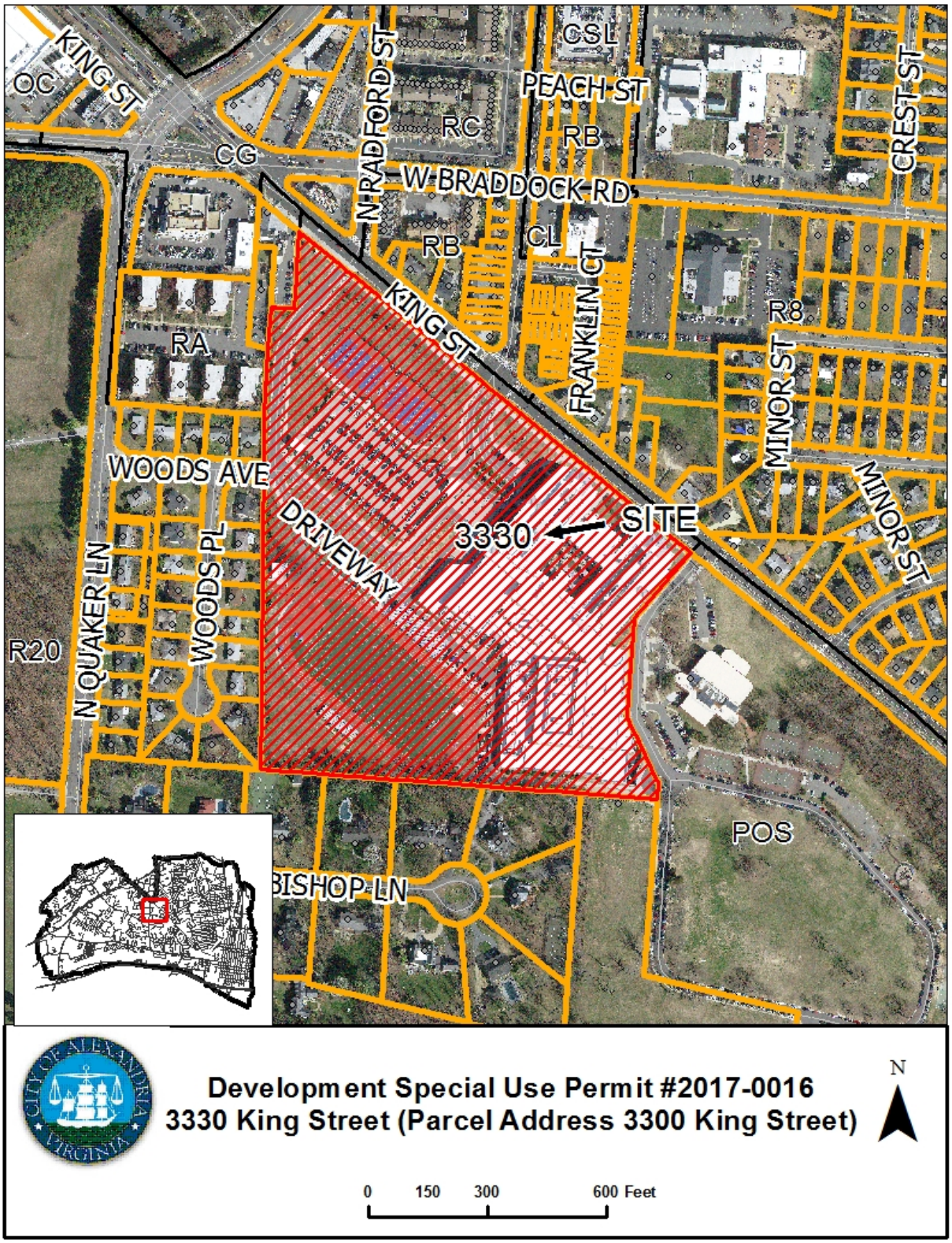
DOCKET ITEM #7
Development Special Use Permit #2017-0016
3300 King Street – TC Williams High School
Parker-Gray Stadium Modernization

Application	**General Data**	
Project Name: TC Williams High School Parker-Gray Stadium Modernization	PC Hearing:	October 2, 2018
	CC Hearing:	October 13, 2018
	If approved, DSUP Expiration:	October 13, 2021
	Plan Acreage: Limits of Disturbance:	23.68 acres (1,031,366 sf) .97 acres (41,167 sf)
Location: 3330 King Street **Parcel Address:** 3300 King Street	Zone:	R-20
	Proposed Use:	Public School
	Dwelling Units:	N/A
	Gross Floor Area:	N/A
Applicant: Alexandria City Public Schools	Small Area Plan:	Taylor Run / Duke Street Small Area Plan
	Historic District:	N/A
	Green Building:	N/A

