR 880, Jan. 6, 1984, as amended at 61 FR 13334, Mar. 26, 1996]

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§51.303 General policy.

It is HUD's general policy to apply standards to prevent incompatible development around civil airports and military airfields.

(a) HUD policy for actions in Runway Clear Zones and Clear Zones.

(1) HUD policy is not to provide any assistance, subsidy or insurance for projects and actions covered by this part except as stated in §51.303(a)(2) below.

(2) If a project proposed for HUD assistance, subsidy or insurance is one which will not be frequently used or occupied by people, HUD policy is to provide assistance, subsidy or insurance only when written assurances are provided to HUD by the airport operator to the effect that there are no plans to purchase the land involved with such facilities as part of a Runway Clear Zone or Clear Zone acquisition program.

(3) Special notification requirements for Runway Clear Zones and Clear Zones. In all cases involving HUD assistance, subsidy, or insurance for the purchase or sale of an existing property in a Runway Clear Zone or Clear Zone, HUD (or the responsible entity or recipient under 24 CFR part 58) shall advise the buyer that the property is in a Runway Clear Zone or Clear Zone, what the implications of such a location are, and that there is a possibility that the property may, at a later date, be acquired by the airport operator. The buyer must sign a statement acknowledging receipt of this information.

(b) HUD policy for actions in Accident Potential Zones at Military Airfields. HUD policy is to discourage the provision of any assistance, subsidy or insurance for projects and actions in the Accident Potential Zones. To be approved, projects must be generally consistent with the recommendations in the *Land Use Compatibility Guidelines For Accident Potential Zones* chart contained in DOD Instruction 4165.57, 32 CFR part 256.

[49 FR 880, Jan. 6, 1984, as amended at 61 FR 13334, Mar. 26, 1996]

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§51.304 Responsibilities.

(a) The following persons have the authority to approve actions in Accident Potential Zones:

(1) For programs subject to environmental review under 24 CFR part 58: the Certifying Officer of the responsible entity as defined in 24 CFR part 58.

(2) For all other HUD programs: the HUD approving official having approval authority for the project.

(b) The following persons have the authority to approve actions in Runway Clear Zones and Clear Zones:

(1) For programs subject to environmental review under 24 CFR part 58: The Certifying Officer of the responsible entity as defined in 24 CFR part 58.

(2) For all other HUD programs: the Program Assistant Secretary.

[61 FR 13335, Mar. 26, 1996]

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§51.305 Implementation.

(a) Projects already approved for assistance. This regulation does not apply to any project approved for assistance prior to the effective date of the regulation whether the project was actually under construction at that date or not.

(b) Acceptable data on Runway Clear Zones, Clear Zones and Accident Potential Zones. The only Runway Clear Zones, Clear Zones and Accident Potential Zones which will be recognized in applying this part are those provided by the airport operators and which for civil airports are defined in accordance with FAA regulations 14 CFR part 152 or for military airfields, DOD Instruction 4165.57, 32 CFR part 256. All data, including changes, related to the dimensions of Runway Clear Zones for civil airports shall be verified with the nearest FAA Airports District Office before use by HUD.

(c) Changes in Runway Clear Zones, Clear Zones, and Accident Potential Zones. If changes in the Runway Clear Zones, Clear Zones or Accident Potential Zones are made, the field offices shall immediately adopt these revised zones for use in reviewing proposed projects.

(d) The decision to approve projects in the Runway Clear Zones, Clear Zones and Accident Potential Zones must be documented as part of the environmental assessment or, when no assessment is required, as part of the project file.

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For questions or comments regarding e-CFR editorial content, features, or design, email ecfr@nara.gov.

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APPENDIX 2: EQUIPMENT DATA CALIBRATION

Meter #1

CALIBRATED CERTIFICATE OF CALIBRATION

BY TRANSQAT

Customer: RAECO RENTS LLC
14241 SOUTH REDWOOD RD
BLDG A, SUITE 060
BLUFFDALE, UT 84065
PO Number: 4357-1



Certificate/SO Number: 17-C9I2Y-20-1 Revision 0

Manufacturer: 3M Company
Model Number: Soundpro SE/DL
Description: Sound Level Meter
Serial Number: BLP070008
ID: NONE

As-Found: In Tolerance
As-Left: In Tolerance

Issue Date: Aug 05, 2020
Calibration Date: Aug 05, 2020
Due Date: Aug 05, 2021

Calibrated To: Manufacturer Specification
Calibration Procedure: 1-AC28066-1

Transcat Calibration Laboratories have been audited and found in compliance with ISO/IEC 17025:2017. Accredited calibrations performed within the Lab's Scope of Accreditation are indicated by the presence of the Accrediting Body's Logo and Certificate Number. Any measurements on an accredited calibration not covered by that Lab's Scope of Accreditation are listed in the notes section of the certificate. SCC, NRC, CLAS or ANAB do not guarantee the accuracy of an individual calibration by accredited laboratories.

Transcat calibrations, as applicable, are performed in compliance with the requirements of the Transcat Quality Manual QAC-P01-000, the customer's Purchase Order and/or Quality Agreement requirements, ISO 9001:2015, ANSI/NCSL Z540.1-1994 (R2002) or NQA-1, as applicable. Complete records of work performed are maintained by Transcat and are available for inspection. Laboratory standards used in the performance of this calibration are listed on this certificate.

Transcat documents the traceability of measurements to the SI units through the National Institute of Standards and Technology (NIST), or the National Research Council of Canada (NRC), or other national measurement institutes (NMI) that are signatories to the CIPM Mutual Recognition Arrangement, or accepted fundamental and/or natural physical constants, or by the use of specified methods, consensus standards or ratio type measurements. Documentation supporting traceability information is available for review upon written request at a Transcat facility. The measured quantity and the measurement uncertainty are required for further dissemination of traceability.

A binary decision rule, utilizing simple acceptance, and simple rejection criteria is used for the determination of compliance. When compliance statements are present, they are reported without factoring in the effects of uncertainty and comply with the guidelines established by ASME B 89.7.3.1-2001 (R2019) as follows:

-The acceptance zone is defined as: less than or equal to the high limit, and/or greater than or equal to the low limit. The rejection zones are defined as greater than the high limit and/or less than the low limit.

-Single measurement results in the acceptance zone are identified as in-tolerance. Single measurement results in the rejection zone are identified as out-of-tolerance (OOT).

-When all measurement results are in the acceptance zone for repeated measurements, for the same characteristic, the test is identified as in-tolerance. For repeated characteristic measurements, a single measurement result in the rejection zone, will cause the test to be identified as out-of-tolerance (OOT).

Uncertainties are reported with a coverage factor $k=2$, providing a level of confidence of approximately 95%. All calibrations have been performed using processes having a TUR of 4:1 or better (3:1 for mass calibrations), unless otherwise noted. The Test Uncertainty Ratio (TUR) is calculated in accordance with NCSL International RP-18. For mass calibrations: Conventional mass referenced to 8.0 g/cm³.

The results in this report relate only to the item calibrated or tested. Recorded calibration data is valid at the time of calibration within the stated uncertainties at the environmental conditions noted. The determination of compliance to the specification is specific to the model/serial no./ID no. referenced above based on the tolerances shown; these tolerances are either the original equipment manufacturers (OEM's) warranted specifications or the client's requested specifications. This certificate may not be reproduced except in full, without the written approval of Transcat. Additional information, if applicable may be included on separate report(s).

As Found/As Left Data

Description	Setpoints	Accuracy	Low Limit	High Limit	As Found / As Left	O O T	TUR
Source Level (A Weight)							
A Weight	114dB	$\pm(1 \text{ dB})$	96.9	98.9	97.3 dB		2.7 : 1
125Hz							
	114dB	$\pm(1 \text{ dB})$	104.4	106.4	105.0 dB		2.7 : 1
250Hz							
	114dB	$\pm(1 \text{ dB})$	109.8	111.8	110.6 dB		2.7 : 1

Date Received: July 31, 2020
Service Level: RC

Certificate - Page 1 of 3
Reprinted on August 12, 2020

Customer Number: 1-628602-000
OPS-F20-013R7 05/29/2020 FP001R7 6/30/2020



TSI INCORPORATED – OCONOMOWOC

1950 Corporate Center Drive, Oconomowoc, WI 53066 USA
tel 651 490 2811 • toll free 800 245 0779 • web www.tsi.com

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An ISO 9001
Registered Company

Certificate of Calibration

Certificate No: 887931 AC300009487

Submitted By: RABCO RENTS LLC
135 WERNICK DR
BENSENVILLE, IL 60106-3366

Serial Number: AC300009487
Customer ID: 5146
Model: AC-300 CALIBRATOR
Test Conditions:
Temperature: 19°C to 29°C
Humidity: 20% to 80%
Barometric Pressure: 890 mbar to 1050 mbar

Date Received: 8/20/2020
Date Issued: 8/25/2020
Valid Until: 8/25/2021

Model Conditions:
As Found: IN TOLERANCE
As Left: IN TOLERANCE

SubAssemblies:

Description:

Serial Number:

Calibrated per Procedure: 057V879

Reference Standard(s):

I.D. Number Device
ST0000558 B&K ENSEMBLE

Last Calibration Date Calibration Due
3/29/2019 3/29/2021

Measurement Uncertainty:

ACOUSTIC +/- 0.19dB FREQUENCY +/- 0.05%
Estimated at 95% Confidence Level (k=2)

Calibrated By:


WILLIAM MALONEY Service Technician 8/25/2020

This report certifies that all calibration equipment used in the test is traceable to NIST, and applies only to the unit identified under equipment above. This report must not be reproduced except in its entirety without the written approval of TSI Incorporated.



APPENDIX 3: NOISE LEVEL MEASUREMENT AND GRAPHS

Session Report

5/28/2021

Information Panel

Name	Monitoring Station #1 Daytime Period
Start Time	5/28/2021 7:01:52 AM
Stop Time	5/28/2021 7:31:22 AM
Device Name	BLP070008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	Located at north side of Brisas de Arroyo project - adjacent to O Street

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
CNEL	1	50.5 dB	L10	1	51.6 dB
L90	1	43.4 dB	LDN	1	50.5 dB
Rtime	1	00:30:30	Takt	1	56.5 dB
Exchange Rate	1	5 dB	Weighting	1	A
Response	1	FAST	Criterion Level	1	45 dB

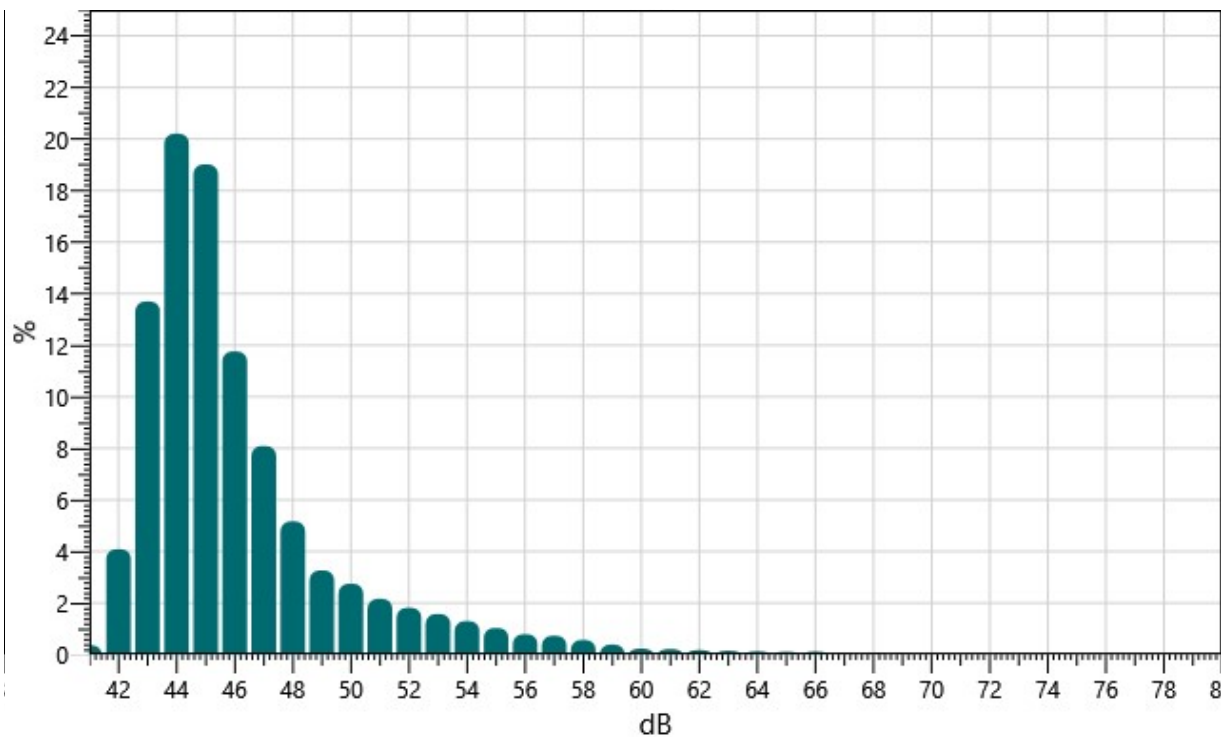
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
41:	0.00	0.00	0.00	0.00	0.02	0.03	0.04	0.08	0.07	0.11	0.36
42:	0.15	0.21	0.25	0.17	0.34	0.38	0.51	0.60	0.70	0.78	4.09
43:	0.90	0.97	1.05	1.23	1.31	1.43	1.51	1.67	1.79	1.82	13.70
44:	1.85	1.98	1.94	2.00	1.90	1.96	1.98	2.17	2.15	2.27	20.20
45:	2.37	2.34	2.36	1.38	2.02	1.87	1.82	1.71	1.62	1.52	19.01
46:	1.42	1.44	1.28	1.29	1.17	1.10	1.06	1.05	1.01	0.95	11.76
47:	0.94	0.94	0.92	0.86	0.83	0.76	0.73	0.74	0.64	0.72	8.09
48:	0.72	0.71	0.62	0.37	0.53	0.48	0.44	0.47	0.40	0.42	5.16
49:	0.39	0.37	0.36	0.38	0.33	0.32	0.28	0.29	0.29	0.25	3.26
50:	0.27	0.27	0.26	0.26	0.28	0.31	0.26	0.28	0.29	0.27	2.75
51:	0.25	0.24	0.25	0.16	0.22	0.21	0.22	0.20	0.23	0.20	2.16
52:	0.19	0.18	0.18	0.23	0.19	0.16	0.18	0.18	0.18	0.15	1.82
53:	0.17	0.16	0.15	0.13	0.16	0.15	0.15	0.16	0.16	0.17	1.57
54:	0.14	0.16	0.13	0.10	0.13	0.13	0.13	0.13	0.12	0.12	1.30

55:	0.13	0.10	0.11	0.11	0.11	0.09	0.10	0.10	0.08	0.11	1.03
56:	0.11	0.10	0.08	0.07	0.09	0.08	0.08	0.06	0.05	0.07	0.79
57:	0.08	0.08	0.08	0.08	0.07	0.09	0.07	0.05	0.05	0.07	0.73
58:	0.06	0.07	0.06	0.07	0.05	0.05	0.05	0.06	0.05	0.05	0.57
59:	0.06	0.05	0.05	0.04	0.03	0.04	0.02	0.03	0.04	0.04	0.39
60:	0.02	0.03	0.03	0.03	0.01	0.02	0.02	0.02	0.02	0.02	0.23
61:	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.22
62:	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.02	0.02	0.02	0.17
63:	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.15
64:	0.02	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.13
65:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.11
66:	0.01	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.12
67:	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.05
68:	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.01	0.05
69:	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.04
70:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
71:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
72:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Statistics Chart

Monitoring Station #1 Daytime Period: Statistics Chart

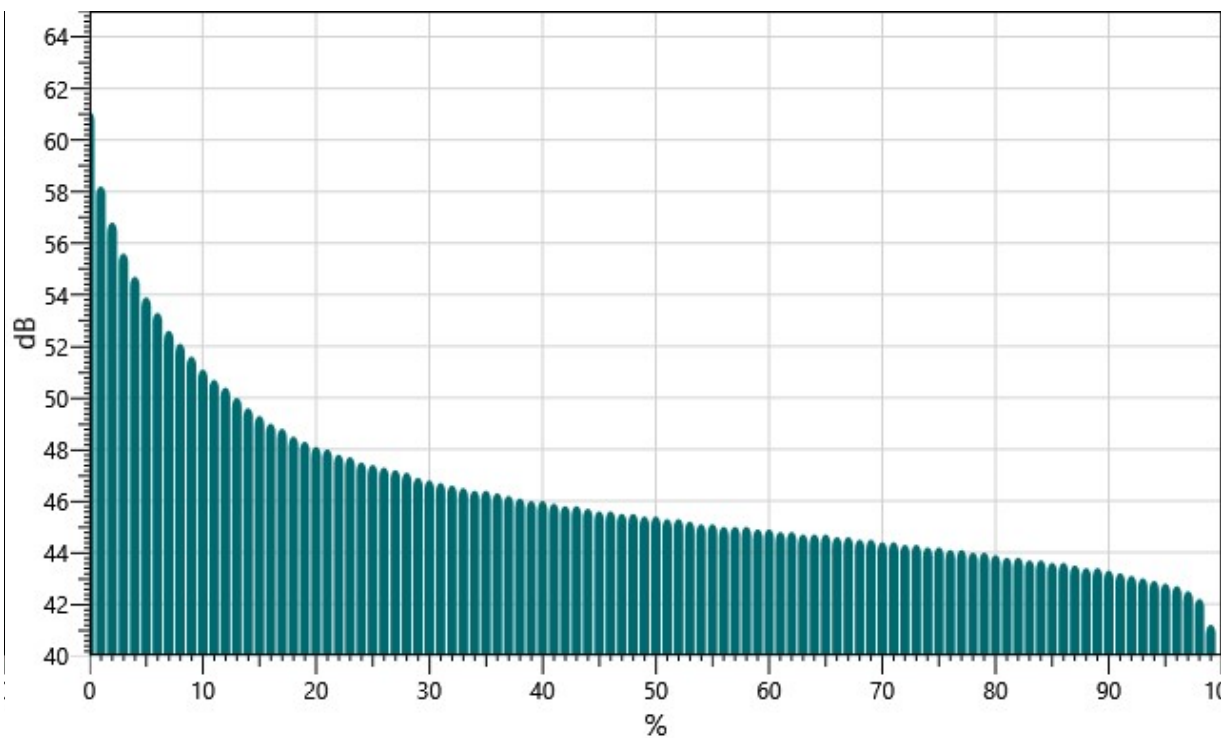


Exceedance Table

	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		61.1	58.2	56.8	55.6	54.7	53.9	53.3	52.6	52.1
10%:	51.6	51.1	50.7	50.4	50.0	49.6	49.3	49.0	48.8	48.5
20%:	48.3	48.1	48.0	47.8	47.7	47.5	47.4	47.3	47.2	47.1
30%:	46.9	46.8	46.7	46.6	46.5	46.4	46.4	46.3	46.2	46.1
40%:	46.0	46.0	45.9	45.8	45.8	45.7	45.6	45.6	45.5	45.5
50%:	45.4	45.4	45.3	45.3	45.2	45.1	45.1	45.0	45.0	45.0
60%:	44.9	44.9	44.8	44.8	44.7	44.7	44.7	44.6	44.6	44.5
70%:	44.5	44.4	44.4	44.3	44.3	44.2	44.2	44.1	44.1	44.0
80%:	44.0	43.9	43.8	43.8	43.7	43.7	43.6	43.6	43.5	43.4
90%:	43.4	43.3	43.2	43.1	43.0	42.9	42.8	42.7	42.5	42.2
100%:	41.2									