Purpose of Application
To construct new accessory buildings and perform associated site improvements associated with the stadium including pedestrian, track and field site improvements, sound system upgrades, site lighting, and athletic field lighting.
Special Use Permits and Modifications Requested:
1. Amendment to an existing Development Special Use Permit with Site Plan to construct accessory structures and perform site improvements. 2. Special Use Permit to increase the height of athletic field light poles to 80 feet pursuant to proposed Zoning Ordinance Section 6-403(F), contingent upon approval of TA#2018-0007, or; Special Use Permit to increase the height of athletic field light poles to 60 feet pursuant to Zoning Ordinance Section 7-2100; zoned R-20/Single-family zone.

Staff Recommendation: APPROVAL WITH CONDITIONS
Staff: Rob Kerns, Division Chief, robert.kerns@alexandriava.gov Nathan Imm, Principal Planner, nathan.imm@alexandriava.gov Bill Cook, Urban Planner, william.cook@alexandriava.gov



PROJECT LOCATION MAP

I. SUMMARY

A. Recommendation & Summary of Issues

Staff recommends approval of the improvements as proposed.

Issues
Key issues associated with the proposal, discussed in more detail in this report, include:

- An amendment to the Development Special Use Permit allowing installation of lighting at Parker-Gray Stadium. This would remove one of the original conditions of approval for the School, which prohibited lighting for athletic facilities.
- The upgrade of athletic facilities including the press box, track resurfacing and lane expansion, and the replacement of the artificial turf playing field as a benefit for both the School and for the City's residents.
- The addition of restrooms, replacement of the concession building and relocation away from adjacent properties, ticket booth, pedestrian pathway improvements and lighting as a benefit to all visitors and users of the facility during events.
- The upgrade of the public address system.
- The replacement and relocation of the scoreboard away from adjacent properties.
- A Special Use Permit to permit athletic field lights to a maximum height of 80 feet to mitigate glare and control light spillage onto adjacent properties.

Recommendation

- Staff recommends approval of the DSUP with Site Plan application for the improvements proposed in the Parker-Gray Stadium Modernization project.
- Staff recommends approval of the amendment to the DSUP to allow installation of athletic field lighting at Parker-Gray Stadium.
- Staff recommends the approval of an SUP for athletic field lighting "Option A" as proposed.

B. General Project Description

This application is for a Development Special Use Permit and Site Plan Amendment seeking several improvements to the existing Parker-Gray Stadium site on the T.C. Williams High School campus. The stadium is located behind the school building and parking structure approximately 600 feet from King Street. New construction includes a restroom building, concession building, ticket booth, and modular press box structure. Improvements to existing site features consist of a new rubberized track surface with an added 8th lane, new synthetic turf field, and pedestrian circulation improvements. Plans also include a new scoreboard in a new location to replace an existing one, a new upgraded sound system, and new lighting for the athletic field and pedestrian pathways on the site.

The existing stadium site is uniquely constrained by its location directly abutting residential properties. Residences on Woods Place abut the stadium site along the School's western property line, and residences on Bishop Lane abut the School's southern property line.

II. BACKGROUND

A. Procedural Background

The current T.C. Williams High School had a Development Special Use Permit (DSUP) and Site Plan (DSUP#2002-0044) approved in January, 2004. A subsequent DSUP amendment was approved in December, 2013, to allow the construction of lighted tennis courts on School property adjacent to King Street then used as practice fields (DSUP#2013-0014). The conditions of approval for that DSUP were modified to amend the previous condition pertaining to "permanent stadium lighting" to permit the lighting for tennis courts, but to retain the prohibition on athletic facility lighting at Parker-Gray Stadium located at the rear of the School property.

The application under consideration seeks to amend the existing DSUP to permit improvements to the Parker-Gray Stadium site including new buildings and structures. The following factors require that the amendment be heard by the Planning Commission and City Council:

A. The scale of development and new structures surpass the thresholds for development that can be reviewed administratively;
B. The request for athletic field lighting requires amendment of a previous DSUP condition of approval;
C. The athletic field lighting proposed requires a Special Use Permit pertaining to an increase in height of the structures, per either the requirements of the existing Zoning Ordinance, or of the Zoning Ordinance to be amended as proposed (TA#2018-0007).

B. Site Context

T.C. Williams High School is located at 3330 King Street. The school building, tennis courts, and parking garage characterize the public view of the property from King Street. The Parker-Gray Stadium site is located behind the School and parking garage.