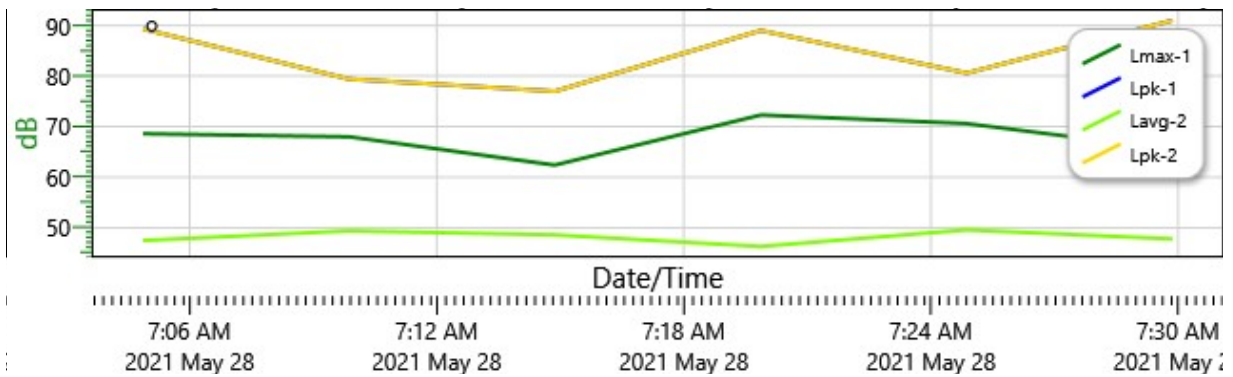
Exceedance Chart

Monitoring Station #1 Daytime Period: Exceedance Chart



Logged Data Chart

Monitoring Station #1 Daytime Period: Logged Data Chart



Session Report

5/28/2021

Information Panel

Name	Monitoring Station #1 Nighttime Period
Start Time	5/28/2021 4:29:47 AM
Stop Time	5/28/2021 4:59:51 AM
Device Name	BLP070008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	Located at north side of Brisas de Arroyo project- adjacent to O Street

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
LDN	1	58.8 dB	L10	1	50.6 dB
Rtime	1	00:30:04	CNEL	1	58.8 dB
Takt	1	56.6 dB	L90	1	41.4 dB
Exchange Rate	1	5 dB	Weighting	1	A
Response	1	FAST	Criterion Level	1	45 dB

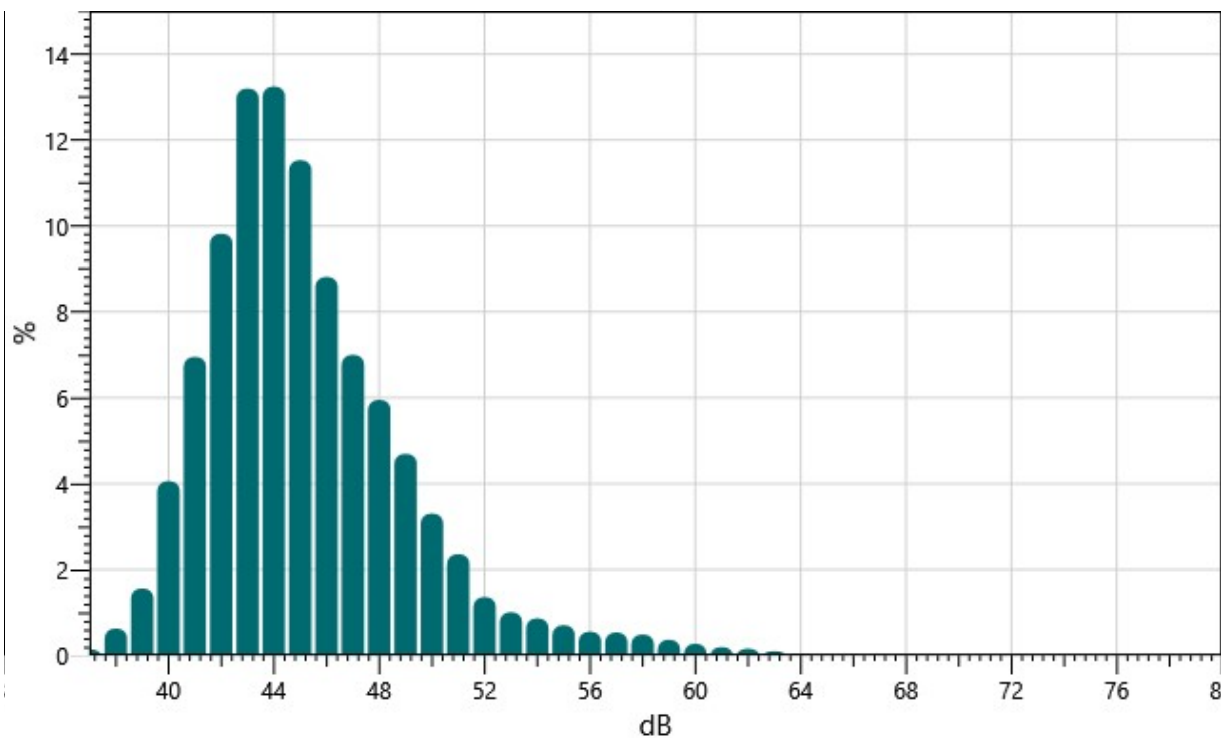
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
37:	0.00	0.00	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.14
38:	0.03	0.03	0.05	0.05	0.08	0.06	0.07	0.08	0.08	0.08	0.63
39:	0.09	0.10	0.07	0.13	0.15	0.16	0.18	0.20	0.24	0.24	1.56
40:	0.28	0.30	0.31	0.35	0.40	0.43	0.46	0.50	0.50	0.52	4.06
41:	0.51	0.52	0.59	0.63	0.71	0.69	0.77	0.76	0.84	0.91	6.95
42:	0.99	0.95	0.92	0.58	0.97	1.02	1.05	1.05	1.12	1.17	9.82
43:	1.20	1.25	1.37	1.38	1.28	1.32	1.31	1.31	1.43	1.35	13.19
44:	1.36	1.32	1.29	1.28	1.30	1.33	1.38	1.34	1.29	1.34	13.24
45:	1.36	1.39	1.40	0.87	1.21	1.14	1.10	1.05	1.03	0.98	11.53
46:	0.91	0.94	0.98	0.92	0.97	0.88	0.84	0.84	0.81	0.73	8.81
47:	0.71	0.71	0.74	0.75	0.68	0.72	0.62	0.67	0.70	0.71	7.00
48:	0.68	0.67	0.70	0.45	0.64	0.61	0.56	0.58	0.54	0.52	5.95
49:	0.50	0.52	0.50	0.50	0.47	0.48	0.45	0.43	0.43	0.41	4.69
50:	0.37	0.40	0.34	0.34	0.32	0.31	0.30	0.33	0.32	0.29	3.30

51:	0.29	0.31	0.29	0.21	0.28	0.22	0.19	0.20	0.17	0.19	2.36
52:	0.15	0.16	0.15	0.13	0.14	0.14	0.14	0.11	0.13	0.11	1.36
53:	0.11	0.11	0.10	0.11	0.09	0.12	0.09	0.09	0.10	0.10	1.01
54:	0.10	0.10	0.11	0.05	0.09	0.10	0.07	0.08	0.07	0.10	0.86
55:	0.07	0.07	0.07	0.06	0.08	0.09	0.07	0.08	0.07	0.06	0.71
56:	0.07	0.06	0.05	0.05	0.06	0.06	0.04	0.05	0.05	0.07	0.55
57:	0.05	0.05	0.07	0.04	0.05	0.06	0.04	0.06	0.05	0.06	0.54
58:	0.05	0.04	0.06	0.05	0.05	0.05	0.04	0.06	0.05	0.04	0.49
59:	0.03	0.05	0.04	0.05	0.02	0.04	0.04	0.04	0.04	0.03	0.37
60:	0.03	0.04	0.04	0.02	0.02	0.03	0.03	0.02	0.03	0.03	0.27
61:	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.20
62:	0.02	0.03	0.01	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.16
63:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.10
64:	0.01	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.05
65:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
66:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
67:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
68:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
69:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
70:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
71:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Statistics Chart

Monitoring Station #1 Nighttime Period: Statistics Chart

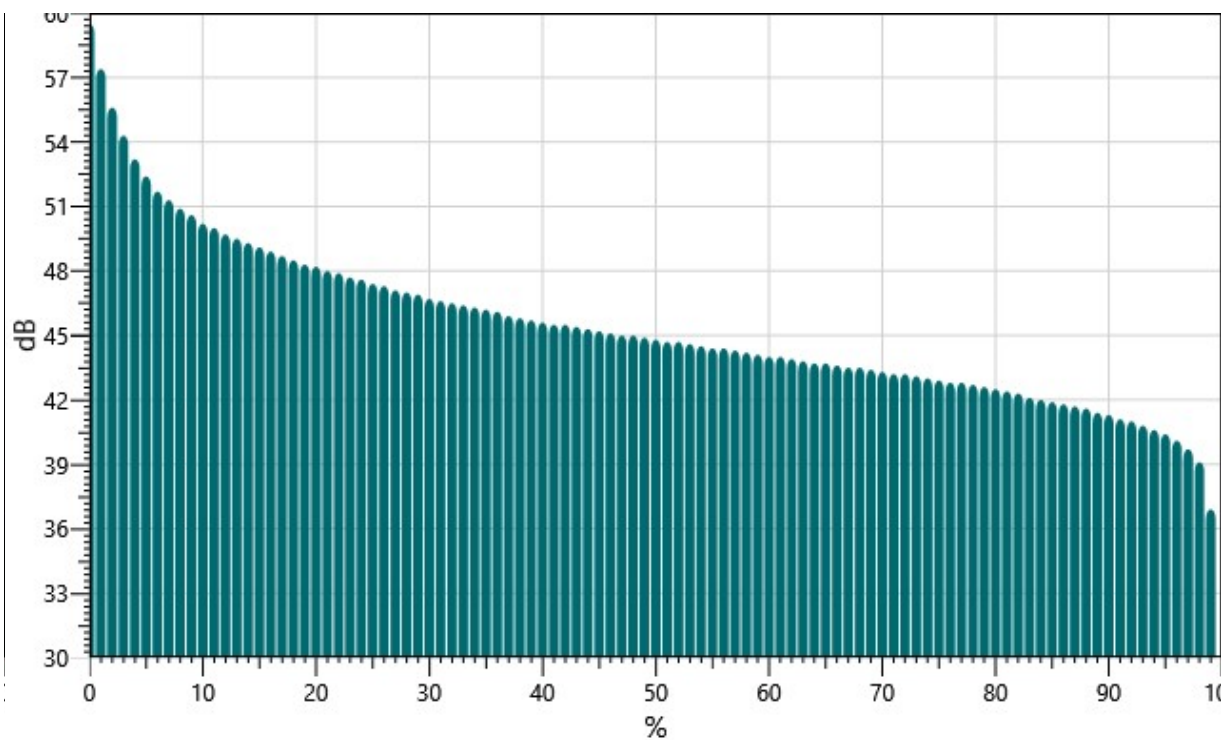


Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		59.5	57.4	55.6	54.3	53.2	52.4	51.7	51.3	50.9
10%:	50.6	50.2	50.0	49.7	49.5	49.3	49.1	48.9	48.7	48.5
20%:	48.3	48.2	48.0	47.9	47.7	47.6	47.4	47.3	47.1	47.0
30%:	46.9	46.7	46.6	46.5	46.4	46.3	46.2	46.1	45.9	45.8
40%:	45.7	45.6	45.5	45.5	45.4	45.3	45.2	45.1	45.0	45.0
50%:	44.9	44.8	44.7	44.7	44.6	44.5	44.4	44.4	44.3	44.2
60%:	44.1	44.0	44.0	43.9	43.8	43.7	43.7	43.6	43.5	43.5
70%:	43.4	43.3	43.2	43.2	43.1	43.0	42.9	42.8	42.8	42.7
80%:	42.6	42.5	42.4	42.3	42.1	42.0	41.9	41.8	41.7	41.6
90%:	41.4	41.3	41.1	41.0	40.8	40.6	40.4	40.1	39.7	39.1
100%:	36.9									

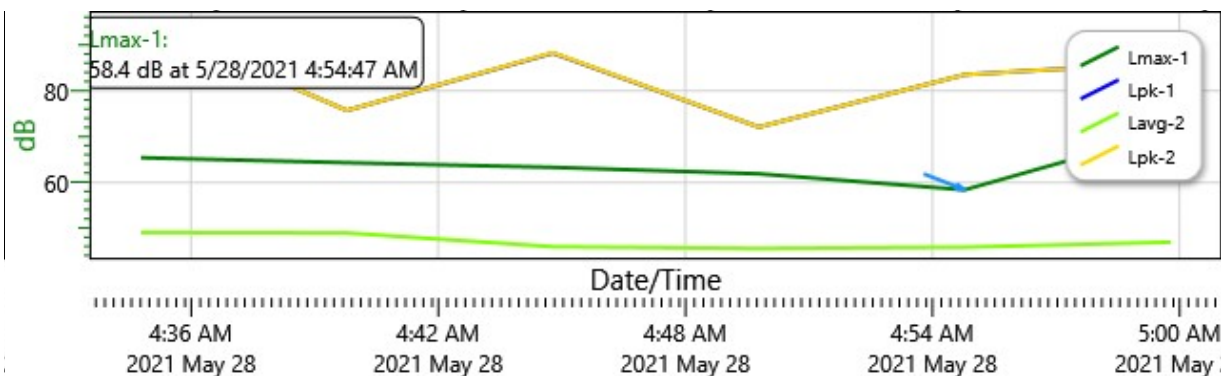
Exceedance Chart

Monitoring Station #1 Nighttime Period: Exceedance Chart



Logged Data Chart

Monitoring Station #1 Nighttime Period: Logged Data Chart



Session Report

5/28/2021

Information Panel

Name	Monitoring Station #2 Daytime
Start Time	5/28/2021 7:32:42 AM
Stop Time	5/28/2021 8:02:56 AM
Device Name	BLP070008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	Located at west side of Brisas de Arroyo project

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
CNEL	1	50.8 dB	L10	1	52.7 dB
L90	1	46.4 dB	LDN	1	50.8 dB
Rtime	1	00:30:14	Takt	1	56.5 dB
Exchange Rate	1	5 dB	Weighting	1	A
Response	1	FAST	Criterion Level	1	45 dB

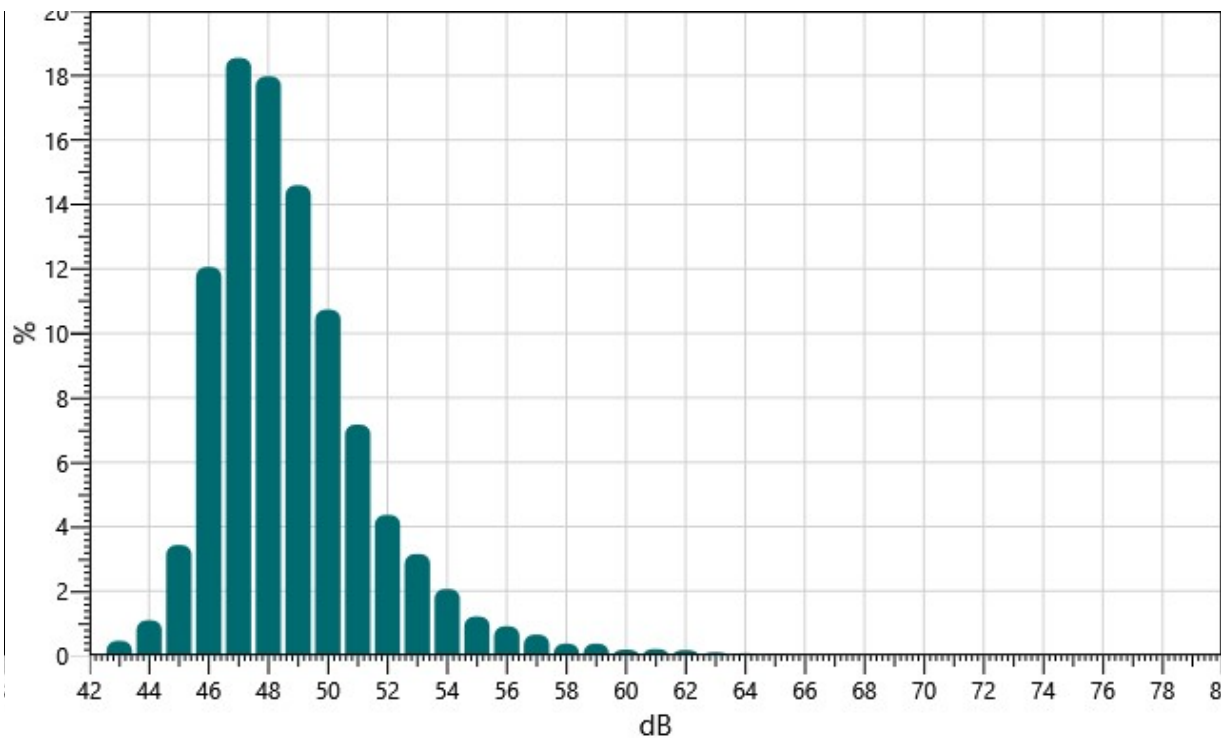
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
42:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.02
43:	0.01	0.02	0.02	0.02	0.04	0.06	0.07	0.07	0.07	0.06	0.45
44:	0.06	0.07	0.08	0.07	0.10	0.11	0.13	0.14	0.14	0.17	1.09
45:	0.19	0.18	0.23	0.23	0.29	0.37	0.39	0.43	0.51	0.62	3.43
46:	0.73	0.84	0.96	1.05	1.29	1.33	1.33	1.41	1.56	1.55	12.06
47:	1.77	1.70	1.75	1.78	1.81	1.87	1.98	1.93	1.97	2.00	18.54
48:	2.17	2.18	2.16	1.32	1.78	1.74	1.77	1.70	1.60	1.56	17.97
49:	1.62	1.57	1.58	1.52	1.47	1.44	1.41	1.34	1.35	1.30	14.59
50:	1.25	1.21	1.19	1.17	1.07	1.00	1.01	0.98	0.93	0.93	10.73
51:	0.90	0.93	0.92	0.54	0.73	0.70	0.66	0.65	0.57	0.55	7.17
52:	0.52	0.48	0.47	0.43	0.43	0.42	0.42	0.41	0.39	0.39	4.36
53:	0.37	0.34	0.33	0.32	0.28	0.31	0.33	0.30	0.28	0.28	3.15
54:	0.24	0.27	0.26	0.16	0.23	0.21	0.18	0.18	0.17	0.18	2.06
55:	0.13	0.14	0.13	0.13	0.14	0.11	0.12	0.11	0.11	0.09	1.21

56:	0.11	0.11	0.11	0.10	0.08	0.07	0.09	0.08	0.07	0.08	0.91
57:	0.07	0.07	0.07	0.05	0.07	0.07	0.08	0.05	0.06	0.06	0.65
58:	0.05	0.03	0.04	0.04	0.03	0.04	0.03	0.04	0.03	0.03	0.37
59:	0.04	0.03	0.03	0.05	0.05	0.05	0.03	0.02	0.04	0.03	0.37
60:	0.03	0.02	0.03	0.01	0.02	0.02	0.01	0.01	0.01	0.02	0.18
61:	0.01	0.02	0.01	0.02	0.01	0.02	0.02	0.03	0.03	0.02	0.20
62:	0.03	0.02	0.01	0.02	0.01	0.01	0.02	0.01	0.02	0.02	0.17
63:	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.10
64:	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.07
65:	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.05
66:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
67:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
68:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
69:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
70:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
71:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
72:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Statistics Chart

Monitoring Station #2 Daytime: Statistics Chart

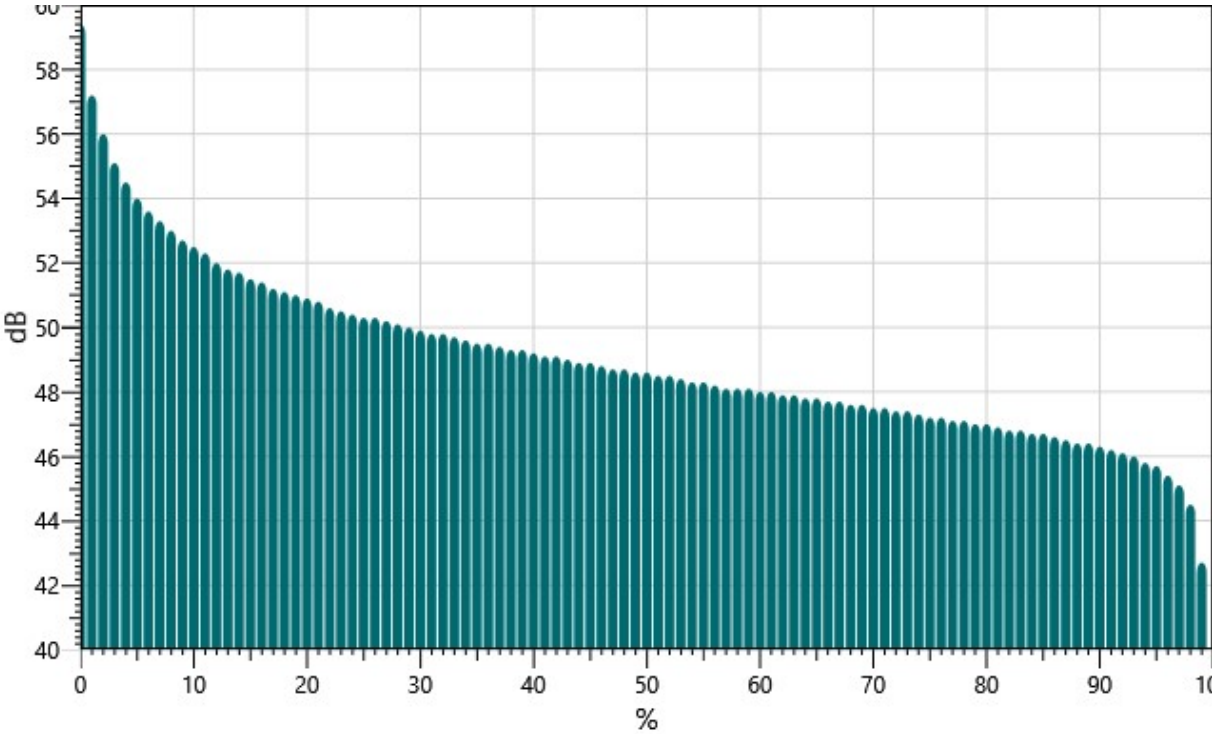


Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		59.4	57.2	56.0	55.1	54.5	54.0	53.6	53.3	53.0
10%:	52.7	52.5	52.3	52.0	51.8	51.7	51.5	51.4	51.2	51.1
20%:	51.0	50.9	50.8	50.6	50.5	50.4	50.3	50.3	50.2	50.1
30%:	50.0	49.9	49.8	49.8	49.7	49.6	49.5	49.5	49.4	49.3
40%:	49.3	49.2	49.1	49.1	49.0	48.9	48.9	48.8	48.7	48.7
50%:	48.6	48.6	48.5	48.5	48.4	48.3	48.3	48.2	48.1	48.1
60%:	48.1	48.0	48.0	47.9	47.9	47.8	47.8	47.7	47.7	47.6
70%:	47.6	47.5	47.5	47.4	47.4	47.3	47.2	47.2	47.1	47.1
80%:	47.0	47.0	46.9	46.8	46.8	46.7	46.7	46.6	46.5	46.4
90%:	46.4	46.3	46.2	46.1	46.0	45.8	45.7	45.4	45.1	44.5
100%:	42.7									

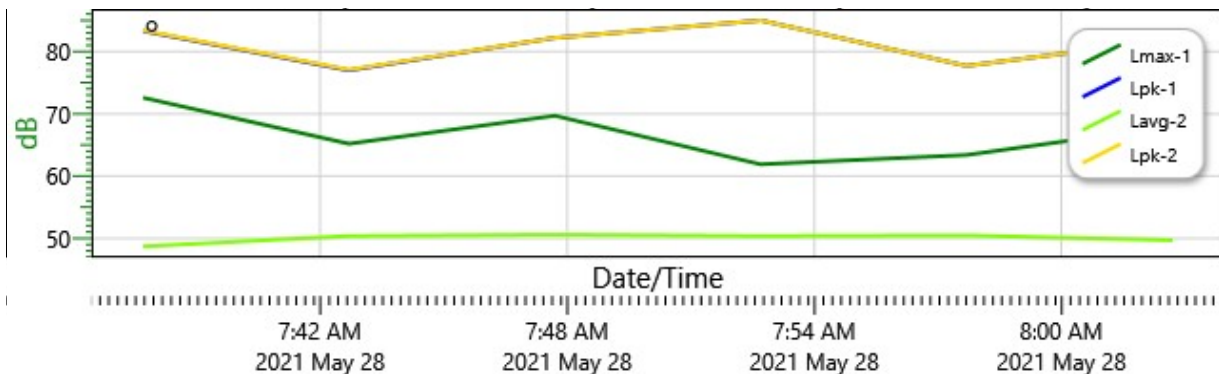
Exceedance Chart

Monitoring Station #2 Daytime: Exceedance Chart



Logged Data Chart

Monitoring Station #2 Daytime: Logged Data Chart



Session Report

5/28/2021

Information Panel

Name	Monitoring Station #2 Nighttime Period
Start Time	5/28/2021 5:02:13 AM
Stop Time	5/28/2021 5:32:37 AM
Device Name	BLP070008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	Located at west side of Brisas de Arroyo project

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
LDN	1	59.8 dB	Rtime	1	00:30:24
Takt	1	57.1 dB	L10	1	51.3 dB
CNEL	1	59.8 dB	L90	1	43.4 dB
Criterion Level	1	45 dB	Weighting	1	A
Response	1	FAST	Exchange Rate	1	5 dB

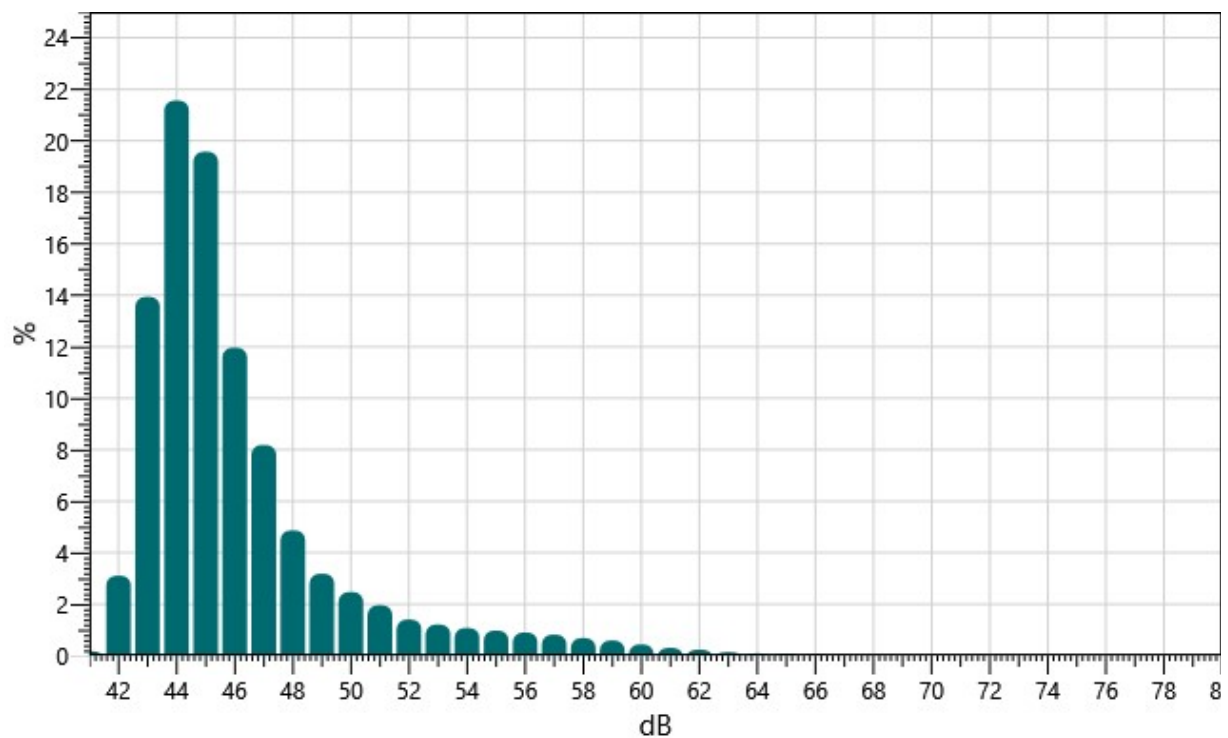
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
41:	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.04	0.07	0.17
42:	0.11	0.14	0.17	0.11	0.22	0.26	0.40	0.49	0.56	0.65	3.10
43:	0.82	0.88	1.02	1.15	1.43	1.59	1.61	1.79	1.80	1.85	13.93
44:	1.93	2.06	2.04	2.13	2.15	2.11	2.18	2.26	2.35	2.36	21.56
45:	2.49	2.44	2.50	1.46	2.05	1.84	1.69	1.76	1.76	1.58	19.57
46:	1.40	1.46	1.34	1.25	1.24	1.14	1.08	1.04	1.02	0.99	11.96
47:	0.98	0.89	0.91	0.86	0.77	0.81	0.75	0.77	0.72	0.70	8.18
48:	0.66	0.67	0.63	0.34	0.47	0.45	0.44	0.40	0.43	0.38	4.87
49:	0.39	0.36	0.38	0.31	0.33	0.29	0.28	0.32	0.26	0.27	3.18
50:	0.28	0.25	0.25	0.23	0.24	0.23	0.25	0.24	0.23	0.26	2.47
51:	0.24	0.25	0.23	0.17	0.23	0.17	0.18	0.19	0.17	0.14	1.96
52:	0.15	0.13	0.17	0.13	0.14	0.15	0.14	0.15	0.13	0.12	1.40
53:	0.10	0.13	0.12	0.13	0.12	0.12	0.14	0.13	0.12	0.10	1.21
54:	0.13	0.12	0.13	0.08	0.11	0.10	0.10	0.10	0.10	0.11	1.08

55:	0.11	0.10	0.10	0.10	0.09	0.10	0.10	0.08	0.10	0.09	0.97
56:	0.10	0.10	0.08	0.09	0.10	0.08	0.09	0.08	0.09	0.09	0.90
57:	0.10	0.11	0.09	0.06	0.08	0.08	0.09	0.08	0.07	0.07	0.81
58:	0.07	0.07	0.07	0.06	0.07	0.08	0.07	0.08	0.06	0.06	0.68
59:	0.05	0.06	0.06	0.07	0.06	0.06	0.05	0.07	0.06	0.05	0.59
60:	0.05	0.06	0.07	0.03	0.04	0.04	0.04	0.04	0.03	0.03	0.44
61:	0.04	0.04	0.03	0.03	0.03	0.04	0.03	0.03	0.02	0.03	0.30
62:	0.03	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.03	0.23
63:	0.02	0.02	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.14
64:	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.09
65:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.09
66:	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.05
67:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
68:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
69:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
70:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Statistics Chart

Monitoring Station #2 Nighttime Period: Statistics Chart

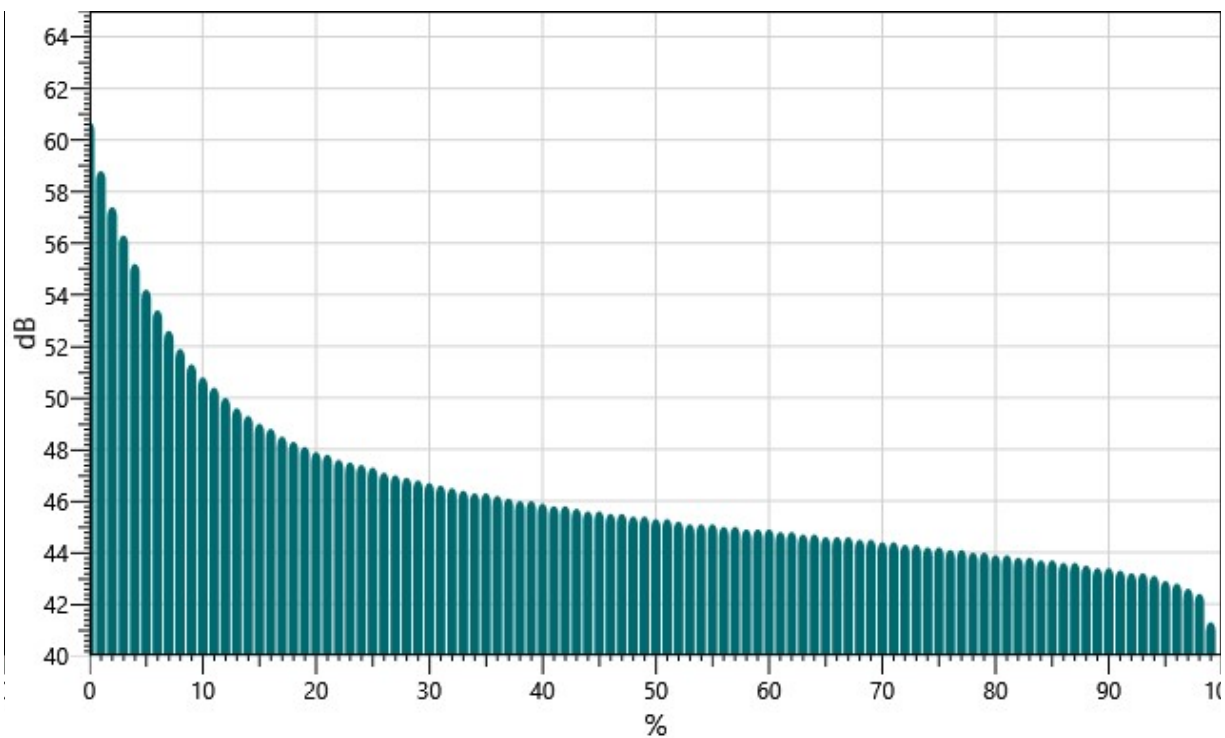


Exceedance Table

	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		60.7	58.8	57.4	56.3	55.2	54.2	53.4	52.6	51.9
10%:	51.3	50.8	50.4	50.0	49.6	49.3	49.0	48.8	48.5	48.3
20%:	48.1	47.9	47.8	47.6	47.5	47.4	47.3	47.1	47.0	46.9
30%:	46.8	46.7	46.6	46.5	46.4	46.3	46.3	46.2	46.1	46.0
40%:	46.0	45.9	45.8	45.8	45.7	45.6	45.6	45.5	45.5	45.4
50%:	45.4	45.3	45.3	45.2	45.1	45.1	45.1	45.0	45.0	44.9
60%:	44.9	44.9	44.8	44.8	44.7	44.7	44.6	44.6	44.6	44.5
70%:	44.5	44.4	44.4	44.3	44.3	44.2	44.2	44.1	44.1	44.0
80%:	44.0	43.9	43.9	43.8	43.8	43.7	43.7	43.6	43.6	43.5
90%:	43.4	43.4	43.3	43.2	43.2	43.1	42.9	42.8	42.6	42.4
100%:	41.3									