The triangular-shaped T.C. Williams site is surrounded by a variety of uses. On the opposite side of King Street lies a residential neighborhood comprising single family and townhouse dwellings. To its north-west lies an area consisting of the Oakland Baptist church, a service station and car dealership. To the west and south-west lie residential neighborhoods with both multi-family and single-family dwellings. The proximity of residential neighborhoods is key issue throughout the history of the School, and seventeen (17) single family homes directly abut the School property on two sides. To the south and south-east of the proposed site is Chinquapin Recreation Center and Chinquapin Park.

An important characteristic of the School's land use context is its centralized location on King Street, close to Braddock Road and Quaker Lane. The major arteries link the School to all areas of the City and provide students, staff, and residents with easy access to the School and the adjacent complex of recreational and community facilities. The site is also close to several light commercial centers, which include a variety of uses such as doctors' offices, gas stations, dry cleaners, a garden center, grocery stores, restaurants, and other retail establishments.

C. Project Evolution

Background

The existing Parker-Gray Stadium is located on the T.C. Williams High School campus and is a critical component of high school sports and recreation activities. The location is central and convenient to students and residents of the City. Growing school enrollment, the popularity of youth sports, and the scarcity of playing field space puts the facility in high demand. When not used for ACPS activities and events, ACPS current allows unprogrammed community recreational use of the facility for pickup games, use of the track, and use of the adjacent tennis courts.

While the School was replaced more than a decade ago, the Parker-Gray Stadium facility predates the existing school. Many features are outdated and/or due for replacement, and the facility overall does not provide a quality visitor or athletic experience. The existing press box is unsafe to use and has been condemned. The existing sound system is poorly designed, and some parts do not function. The artificial turf is at the end of its warrantied lifespan and needs replacing. The site does not have indoor restrooms and instead provides portable toilets. The track surface is due for replacement, and the track does not have the typical eight lanes, leading to scheduling issues that lengthen competitions. Additionally, the School is the only public high school among its Northern Virginia peers to lack athletic field lighting. This limits the ability to host certain events at typical times and causes scheduling bottlenecks for other users.

At the direction of the School Board, ACPS is seeking a series of improvements to modernize the facility to meet the needs of the current and future student population, and to provide a more welcoming experience for visitors.

Design Evolution

Several changes were made over the course of the project which City staff consider to be positive improvements. Many of these changes were in response to feedback received during the Community Meetings and incorporated new elements not part of the original project scope.

- Removal of the existing scoreboard which is located close to the property line and placement of a new scoreboard in a new location on the opposite end of the field.
- Selection of a firm to perform an acoustical analysis to ensure that the public address system design and placement optimized sound control.
- Location of concession buildings farther north and east.

- Reconfiguration of Building B floorplan to move active uses furthest from the property boundary.
- Application to allow taller light poles on the athletic field in order to mitigate glare on to adjacent properties and enhance light control.

Discussion of design choices and changes is included in more detail in the Detailed Project Description and Staff Analysis section that follows.

D. Detailed Project Description

This project consists of renovations to the Parker-Gray Stadium facility. The site is previously developed with existing playing field, track, bleachers, and accessory buildings. It is being used to support School athletic activities and is also available for informal unprogrammed community recreational use when not used by the School. New structures and facilities will be supported by existing water, sanitary, and storm water infrastructure. Existing on-site parking is unchanged. The project limits are within the existing Parker-Gray Stadium facility, which is located in the southwestern corner of the property, behind the school and parking garage. A proposed site plan showing planned improvements is found in *Appendix 1*.

The overall configurations and locations of the field and track remain the same. Existing features to remain include the bleachers and peripheral play facilities. The entry ramps and steps will remain in their current locations as will most internal sidewalks and landscape screening adjacent to the west and south property lines.

Renovations to existing features include replacement of the artificial turf playing surface and replacement of the rubberized track surface. The track will be expanded to accommodate an 8th track lane.

The existing scoreboard on the west side of the site will be replaced by a new scoreboard located on the southeast side of the site. The existing press box located behind the home bleachers will be demolished, and a new press box will be placed behind the visitor bleachers on the opposite side.

Once inside the stadium, existing sidewalks lead to the home team bleachers to the left, and a new concession area to the right. Two existing concession and storage buildings in close proximity to the residential property lines will be removed and replaced by the concession area consisting of two new buildings in an inverted “L” configuration on the northwest side of the site. Building A is the smaller of the two and will house food and drink service. Building B will house restrooms, storage for athletic equipment, and a covered seating area. The buildings will also replace several portable toilets. The concession buildings front on a small plaza area with seating, landscaping, lighting, and seat walls. A lighted path with new widened paving outside the track perimeter leads to the visitor bleachers.