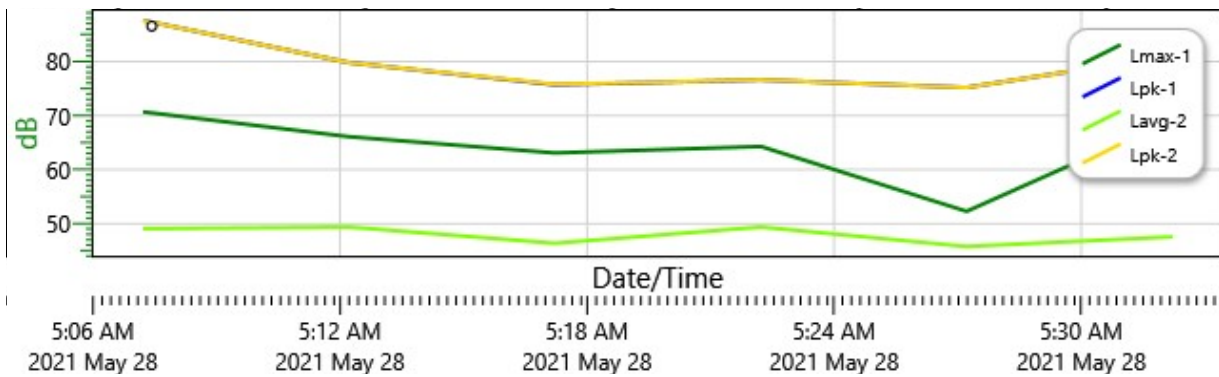
Exceedance Chart

Monitoring Station #2 Nighttime Period: Exceedance Chart



Logged Data Chart

Monitoring Station #2 Nighttime Period: Logged Data Chart



Session Report

5/28/2021

Information Panel

Name	Monitoring Station #3 Daytime Period
Start Time	5/28/2021 8:06:38 AM
Stop Time	5/28/2021 8:36:43 AM
Device Name	BLP070008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	Located at south side of Brisas de Arroyo - adjacent to E Street

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
CNEL	1	55.1 dB	L10	1	56.8 dB
L90	1	43.6 dB	LDN	1	55.1 dB
Takt	1	63.6 dB	Rtime	1	00:30:05
Exchange Rate	1	5 dB	Weighting	1	A
Response	1	FAST	Criterion Level	1	45 dB

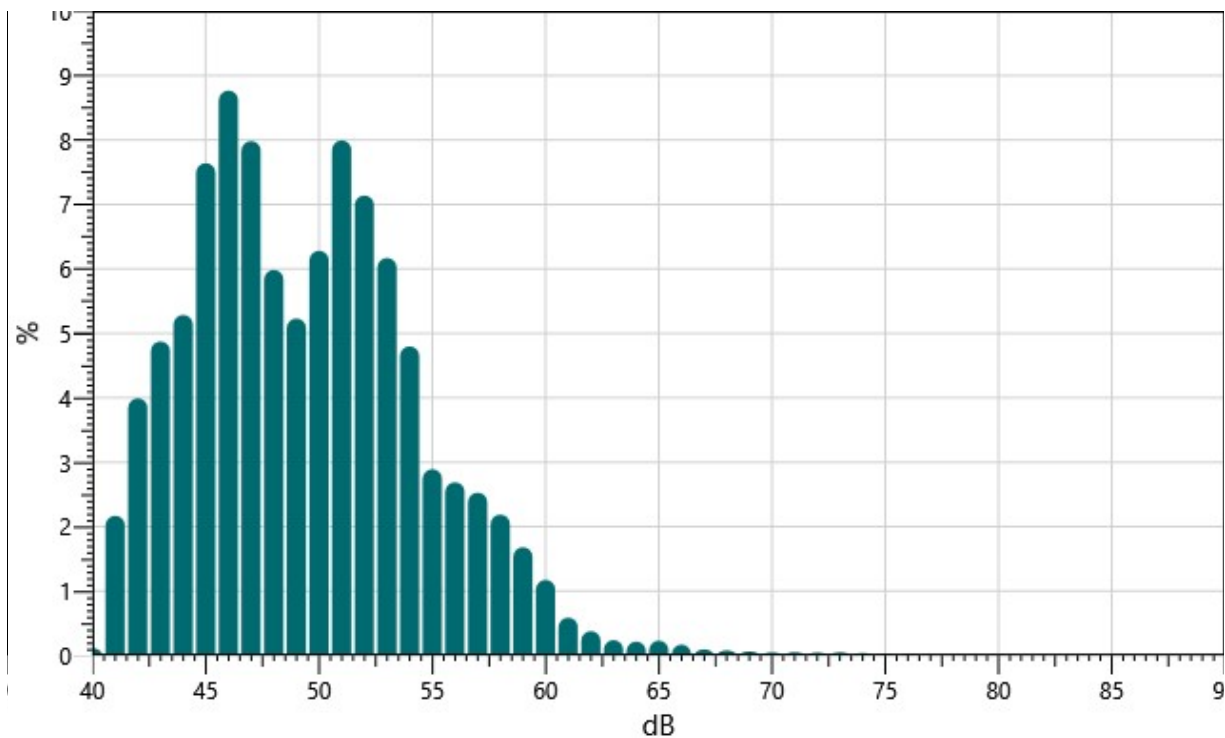
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40:	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.04	0.12
41:	0.06	0.09	0.10	0.15	0.21	0.26	0.34	0.29	0.33	0.34	2.17
42:	0.34	0.37	0.38	0.21	0.41	0.45	0.48	0.46	0.45	0.45	3.99
43:	0.48	0.52	0.50	0.47	0.51	0.49	0.47	0.50	0.47	0.47	4.87
44:	0.51	0.48	0.50	0.46	0.51	0.55	0.56	0.55	0.56	0.62	5.29
45:	0.64	0.74	0.84	0.55	0.78	0.78	0.83	0.87	0.84	0.77	7.64
46:	0.83	0.83	0.87	0.87	0.94	0.92	0.88	0.91	0.86	0.85	8.77
47:	0.82	0.88	0.82	0.83	0.74	0.79	0.75	0.80	0.80	0.76	7.98
48:	0.71	0.77	0.72	0.43	0.56	0.56	0.55	0.58	0.58	0.55	5.99
49:	0.55	0.53	0.53	0.48	0.46	0.49	0.50	0.52	0.60	0.57	5.23
50:	0.64	0.64	0.64	0.63	0.61	0.61	0.56	0.62	0.63	0.69	6.28
51:	0.72	0.90	0.95	0.61	0.81	0.81	0.84	0.85	0.79	0.72	7.99
52:	0.71	0.75	0.74	0.75	0.68	0.70	0.68	0.73	0.72	0.68	7.14
53:	0.67	0.61	0.62	0.62	0.57	0.64	0.60	0.63	0.60	0.61	6.17

54:	0.55	0.58	0.61	0.44	0.52	0.52	0.47	0.45	0.34	0.32	4.80
55:	0.29	0.28	0.30	0.30	0.29	0.28	0.29	0.29	0.28	0.28	2.89
56:	0.30	0.26	0.30	0.26	0.26	0.25	0.26	0.27	0.28	0.26	2.69
57:	0.25	0.28	0.27	0.19	0.26	0.27	0.25	0.26	0.24	0.25	2.53
58:	0.24	0.23	0.20	0.21	0.21	0.19	0.20	0.24	0.24	0.23	2.19
59:	0.20	0.20	0.18	0.16	0.16	0.18	0.15	0.16	0.15	0.14	1.68
60:	0.15	0.15	0.18	0.10	0.12	0.10	0.10	0.11	0.08	0.08	1.17
61:	0.08	0.08	0.07	0.07	0.06	0.06	0.04	0.05	0.04	0.04	0.59
62:	0.04	0.04	0.03	0.03	0.05	0.05	0.04	0.03	0.04	0.03	0.38
63:	0.03	0.02	0.03	0.03	0.02	0.02	0.02	0.03	0.02	0.02	0.24
64:	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.03	0.02	0.22
65:	0.02	0.03	0.03	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.23
66:	0.02	0.02	0.02	0.03	0.01	0.02	0.01	0.02	0.01	0.01	0.17
67:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.10
68:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.08
69:	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.07
70:	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.05
71:	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.05
72:	0.00	0.01	0.00	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.05
73:	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.05
74:	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.04
75:	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
76:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
77:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
78:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
79:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
80:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
81:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
82:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
83:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Statistics Chart

Monitoring Station #3 Daytime Period: Statistics Chart

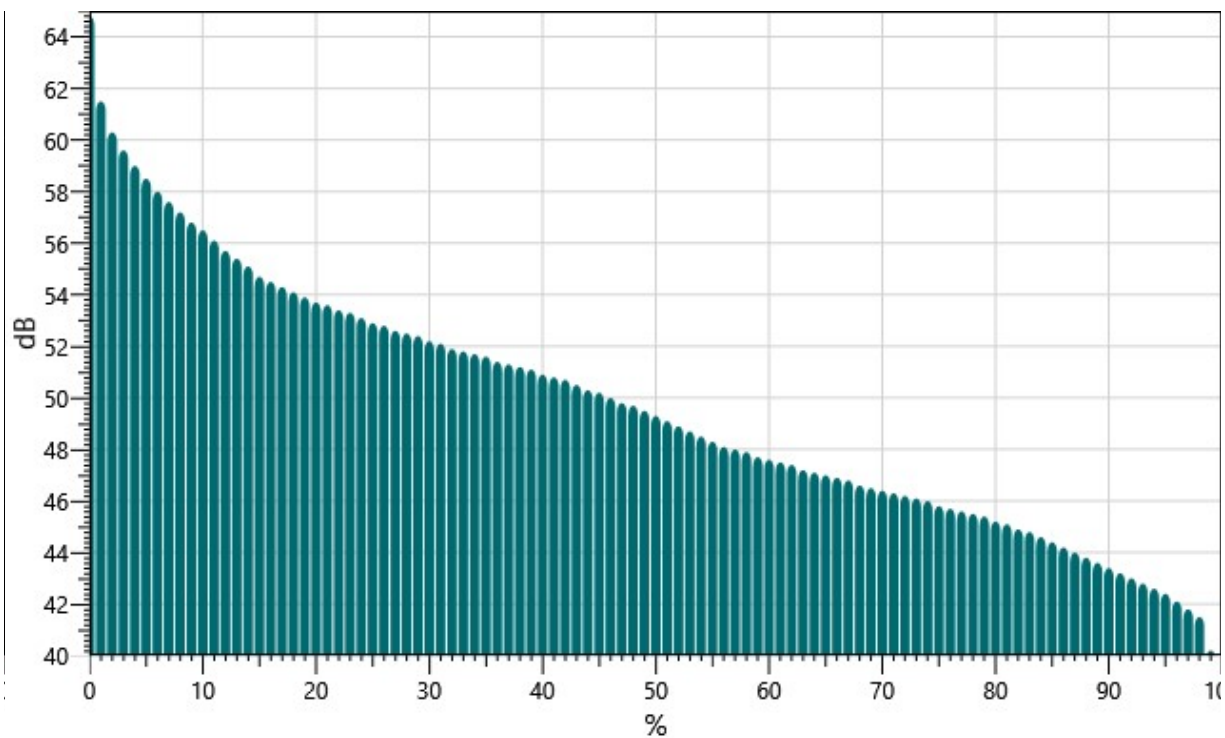


Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		64.8	61.5	60.3	59.6	59.0	58.5	58.0	57.6	57.2
10%:	56.8	56.5	56.1	55.7	55.4	55.1	54.7	54.5	54.3	54.1
20%:	53.9	53.7	53.6	53.4	53.3	53.1	52.9	52.8	52.6	52.5
30%:	52.4	52.2	52.1	51.9	51.8	51.7	51.6	51.4	51.3	51.2
40%:	51.1	50.9	50.8	50.7	50.5	50.3	50.2	50.0	49.8	49.7
50%:	49.5	49.3	49.1	48.9	48.7	48.5	48.3	48.1	48.0	47.9
60%:	47.7	47.6	47.5	47.4	47.2	47.1	47.0	46.9	46.8	46.6
70%:	46.5	46.4	46.3	46.2	46.1	46.0	45.8	45.7	45.6	45.5
80%:	45.4	45.2	45.1	44.9	44.8	44.6	44.4	44.2	44.0	43.8
90%:	43.6	43.4	43.2	43.0	42.8	42.6	42.4	42.1	41.8	41.5
100%:	40.2									

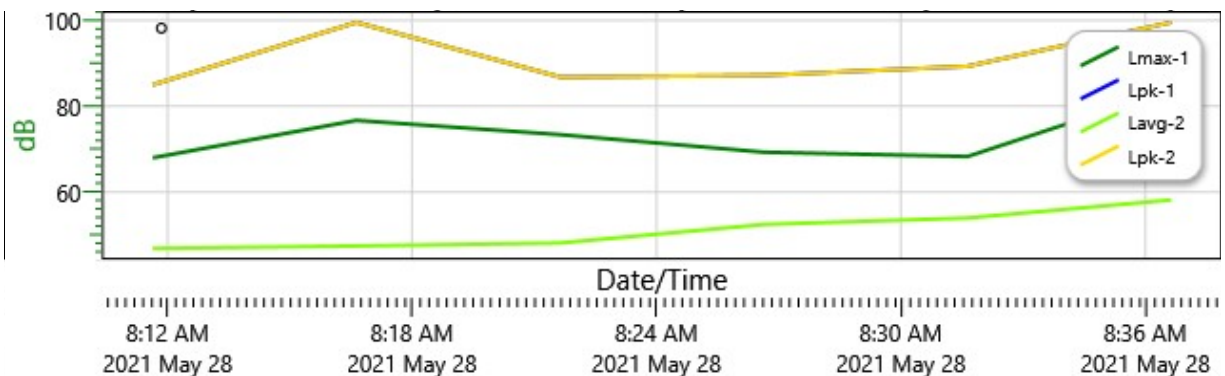
Exceedance Chart

Monitoring Station #3 Daytime Period: Exceedance Chart



Logged Data Chart

Monitoring Station #3 Daytime Period: Logged Data Chart



Session Report

5/28/2021

Information Panel

Name	Monitoring Station #3 Nighttime Period
Start Time	5/28/2021 5:36:26 AM
Stop Time	5/28/2021 6:06:29 AM
Device Name	BLP070008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	Located at south side of Brisas de Arroyo - adjacent to E Street

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
CNEL	1	59.9 dB	LDN	1	59.9 dB
L90	1	42.6 dB	L10	1	52.3 dB
Rtime	1	00:30:03	Takt	1	57.8 dB
Weighting	1	A	Response	1	FAST
Criterion Level	1	45 dB	Exchange Rate	1	5 dB

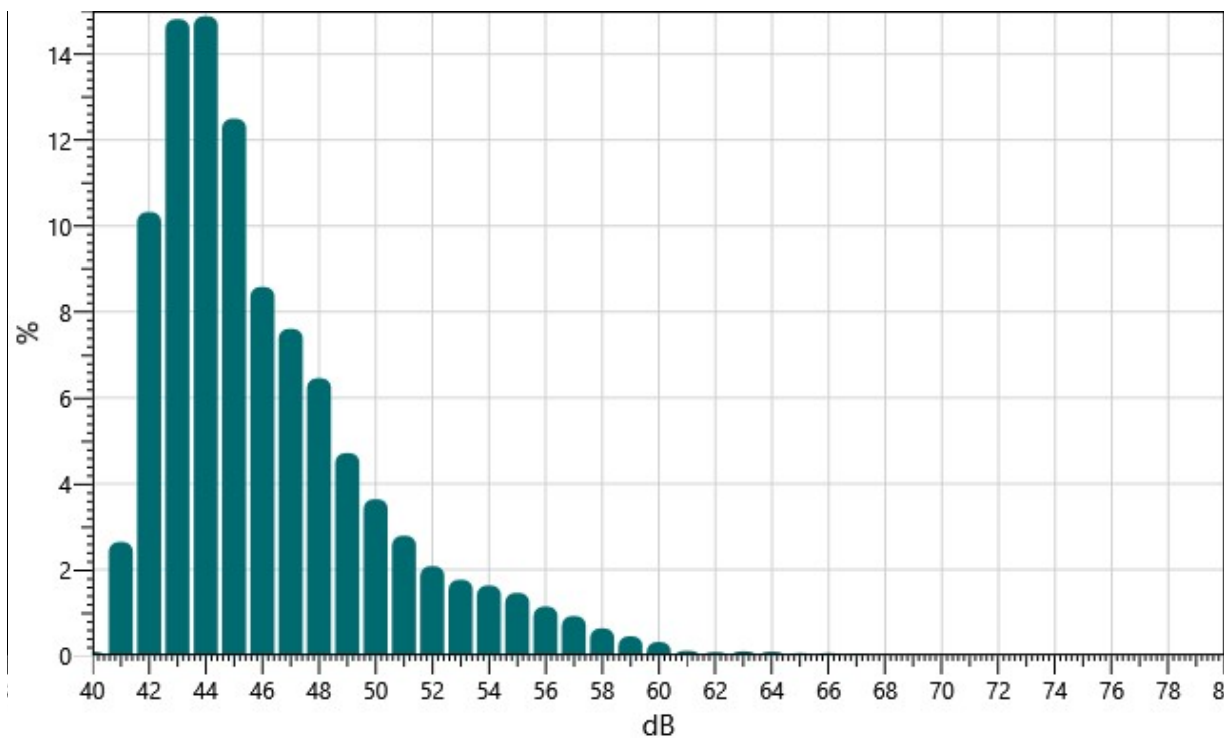
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.05	0.09
41:	0.05	0.08	0.14	0.16	0.19	0.24	0.30	0.41	0.48	0.60	2.64
42:	0.67	0.88	0.86	0.57	1.05	1.09	1.21	1.28	1.33	1.38	10.32
43:	1.33	1.38	1.43	1.56	1.48	1.55	1.58	1.50	1.48	1.53	14.81
44:	1.48	1.47	1.46	1.50	1.45	1.47	1.53	1.45	1.55	1.52	14.88
45:	1.52	1.49	1.57	0.91	1.27	1.23	1.19	1.17	1.10	1.05	12.50
46:	1.00	0.91	0.88	0.86	0.84	0.86	0.83	0.84	0.77	0.79	8.58
47:	0.75	0.78	0.81	0.74	0.76	0.77	0.75	0.75	0.73	0.75	7.60
48:	0.73	0.73	0.75	0.48	0.65	0.64	0.66	0.59	0.64	0.58	6.45
49:	0.59	0.50	0.49	0.49	0.45	0.46	0.43	0.43	0.44	0.44	4.71
50:	0.41	0.40	0.37	0.37	0.36	0.38	0.35	0.34	0.35	0.31	3.64
51:	0.32	0.35	0.36	0.22	0.26	0.26	0.28	0.26	0.24	0.24	2.79
52:	0.23	0.23	0.24	0.21	0.21	0.20	0.19	0.19	0.19	0.20	2.08
53:	0.18	0.17	0.19	0.16	0.17	0.18	0.17	0.17	0.21	0.18	1.76

54:	0.19	0.20	0.19	0.13	0.16	0.16	0.16	0.13	0.15	0.16	1.63
55:	0.17	0.16	0.15	0.15	0.14	0.16	0.12	0.14	0.16	0.12	1.46
56:	0.12	0.12	0.12	0.10	0.11	0.12	0.10	0.12	0.13	0.11	1.14
57:	0.13	0.11	0.10	0.07	0.10	0.08	0.08	0.08	0.09	0.08	0.92
58:	0.07	0.06	0.09	0.06	0.07	0.05	0.06	0.05	0.05	0.06	0.63
59:	0.06	0.04	0.06	0.05	0.05	0.04	0.05	0.04	0.03	0.04	0.45
60:	0.05	0.05	0.05	0.03	0.02	0.03	0.03	0.02	0.01	0.02	0.32
61:	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.11
62:	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.08
63:	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.10
64:	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.09
65:	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.06
66:	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.06
67:	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.04
68:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
69:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
70:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
71:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
72:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
74:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
76:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
77:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
78:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Statistics Chart

Monitoring Station #3 Nighttime Period: Statistics Chart

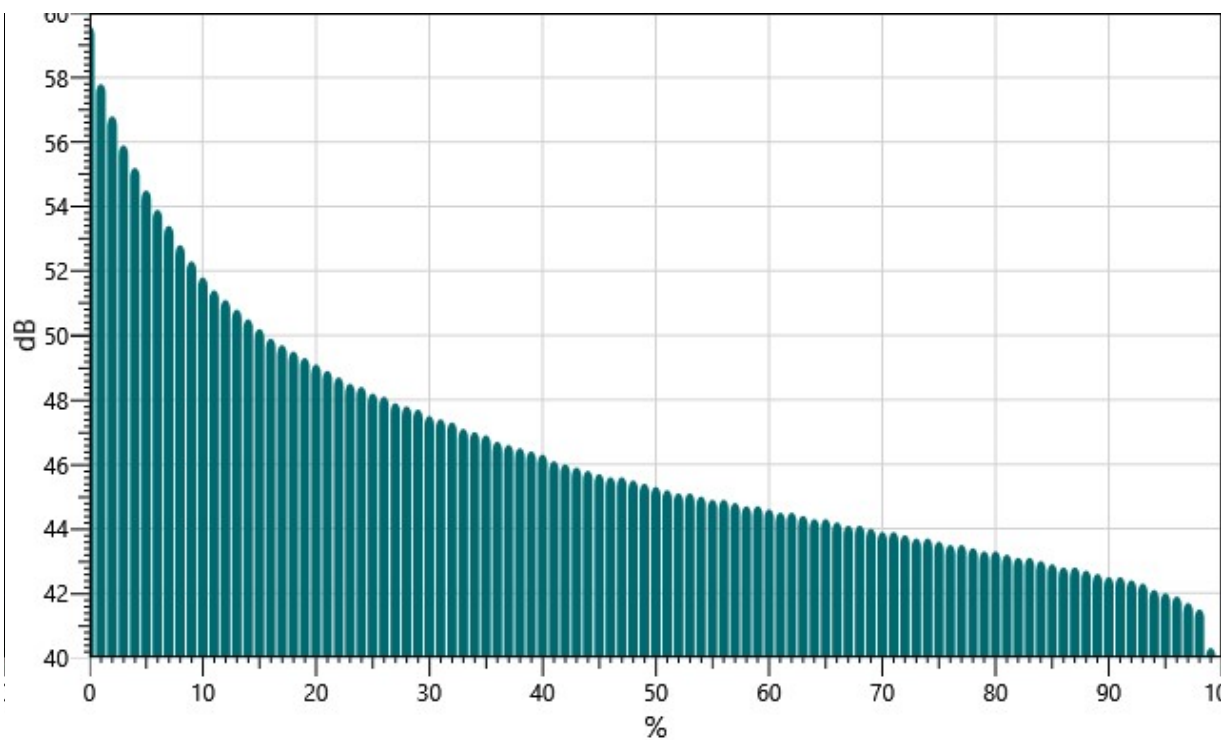


Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		59.6	57.8	56.8	55.9	55.2	54.5	53.9	53.4	52.8
10%:	52.3	51.8	51.4	51.1	50.8	50.5	50.2	49.9	49.7	49.5
20%:	49.3	49.1	48.9	48.7	48.5	48.4	48.2	48.1	47.9	47.8
30%:	47.7	47.5	47.4	47.3	47.1	47.0	46.9	46.7	46.6	46.5
40%:	46.4	46.3	46.1	46.0	45.9	45.8	45.7	45.6	45.6	45.5
50%:	45.4	45.3	45.2	45.1	45.1	45.0	44.9	44.9	44.8	44.7
60%:	44.7	44.6	44.5	44.5	44.4	44.3	44.3	44.2	44.1	44.1
70%:	44.0	43.9	43.9	43.8	43.7	43.7	43.6	43.5	43.5	43.4
80%:	43.3	43.3	43.2	43.1	43.1	43.0	42.9	42.8	42.8	42.7
90%:	42.6	42.5	42.5	42.4	42.3	42.1	42.0	41.9	41.7	41.5
100%:	40.3									

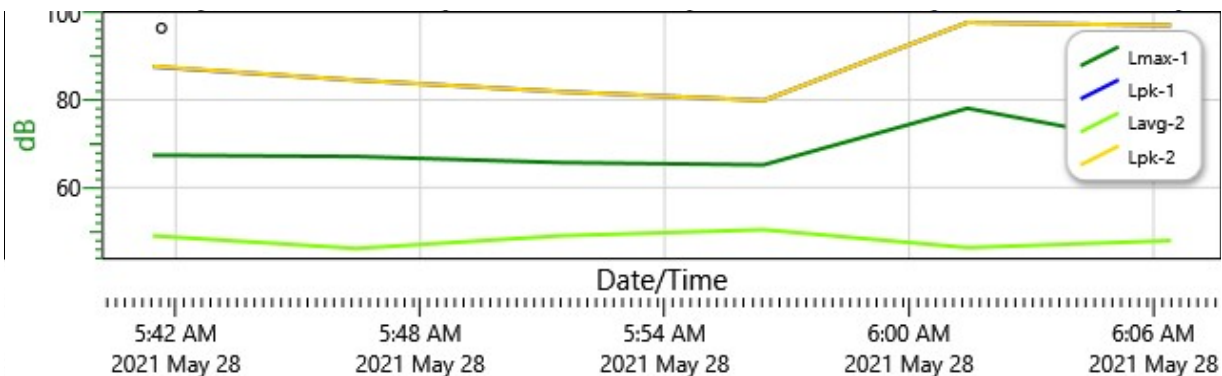
Exceedance Chart

Monitoring Station #3 Nighttime Period: Exceedance Chart



Logged Data Chart

Monitoring Station #3 Nighttime Period: Logged Data Chart



Session Report

5/28/2021

Information Panel

Name	Monitoring Station #4 Daytime Period
Start Time	5/28/2021 8:38:11 AM
Stop Time	5/28/2021 9:08:20 AM
Device Name	BLP070008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	Located at east side of Brisas de Arroyo project

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
CNEL	1	51.8 dB	L10	1	52.5 dB
L90	1	42.7 dB	LDN	1	51.8 dB
Takt	1	59.6 dB	Rtime	1	00:30:09
Exchange Rate	1	5 dB	Weighting	1	A
Response	1	FAST	Criterion Level	1	45 dB

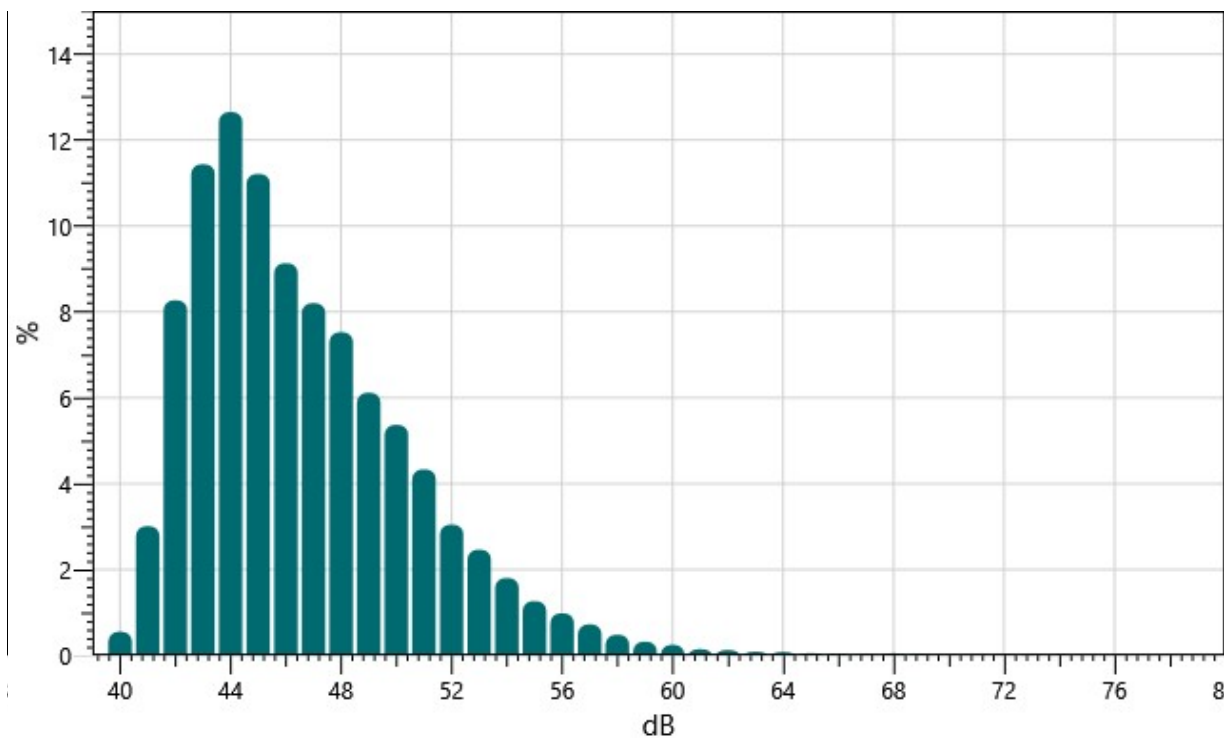
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
39:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
40:	0.02	0.02	0.03	0.06	0.06	0.05	0.05	0.09	0.07	0.11	0.55
41:	0.12	0.14	0.18	0.22	0.29	0.32	0.34	0.40	0.49	0.54	3.01
42:	0.62	0.75	0.69	0.44	0.79	0.85	0.96	0.99	1.07	1.10	8.27
43:	1.04	1.14	1.20	1.14	1.22	1.21	1.13	1.09	1.09	1.18	11.44
44:	1.21	1.29	1.25	1.26	1.26	1.29	1.27	1.24	1.27	1.31	12.65
45:	1.32	1.37	1.38	0.84	1.11	1.06	1.07	1.04	1.01	1.00	11.21
46:	0.97	0.93	0.97	0.93	0.93	0.95	0.90	0.86	0.88	0.83	9.13
47:	0.86	0.83	0.81	0.84	0.77	0.81	0.82	0.84	0.83	0.80	8.20
48:	0.83	0.86	0.91	0.58	0.78	0.75	0.70	0.72	0.70	0.69	7.52
49:	0.73	0.67	0.59	0.62	0.63	0.58	0.56	0.59	0.58	0.56	6.12
50:	0.57	0.55	0.55	0.56	0.53	0.53	0.53	0.51	0.51	0.53	5.37
51:	0.54	0.52	0.52	0.31	0.47	0.43	0.38	0.40	0.38	0.39	4.33
52:	0.36	0.34	0.33	0.32	0.30	0.28	0.30	0.27	0.27	0.26	3.05

53:	0.28	0.26	0.26	0.25	0.26	0.23	0.22	0.24	0.24	0.23	2.46
54:	0.21	0.23	0.22	0.15	0.20	0.19	0.13	0.16	0.15	0.16	1.80
55:	0.13	0.14	0.14	0.14	0.15	0.13	0.11	0.12	0.12	0.10	1.27
56:	0.12	0.10	0.10	0.09	0.10	0.11	0.10	0.10	0.09	0.08	0.98
57:	0.09	0.09	0.08	0.06	0.06	0.09	0.05	0.07	0.07	0.06	0.72
58:	0.05	0.06	0.07	0.05	0.05	0.04	0.04	0.03	0.04	0.03	0.48
59:	0.03	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.04	0.02	0.32
60:	0.03	0.04	0.03	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.25
61:	0.01	0.02	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.15
62:	0.02	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.02	0.13
63:	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.09
64:	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.08
65:	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.06
66:	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.05
67:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03
68:	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.05
69:	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
70:	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
71:	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.02
72:	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.03
73:	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03
74:	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.03
75:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
76:	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
77:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
78:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Statistics Chart

Monitoring Station #4 Daytime Period: Statistics Chart

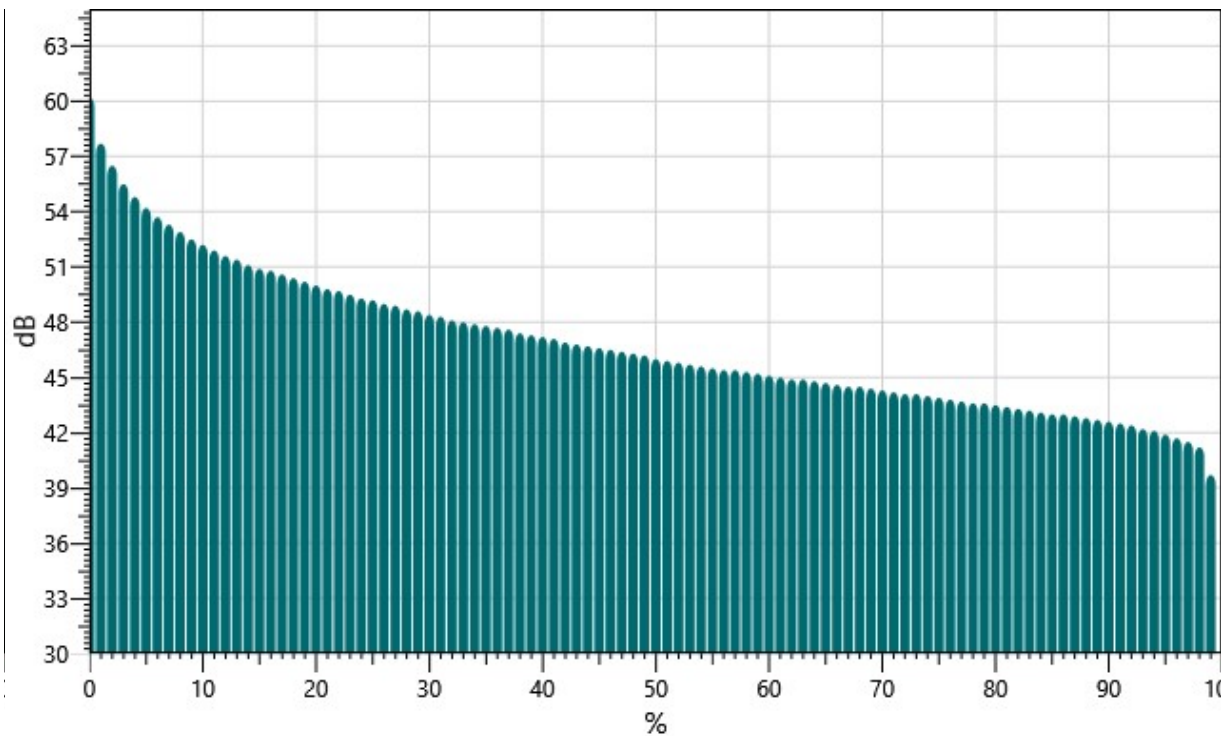


Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		60.2	57.7	56.5	55.5	54.8	54.2	53.7	53.3	52.9
10%:	52.5	52.2	51.9	51.6	51.4	51.1	50.9	50.8	50.6	50.4
20%:	50.2	50.0	49.8	49.7	49.5	49.3	49.2	49.0	48.9	48.7
30%:	48.6	48.4	48.3	48.1	48.0	47.9	47.8	47.7	47.6	47.4
40%:	47.3	47.2	47.1	46.9	46.8	46.7	46.6	46.5	46.4	46.3
50%:	46.2	46.0	45.9	45.8	45.7	45.6	45.5	45.4	45.4	45.3
60%:	45.2	45.1	45.0	44.9	44.9	44.8	44.7	44.6	44.5	44.5
70%:	44.4	44.3	44.2	44.1	44.1	44.0	43.9	43.8	43.7	43.6
80%:	43.6	43.5	43.4	43.3	43.2	43.1	43.0	43.0	42.9	42.8
90%:	42.7	42.6	42.5	42.4	42.2	42.1	41.9	41.7	41.5	41.2
100%:	39.7									

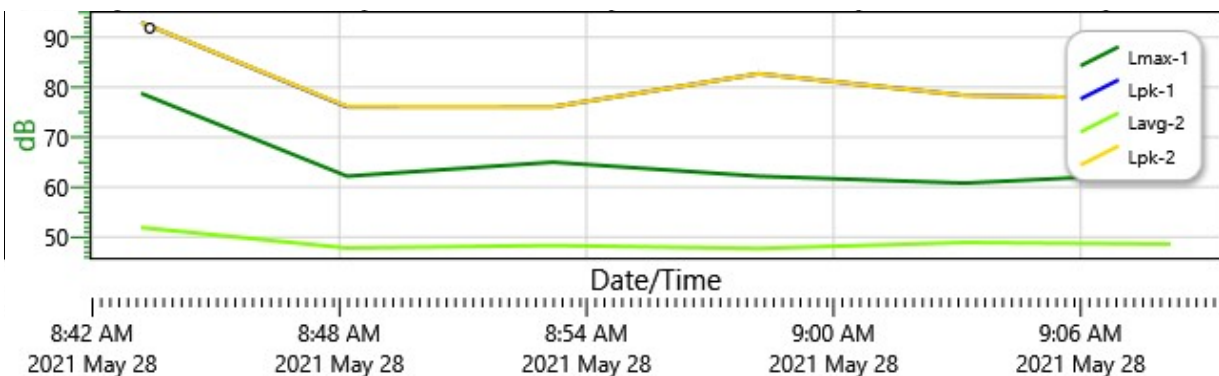
Exceedance Chart

Monitoring Station #4 Daytime Period: Exceedance Chart



Logged Data Chart

Monitoring Station #4 Daytime Period: Logged Data Chart



Session Report

5/28/2021

Information Panel

Name	Monitoring Station #4 Nighttime Period
Start Time	5/28/2021 6:08:28 AM
Stop Time	5/28/2021 6:38:39 AM
Device Name	BLP070008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	Located at east side of Brisas de Arroyo project

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
CNEL	1	61.7 dB	LDN	1	61.7 dB
L10	1	51.7 dB	L90	1	43.3 dB
Takt	1	59.7 dB	Rtime	1	00:30:11
Weighting	1	A	Response	1	FAST
Criterion Level	1	45 dB	Exchange Rate	1	5 dB

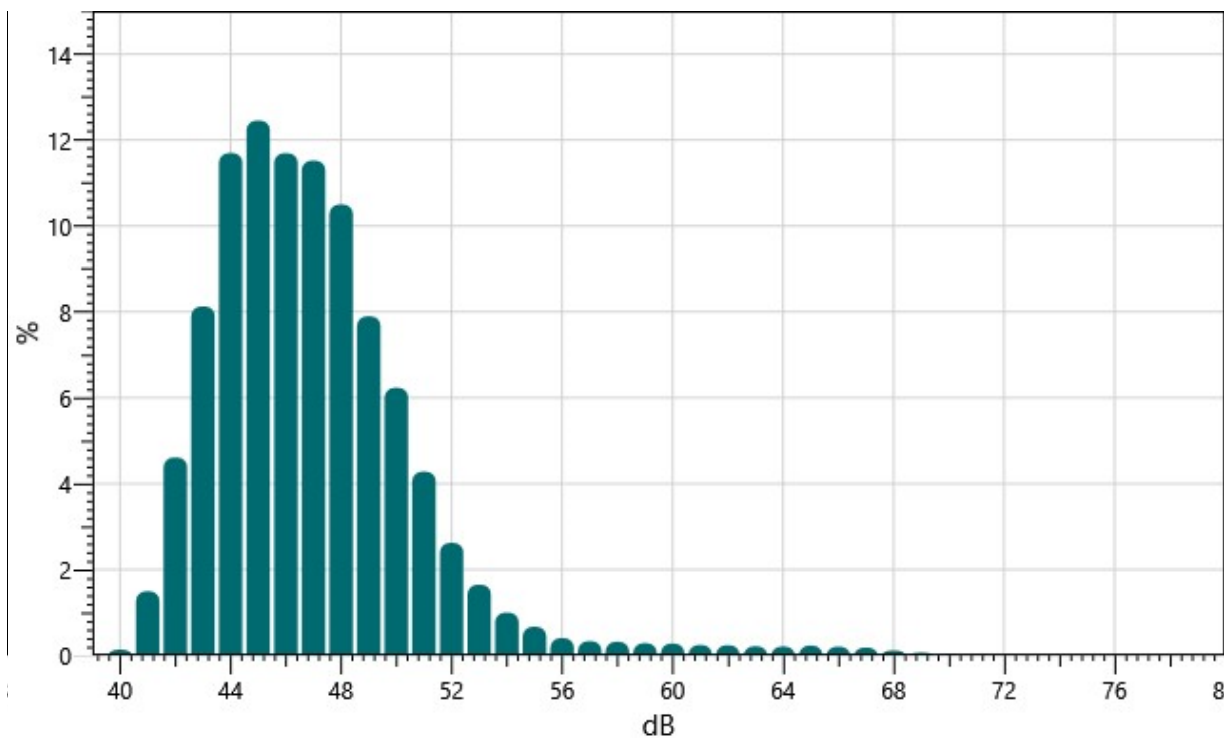
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
39:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40:	0.00	0.00	0.01	0.01	0.00	0.01	0.02	0.03	0.02	0.04	0.14
41:	0.04	0.05	0.06	0.08	0.11	0.14	0.18	0.23	0.27	0.32	1.50
42:	0.39	0.40	0.40	0.22	0.38	0.45	0.49	0.55	0.66	0.68	4.61
43:	0.74	0.76	0.77	0.80	0.81	0.79	0.81	0.87	0.87	0.91	8.12
44:	0.99	1.07	1.07	1.08	1.17	1.24	1.23	1.27	1.30	1.28	11.70
45:	1.37	1.33	1.47	0.87	1.25	1.24	1.29	1.23	1.22	1.19	12.45
46:	1.22	1.18	1.18	1.18	1.19	1.16	1.17	1.19	1.13	1.09	11.69
47:	1.12	1.12	1.11	1.10	1.11	1.20	1.16	1.18	1.25	1.17	11.52
48:	1.26	1.23	1.30	0.79	1.06	1.08	1.00	0.96	0.95	0.88	10.50
49:	0.90	0.89	0.82	0.83	0.77	0.78	0.77	0.71	0.70	0.72	7.90
50:	0.70	0.65	0.68	0.66	0.62	0.61	0.60	0.58	0.58	0.57	6.23
51:	0.52	0.57	0.55	0.33	0.45	0.42	0.38	0.37	0.34	0.35	4.28
52:	0.30	0.33	0.33	0.27	0.26	0.25	0.23	0.22	0.22	0.21	2.62

53:	0.18	0.20	0.18	0.16	0.15	0.16	0.16	0.17	0.13	0.16	1.65
54:	0.15	0.13	0.12	0.07	0.11	0.09	0.08	0.08	0.08	0.08	1.00
55:	0.08	0.08	0.08	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.67
56:	0.04	0.06	0.04	0.03	0.05	0.03	0.04	0.04	0.04	0.04	0.41
57:	0.04	0.03	0.03	0.02	0.03	0.05	0.04	0.03	0.03	0.04	0.33
58:	0.04	0.03	0.03	0.04	0.02	0.04	0.03	0.03	0.03	0.02	0.32
59:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.03	0.03	0.29
60:	0.03	0.03	0.04	0.02	0.03	0.02	0.03	0.02	0.03	0.03	0.28
61:	0.03	0.03	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.03	0.25
62:	0.04	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.02	0.02	0.24
63:	0.03	0.03	0.02	0.01	0.02	0.03	0.02	0.02	0.02	0.02	0.21
64:	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.01	0.21
65:	0.03	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.03	0.23
66:	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.21
67:	0.02	0.03	0.02	0.02	0.01	0.02	0.01	0.02	0.02	0.02	0.18
68:	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.12
69:	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.01	0.07
70:	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03
71:	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
72:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
73:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
74:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
76:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Statistics Chart

Monitoring Station #4 Nighttime Period: Statistics Chart

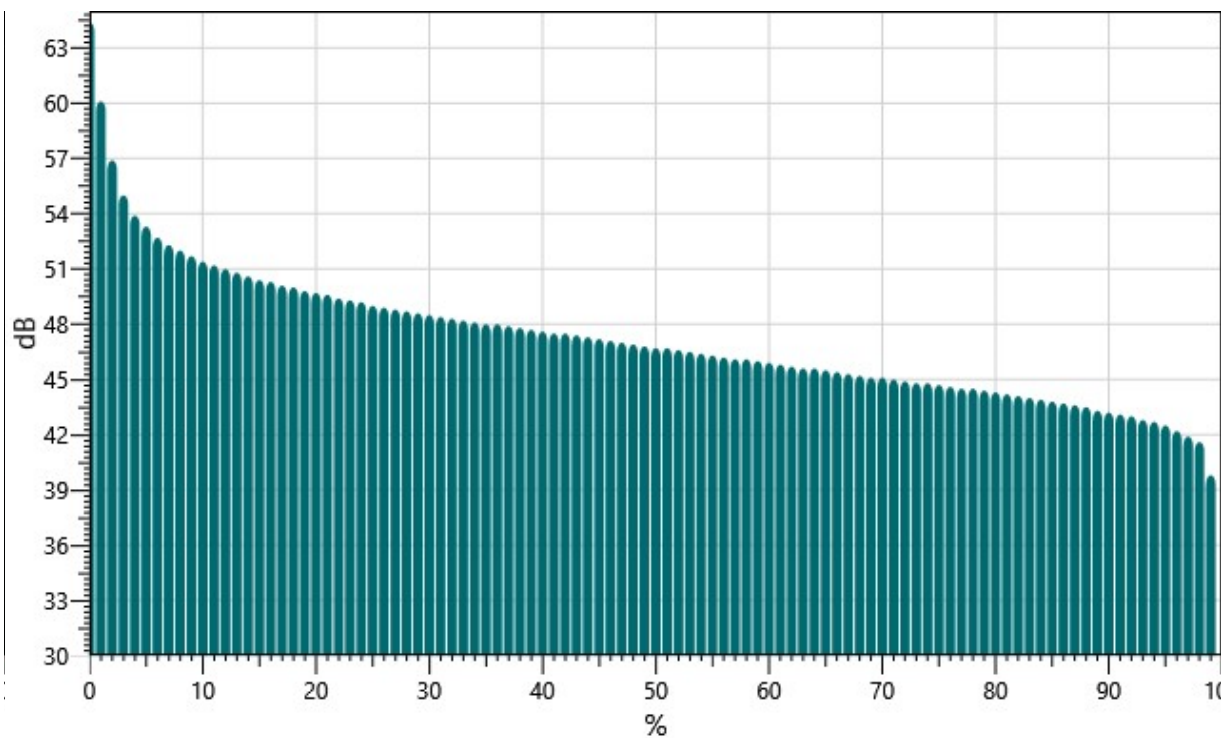


Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		64.4	60.1	56.9	55.0	53.9	53.3	52.7	52.3	52.0
10%:	51.7	51.4	51.2	51.0	50.8	50.6	50.4	50.3	50.1	50.0
20%:	49.8	49.7	49.6	49.4	49.3	49.2	49.0	48.9	48.8	48.7
30%:	48.6	48.5	48.4	48.3	48.2	48.1	48.0	48.0	47.9	47.8
40%:	47.7	47.6	47.5	47.5	47.4	47.3	47.2	47.1	47.0	46.9
50%:	46.8	46.7	46.7	46.6	46.5	46.4	46.3	46.2	46.1	46.1
60%:	46.0	45.9	45.8	45.7	45.6	45.6	45.5	45.4	45.3	45.2
70%:	45.1	45.1	45.0	44.9	44.8	44.8	44.7	44.6	44.5	44.5
80%:	44.4	44.3	44.2	44.1	44.0	43.9	43.8	43.7	43.6	43.5
90%:	43.3	43.2	43.1	43.0	42.8	42.7	42.5	42.2	41.9	41.6
100%:	39.8									

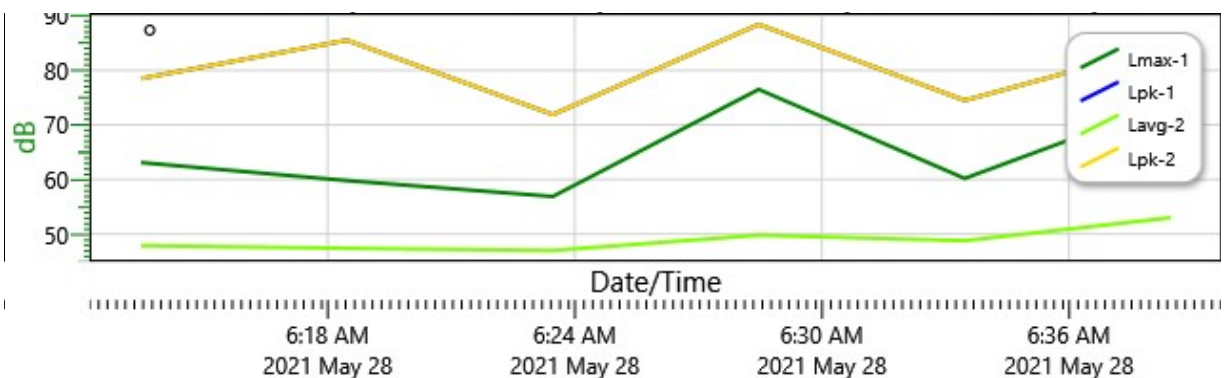
Exceedance Chart

Monitoring Station #4 Nighttime Period: Exceedance Chart



Logged Data Chart

Monitoring Station #4 Nighttime Period: Logged Data Chart



APPENDIX 4: FIELD NOTES

[illegible]

Noise Survey Field Notes Form

Project Name: Star Management Corp.- Brisas de Arroyo
 Project Location: Arroyo, Puerto Rico
 Calibrator Serial Number: AC-300009487
 Calibration Value: 114 dB
 Equipment Serial Number: BLP070008
 Equipment Serial Number: _____

Daytime Measures

Monitoring Station (MS)	Location	Comments
MS #1	Located North of the site on Highway O	Coord: (17.972138,-66.058743)
MS #2	Located West of the site	Coord: (17.971477,-66.059411)
MS #3	Located South of the site on Highway E	Coord: (17.970787,-66.058397)
MS #4	Located East of the site	Coord: (17.972138,-66.058743)

Nighttime Measures

Monitoring Station (MS)	Location	Comments
MS #1	Located North of the site on Highway O	Coord: (17.972138,-66.058743)
MS #2	Located West of the site	Coord: (17.971477,-66.059411)
MS #3	Located South of the site on Highway E	Coord: (17.970787,-66.058397)
MS #4	Located East of the site	Coord: (17.972138,-66.058743)

Notes:

*Take photos by monitoring station

Weather: The weather was cloudy.

Traffic: During the study there was a lot of vehicular traffic

Adjacent roads or street: Highway PR 178 Arroyo, Puerto Rico

Other surroundings noise: Birds singing.

Others:



[illegible]

Item #	Description
	<u>Nocturno</u>
#1	
	H. Comienzo : 4:30 am
	H. Final : 5:00 am
	Aves Cantando en todo momento
	Coord: 17.972138, -66.058743
4:35am	Alarma Sonando (Hasta 4:39 am)
#2	Coord: 17.971477, -66.059411
	H. Comienzo : 5:03 am
	H. Final : 5:33 am
	Aves Cantando en todo momento
5:08	Auto pasando
5:12	" " " "
5:16	" " " "
5:17	Gente hablando
5:22	Pero ladrando
5:26	Auto pasando
5:28	" " " "
5:32	" " " / Pero ladrando
#3	Coord: 17.970787, -66.058397
	H.C. 5:37 am
	H.F. 6:07 am
	Aves Cantando en todo momento
5:39	Auto pasando
Take photographs during assessment 5:40 Auto pasando / 5:41 Auto pasando	

5:46 Auto pasando
 5:51 Buho cantando
 5:54 Auto pasando / Pero ladrando
 6:05 Gente hablando

[illegible]

Diurno

#1 H.C. 7:00 am
H.F. 7:30 am

7:01 Auto con Musica
7:08 " " "
7:12 " " "
7:17 " " "
7:20 " " "
7:22 " Encendiendo
7:23 Auto pasando
7:24 Trimmer Encendido
7:26 Gente hablando
7:29 Auto pasando

#2 H.C. 7:33 am Foto (#4)
H.F. 8:03 AM

Constante movimiento vehicular
durante Monitoreo

7:35 perro ladrando
7:40 camion pasando por el area.
7:52 Auto pasando
7:53 Bocina Auto
7:52 a Gente hablando
7:55
7:58 Perro Ladrando
7:59 " " "
8:01 Gallo Cantando

#3

HC: 8:07 am
HF: 8:37 am

Aves cantando

8:10 auto pasando
8:13 Camion(ruido)
8:22 Trimmer encendido
8:23 Auto pasando
8:26 Auto pasando
8:35 " " "

#4

HC: 8:38 am
HF: 9:08 am

8:44 Aves Cantando
8:48 bocina auto

Durante el monitoreo habia
una quagua de sonido
por las alrededores de la
predio

8:50 auto encendido
8:52 bocina auto
9:03 Gallo cantando



GOBIERNO DE PUERTO RICO

PUERTO RICO PLANNING BOARD

January 26, 2021

Mr. Jorge L. Trigo Córdova

21 Calle Turquesa

Alto Apolo

Guaynabo, PR 00969

CZ-2022-0930-043

Application for Federal Consistency Certification with the

Puerto Rico Coastal Zone Management Program (PRCZMP)

Federal Assistance from the Department of Housing and Urban Development

Brisas de Arroyo Residencial Project

Arroyo, Puerto Rico

Dear Mr. Trigo:

The above referenced project does not require a Federal Consistency Certificate with the Puerto Rico Coastal Management Program. The project at reference will take place out of the coastal zone limits and/or is not expected to affect natural resources, land uses, or water uses in the Puerto Rico coastal zone.

However, we wish to advise you that the land according to the FEMA Advisory Maps of April 13, 2018, 46.9% of the proposed project land parcel is located within an "A" Zone. Therefore, it is recommended to take into consideration the recommended base flood levels for the location of electrical generators, accesses, or other infrastructure to be improved.

This determination does not preclude the possibility of needing to obtain any other permit or endorsement from other state or Federal Agencies.

Thanks for your cooperation with our Program.

Cordially,

Sixto A. Machado Ríos

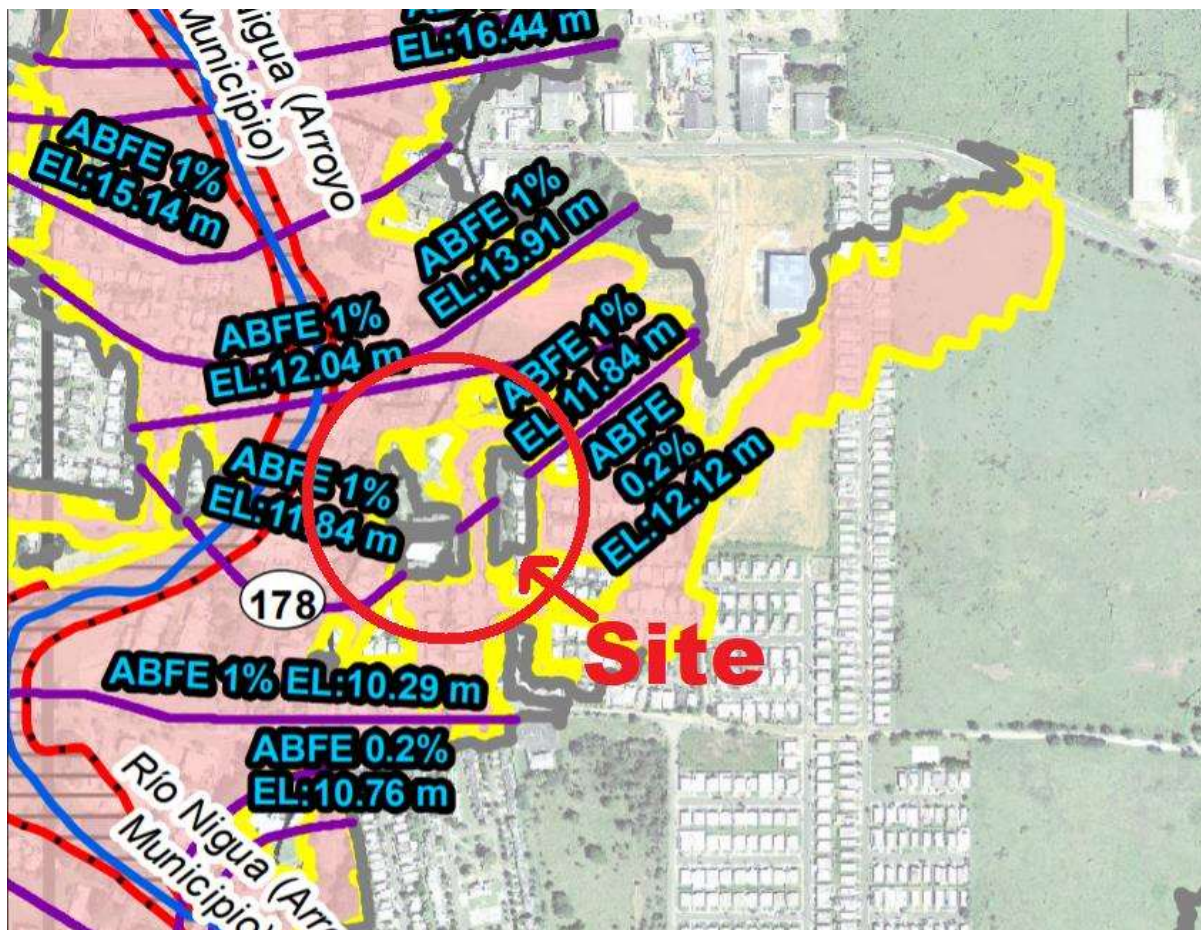
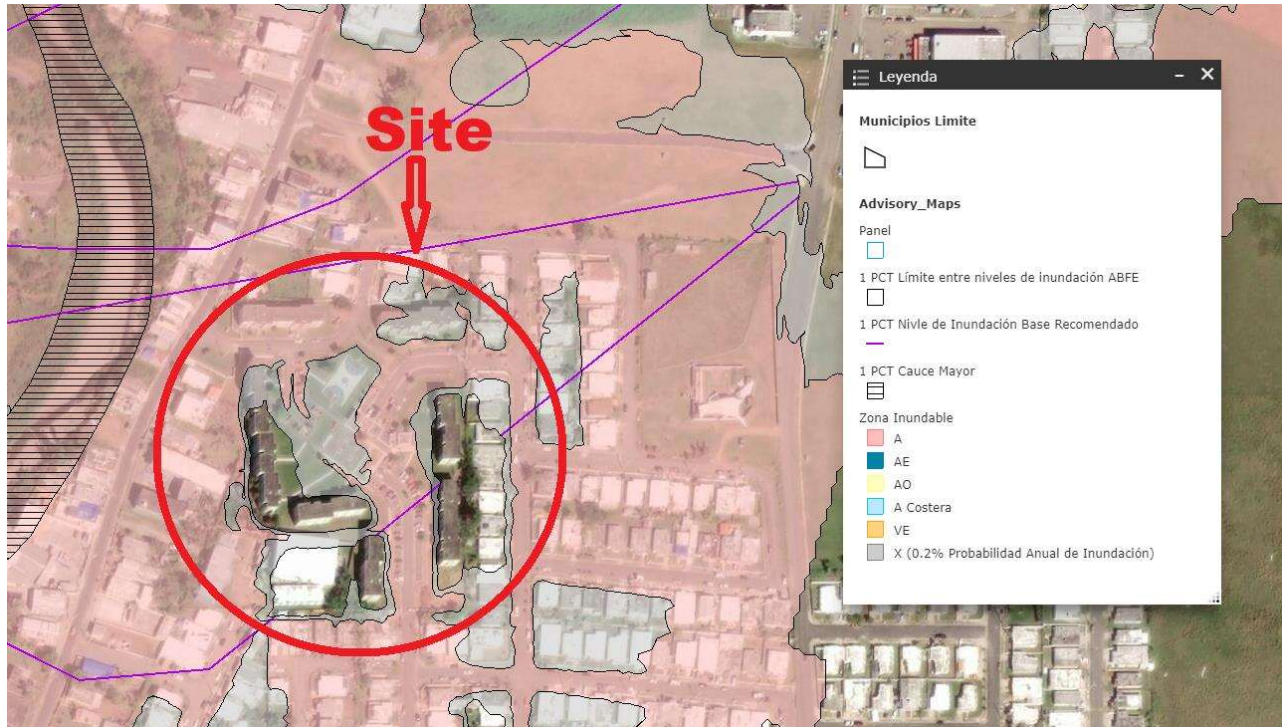
Director

Office of Geology and Hydrogeology

c: Daniel Galán Kerkado, Agent







NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations converted to tenth-meter elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only inland of 1.0m Mean Sea Level (MSL). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in **Special Flood Hazard Areas** may be protected by flood control structures. Refer to Section 24 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 18. The horizontal datum was NAD 83. GRS80 spheroid. Differences in datum, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the Mean Sea Level. These flood elevations must be applied to structures and ground elevations referenced to the same vertical datum. For information regarding vertical datum, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NGA, NWS512
National Geodetic Survey
5565-C-3
1315 East-West Highway
Belt Spring, Maryland 20715-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was derived from multiple sources. Digital orthophotography was obtained from imagery acquired by the U.S. Army Corps of Engineers, St. Louis District at one meter ground resolution flown on September 26, 2004, and imagery acquired by the Federal Emergency Management Agency at a scale of 1:120,000, flown in November 2003, February/March 2005, and January 2006.

This map reflects more detailed and up-to-date stream channel and shoreline configurations than those shown on the previous FIRM for this jurisdiction. The floodways and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel and shoreline configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel changes that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a listing of Communities table containing National Flood Insurance Program data for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-6616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9630 and its website at <http://www.msc.fema.gov>.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2827) or visit the FEMA website at <http://www.fema.gov>.



This digital Flood Insurance Rate Map (FIRM) was produced with the assistance of the Puerto Rico Planning Board (PRPB, Junta de Planificación), the National Flood Insurance Program administrator for the Commonwealth of Puerto Rico. As part of this effort, PRPB, a Federal Emergency Management Agency Cooperating Technical Partner, will adopt this FIRM, once finalized, as the official flood map for the Commonwealth.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) LEGEND

11-16-1990 CBRS Area

FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER NOVEMBER 16, 1990, IN DESIGNATED CBRS AREAS.

11-16-1991 Otherwise Protected Area (OPA)

FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER NOVEMBER 16, 1991, IN DESIGNATED OPA's WITHIN THE CBRS.

Boundaries of the **John H. Chafee Coastal Barrier Resources System (CBRS)** shown on this FIRM were transferred from the official CBRS source maps for this area and are depicted on this FIRM for informational purposes only. The official CBRS maps are enacted by Congress via the Coastal Barrier Resources Act, as amended, and maintained by the U.S. Fish and Wildlife Service (FWS). The official CBRS maps used to determine whether or not an area is located within the CBRS are available for download at <http://www.fws.gov>. For an official determination of whether or not an area is located within the CBRS, or for any questions regarding the CBRS, please contact the FWS field office for this area at (787) 851-7297.

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, ABB, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

Zone A No elevation of floodwaters determined.
Zone AE Base Flood Elevations determined.
Zone AH Flood depths of 0.3 to 0.9 meter (usually areas of ponding); Base Flood Elevations determined.
Zone AO Flood depths of 0.3 to 0.9 meter (usually sheet flow on sloping terrain); average depths determined. For areas of shallow flood, velocities are determined.

Zone AR Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently abandoned. Zone AR indicates that the former flood control system is being retained to provide protection from the 1% annual chance flood or greater flood.
Zone ABB Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

Zone V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
Zone VE Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachments so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS
Zone X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 0.3 meter or with drainage areas less than 2.5 square kilometers; and areas protected by levees from 1% annual chance flood.

OTHER AREAS
Zone X Areas determined to be outside the 0.2% annual chance floodplain.
Zone D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
at water surface or
CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas Zones and Coastal Barrier Resources System (CBRS) Areas
Base Flood Elevation line and value, elevation in meters
New Flood Elevation value where uniform within zone, elevation in meters

513
1:50,000
Cross section line
Transmit line
Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Universal Transverse Mercator grid values, zone 18N and UTM coordinates
500-foot grid (Kilo) Puerto Rico Virgin Islands State Plane coordinate system (PPSRN 2003), Lambert Conformal Conic projection
Bench mark (see explanation in Notes to Users section of this FIRM panel)
1:50,000
Map Scale

MAP REPOSITORY
Refer to Index of Map Panels on Map Index
EFFECTIVE DATE OF COMMENCEMENT OF PUERTO RICO AND MUNICIPALITIES FLOOD INSURANCE MAP
April 19, 2006
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

November 18, 2008 - to change Base Flood Elevations and to change Special Flood Hazard Areas

For community map revision history prior to Commonwealth of Puerto Rico and Municipalities map revision history, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-358-6616.

MAP SCALE
1:10,000
0 0.5 1 1.5 2 2.5 3 3.5 4
Kilometers
0 0.5 1 1.5 2 2.5 3 3.5 4
Miles

NATIONAL FLOOD INSURANCE PROGRAM
PANEL 2135J
FIRM
FLOOD INSURANCE RATE MAP
COMMONWEALTH OF
PUERTO RICO
AND MUNICIPALITIES

PANEL 2135 OF 2160
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY
PUERTO RICO
NUMBER
22005
PANEL
2135
SUFFIX
J

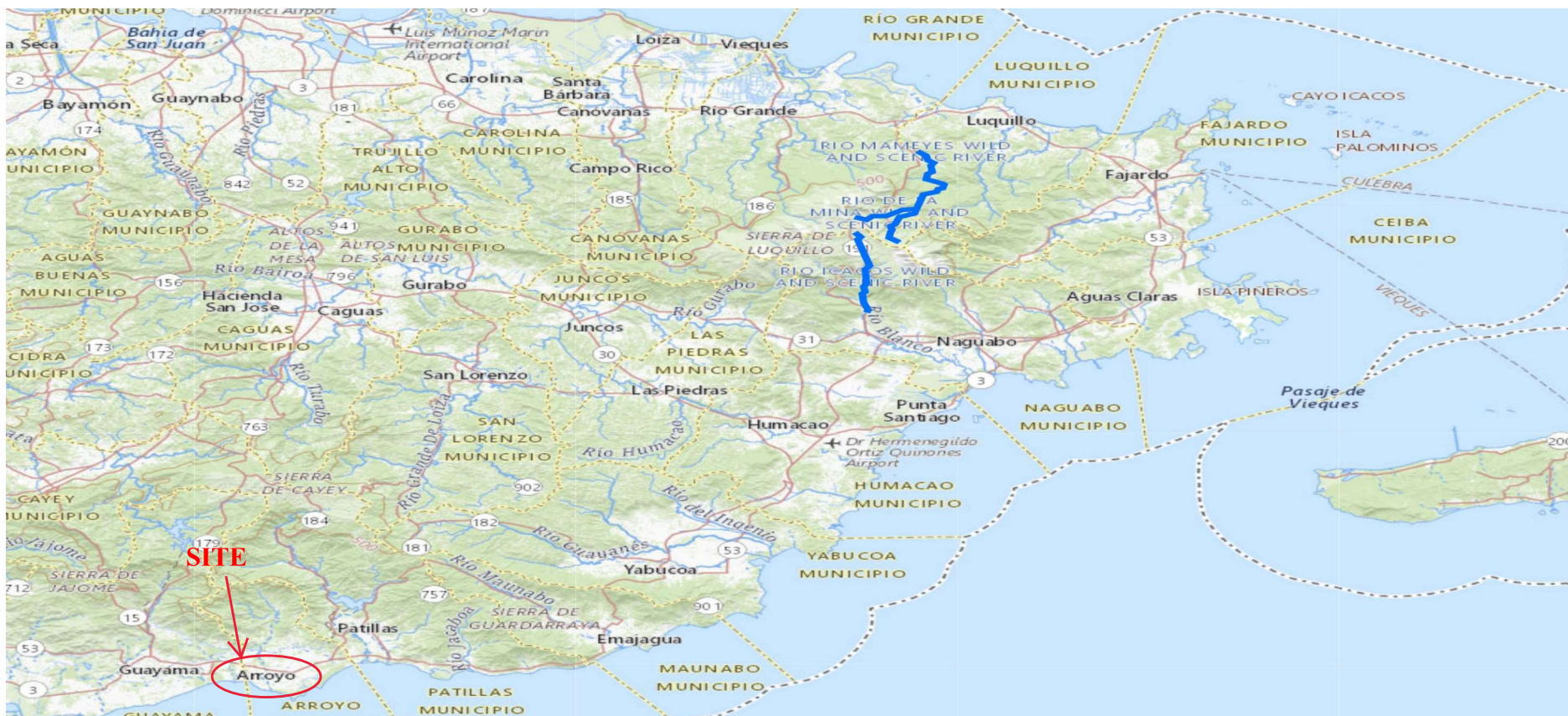
THIS MAP INCLUDES BOUNDARIES OF THE COASTAL BARRIER RESOURCES SYSTEM ESTABLISHED UNDER THE COASTAL BARRIER RESOURCES ACT OF 1982 AND SUBSEQUENT AMENDING LEGISLATION.
Notes to Users: The Map Number shown below should be used when ordering map prints. The Community Number and zone number should be used on insurance applications to the subject community.

MAP NUMBER
7200C2135J
MAP REVISED
NOVEMBER 18, 2009
Federal Emergency Management Agency



NATIONAL WILD AND SCENIC RIVERS SYSTEM

SITE INDEX

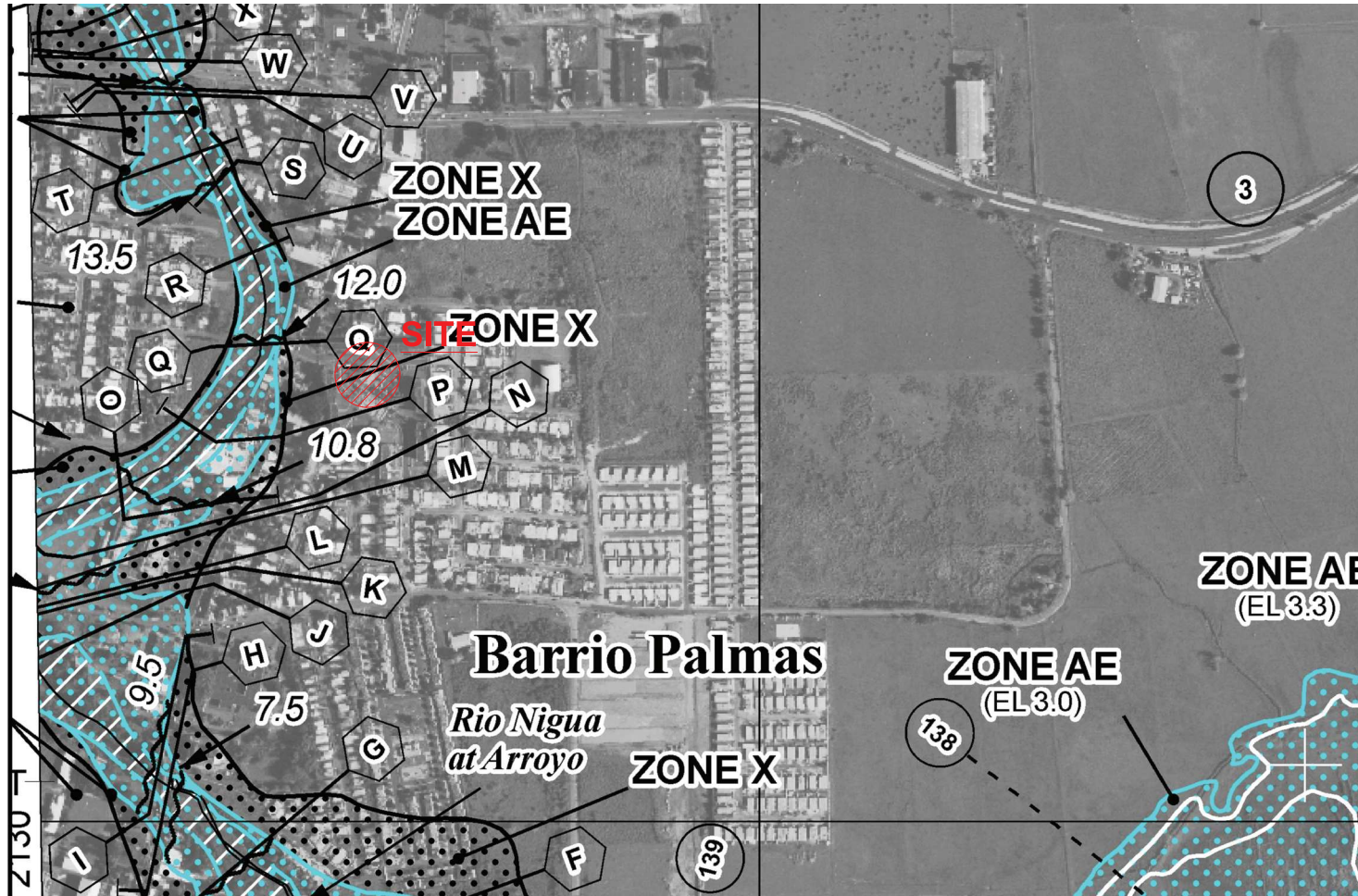
PUERTO RICO

SITE

Legend ↗

Wild & Scenic Rivers





LOCATION MAP
SCALE: N.T.S.

SURVEYORS' NOTE:

1. THE HORIZONTAL CONTROL USED ON THIS PLAN ARE P.R. LAMBERT NAD 83 Rev.2011 AND ELEV. ARE REFERRED TO ORTHOMETRIC HEIGHT (GEOID 12A).
2. ALL HORIZONTAL MEASUREMENTS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
3. LAMBERT SYSTEM WAS ESTABLISHED BY GPS OBSERVATIONS USING TRIMBLE R6 DOUBLE FREQUENCY RECEIVERS.

PROJECT NAME: Brisas de Arroyo
LOCATED AT: MORSE STREET (PR-178),
ARROYO, PUERTO RICO
CADASTRAL #: 421-081-061-07
EXISTING ENTRANCE:
LAT: 17°58'19.1611"N
LON: 66°03'33.3240" W
NORTHING: 215,386,967 M
EASTING: 239,622,975 M

SURVEYOR'S CERTIFICATION:

Existing Single Headed household is within the Zone X (99.4%) and 0.2 PCT (0.6%) according to National Flood Hazard/FIRMette Map 72000C2135J effective 11/18/2009.



PO. BOX 2075, AIBONITO, P.R., 00705
TEL. / FAX (787) 746-5039

PROJECT:

NATIONAL FLOOD HAZARD/FIRMETTE
FOR
BRISAS DE ARROYO
MORSE STREET INTERSECTION WITH O STREET,
PALMAS WARD, ARROYO, PUERTO RICO

CERTIFY CORRECT



FERNANDO SANTIAGO, P.L.S.
LIC. NO. 17316

FERNANDO
I am the author
of this document
2020-11-10
18:15-04:00

REVISIONS:

Rev. No.	Revised By	Revised Date	Scale	N.T.S.
1	F. SANTIAGO	OCT/22/20		
SHEET NO.	1	TOTAL SHEETS	1	



GOBIERNO DE PUERTO RICO
DEPARTAMENTO DE RECURSOS NATURALES Y AMBIENTALES

9 de junio de 2022

Sr. Rafael Ortiz
Controller
Star Arroyo, LLC
Calle Turquesa 2116
Alto Apolo
Guaynabo, PR 00969

Estimado señor Ortiz:

RE: Plan de Reciclaje de Construcción
Star Arroyo, LLC
Código de Inscripción: PRSP- FC- 1879
Proyecto: "Remodelación 104 unidades de apartamentos multifamiliares existentes en Brisas de Arroyo" ubicada en PR-178 (Morse St.), Km. 0.9 Pueblo Ward en Arroyo

Star Arroyo, LLC, sometió al Departamento de Recursos Naturales y Ambientales (DRNA) el Plan de Reciclaje de Construcción para el Proyecto **"Remodelación 104 unidades de apartamentos multifamiliares existentes en Brisas de Arroyo" ubicada en PR-178 (Morse St.), Km. 0.9 Pueblo Ward en Arroyo**, como parte de su cumplimiento ambiental. Después de evaluado, se determinó que cumple con los requisitos de la Ley Núm. 70 de 18 de septiembre de 1992, según enmendada. El DRNA le requiere que previo a la demolición, la estructura deber ser certificada libre de asbesto y plomo, Star Arroyo, LLC, deberá rendir informes trimestrales de progreso, en el formato provisto por el DRNA y con las certificaciones de los centros de acopio y reciclaje donde se llevan los materiales reciclables.

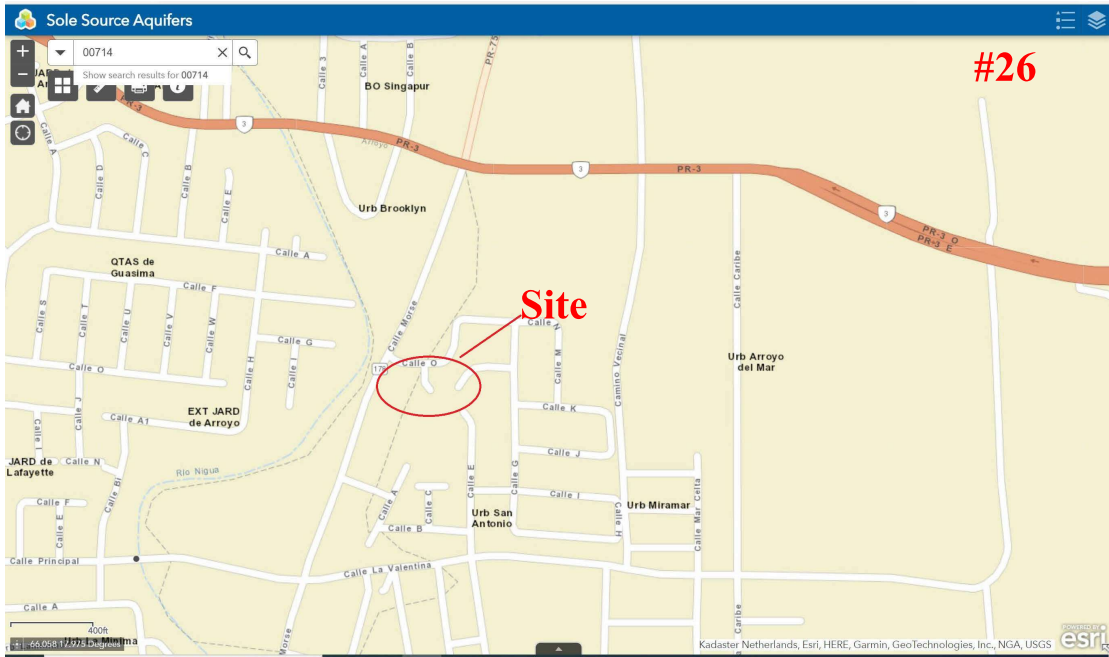
La vigencia del plan de reciclaje de Star Arroyo, LLC, 9 de junio de 2022 al 9 de diciembre de 2023. Se recomienda que treinta días antes de finalizado este término, deberán someter una solicitud de renovación de su Plan de Reciclaje, para nuestra evaluación y eventual certificación. El Departamento exhorta a Star Arroyo, LLC, a continuar implantando prácticas de reciclaje y manejo adecuado de los residuos sólidos. De conformidad con las leyes y la reglamentación vigente, el Departamento tiene la facultad de requerir o imponer cualquier otra consideración y requisito que entienda pertinente para garantizar el interés público y la protección del ambiente.

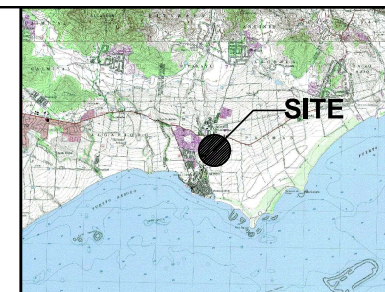
Para información adicional, puede comunicarse con la Sra. Nitza J. Galarza Flores, Educadora Ambiental II al 787-999-2200, extensión 4219.

Cordialmente,

María V. Rodríguez Muñoz
Directora
Área de Control de Contaminación de Terrenos
Secretaría Auxiliar de Cumplimiento Ambiental

MVRM/njgf





LOCATION MAP

SCALE: N.T.S.

SURVEYORS' NOTE:

1. THE HORIZONTAL CONTROL USED ON THIS PLAN ARE P.R. LAMBERT NAD 83 Rev.2011 AND ELEV. ARE REFERRED TO ORTHOMETRIC HEIGHT (GEOID 12A).
2. ALL HORIZONTAL MEASUREMENTS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
3. LAMBERT SYSTEM WAS ESTABLISHED BY GPS OBSERVATIONS USING TRIMBLE R6 DOUBLE FREQUENCY RECEIVERS.

PROJECT NAME: Brisas de Arroyo

LOCATED AT: MORSE STREET (PR-178),
ARROYO, PUERTO RICO

CADASTRAL #: 421-081-061-07

EXISTING ENTRANCE:

LAT: 17°58'19.1611" N

LONG: 66°03'33.3240" W

NORTHING: 215,386,967 M

EASTING: 239,622,975 M

SURVEYOR'S CERTIFICATION:

Existing Single Headed household is not within the Coastal Barrier Resources System according to Coastal Barrier Resources System Mapper Documentation.



PO BOX 2075, AIBONITO, P.R., 00705
TEL. / FAX (787) 746-5039

PROJECT:

USFWS-CBRA MAP
FOR
BRISAS DE ARROYO
MORSE STREET INTERSECTION WITH O STREET,
PALMAS WARD, ARROYO, PUERTO RICO

CERTIFY CORRECT



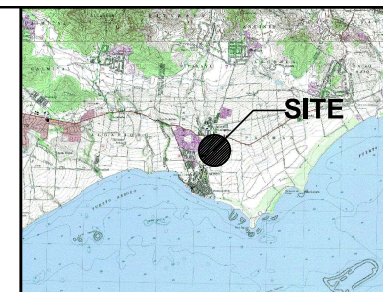
FERNANDO SANTIAGO, P.L.S.
LIC. NO. 17316

FERNANDO
I am the author
of this document
2020-11-10
18:16-04:00

REVISIONS:

REV.	DATE	BY	DESCRIPTION
1	2020-11-10	F. SANTIAGO	ISSUED

SHEET NO.	TOTAL SHEETS
1	1



LOCATION MAP
SCALE: N.T.S.

SURVEYORS' NOTE:

1. THE HORIZONTAL CONTROL USED ON THIS PLAN ARE P.R. LAMBERT NAD 83 Rev.2011 AND ELEV. ARE REFERRED TO ORTHOMETRIC HEIGHT (GEOID 12A).
2. ALL HORIZONTAL MEASUREMENTS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
3. LAMBERT SYSTEM WAS ESTABLISHED BY GPS OBSERVATIONS USING TRIMBLE R6 DOUBLE FREQUENCY RECEIVERS.

PROJECT NAME: Brisas de Arroyo
LOCATED AT: MORSE STREET (PR-178),
ARROYO, PUERTO RICO
CADASTRAL #: 421-081-061-07
EXISTING ENTRANCE:
LAT: 17°58'19.1611" N
LON: 66°03'33.3240" W
NORTHING: 215,386,967 M
EASTING: 239,622,975 M

SURVEYOR'S CERTIFICATION:

Existing Single Headed household is outside of any wetland delimitation area according to U.S. Fish and Wild Life Service, National Wetlands Inventory Map. Downloaded on October 14, 2020.



PO BOX 2075, AIBONITO, P.R., 00705
TEL. / FAX (787) 746-5039

PROJECT:

WETLAND INVENTORY MAP
FOR
BRISAS DE ARROYO
MORSE STREET INTERSECTION WITH O STREET,
PALMAS WARD, ARROYO, PUERTO RICO

CERTIFY CORRECT



FERNANDO SANTIAGO, P.L.S.
LIC. NO. 17316

FERNANDO
I am the author
of this document
2020-11-10
18:15-04:00

REVISIONS:

DATE	BY	REASON
OCT/22/20	F. SANTIAGO	N.T.S.
1	1	1
TOTAL SHEETS		



System

Find a Refuge Near You

Search by Facility Name



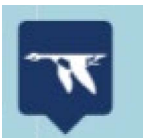
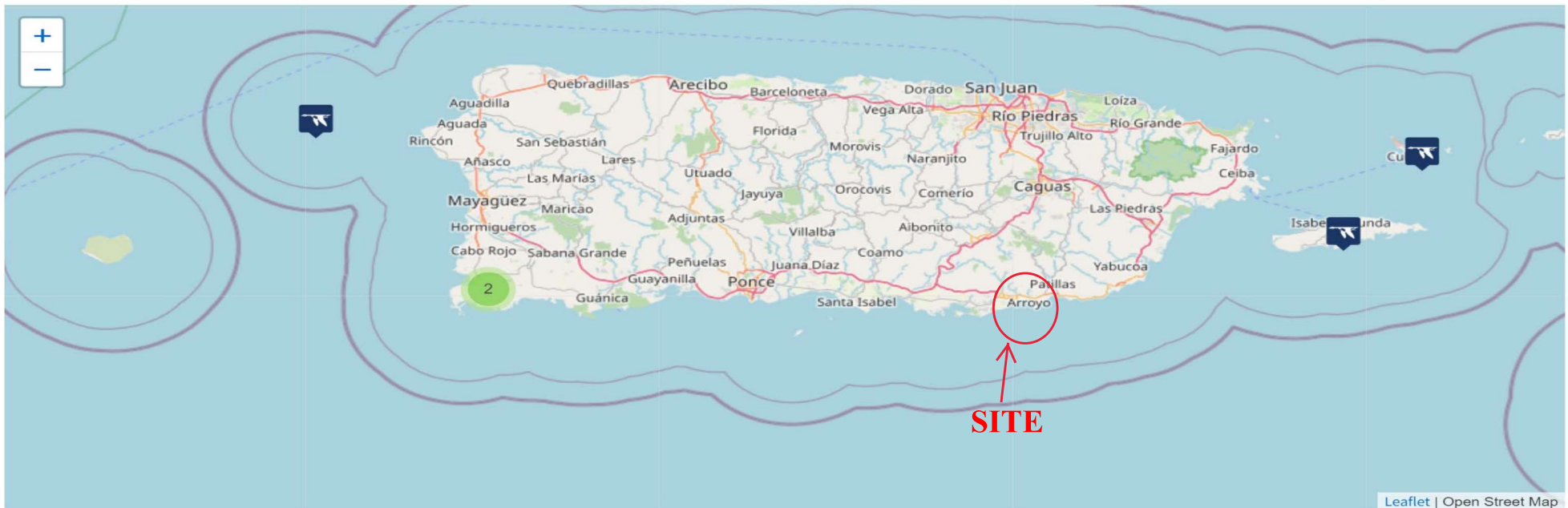
Facility Type

National Wildlife Refuge (6)



State

Puerto Rico

**Wildlife Refuge Site**