Visitors to the stadium site will encounter a new entry canopy and ticket booth at the site entrance. The new entry canopy identifies the stadium and is an enhancement to the existing steps and ADA-accessible ramp. The ticket booth is new and will replace an existing wooden structure.

A new sound system with multiple speakers located close to the viewing areas will replace an old bullhorn style system that is mounted on the existing press box.

Proposed lighting for the site consists of new athletic field lighting and site lighting around the concession area and to illuminate the path to the visitor bleachers. The athletic field lighting consists of four (4) poles located just outside the track perimeter. An increase in the height of the proposed light poles is sought in order to minimize perceived glare seen from surrounding properties. Lighting must comply with existing City ordinances limiting light spillage onto adjacent properties.

A series of conditions has been proposed regulating the hours and usage of the facilities. Refer to Staff Recommendations and Conditions.

III. ZONING

Property Address: 3330 King Street
Parcel Address: 3300 King Street
Total Site Area: 23.68 ac (1,031,366 sf)
Zone: R-20

	Existing	**Permitted/Required**	**Proposed**
Use	Public School		Public School
FAR	0.51	0.60 (1)	0.52
Gross Floor Area	537,490 sf	--	540,786 sf
Tree Canopy	271,064 sf (26%)	257,842 sf (25%)	280,615 (27%)
Setbacks			
Front	44.3 feet	70 feet	44.3 feet (2)
Side (east)	0 feet	25 feet	0 feet (2)
Side (west)	25 feet	25 feet	25 feet
Rear	25 feet	25 feet	25 feet
Height	53 feet building (2)	60 feet (1) (School use)	80 feet (3) (light poles)
Parking	444 spaces	250	444 spaces
Loading spaces:	2	0	2

Notes:
(1) Maximum, for public schools, per Section 7-2100, with an SUP.
(2) Existing. Approved per DSUP2002-0044.
(3) Contingent upon approval of TA2018-0007. Applicant proposal includes: (2) 80' light poles, (2) 70' light poles.

IV. STAFF ANALYSIS

A. Provision of Athletic facilities for the School and Community

The proposed improvements will better accommodate athletic programs and activities at T.C. Williams and offer an upgrade in facilities as well as the ability to extend practice and competition duration through the proposed lighting.

By allowing public access to the Parker-Gray Stadium grounds outside of School usage hours, the facility provides benefit to the City's residents. As an athletic facility associated with a public school, and in the vicinity of both the School's other athletic facilities and to Chinquapin Recreation Center, the continued provision of the athletic field and track at this location is considered by City staff to be a suitable use.

B. Site Design

The location of the existing Parker-Gray Stadium is in a triangular area in the southwestern portion of the T.C. Williams High School site. The stadium dates to the construction of the original school building in 1965 (Site Plan #63-086). The existing school building was subsequently constructed close to the stadium, particularly on the east side. The playing field is as much as ten (10) feet above the surrounding grade, resulting in a slope along the northern edge of the stadium area.

These factors and others limit the ability to expand the stadium footprint or rearrange certain stadium amenities. However, efforts were made to move structures and uses as far away from property lines as possible and to confine site elements close to the track and field perimeter. Refer to *Appendix 1* for proposed site plan, location of new features, and features to be removed or relocated.

Building Locations

Two existing structures located closely together on the west side of the property will be removed. These include an 8-foot by 10-foot storage shed eight (8) feet from the property line and a 990 square foot brick concession and storage building located 29 feet from the property line.

For the proposed new concession and restroom facilities, different options were explored in order to balance the applicant's design objective of moving structures away from property lines as far as possible, with the additional objective to create a public gathering place with good on-site circulation. A design choice was to use the buildings themselves as a barrier between site activity and the adjacent residential properties.

Initial designs tried to save a large tree, but the resulting layout removes the tree in order to place the buildings furthest east away from property lines. The result diverts on-site foot traffic and activity away from adjacent properties while creating an active public space around the restrooms and concessions that is intimate and close to the activity of the playing field.

The two new buildings form an inverted "L" configuration on the west side of the site. The buildings front on a small plaza area with seating and a paved lighted path outside the track perimeter that leads to the visitor bleachers. Building A (concessions) is the smaller of the two and will be located a minimum of 120 from the property line. Building B (restrooms and storage) will angle away from neighboring properties from between 25 and 80 feet from the property line along the 80 foot length of the back wall of the structure.

All buildings and structures as proposed comply with zoning ordinance requirements.

Track and Field Improvements
Proposed plans include the expansion of the track from seven (7) lanes to eight (8) with a new rubberized surface. The additional lane made possible by improvements to the perimeter of the track more closely meets competition standards. A resurfacing of the artificial turf playing field is also part of the project. The plans comply with requirements for storm water management.

Scoreboard
The existing scoreboard is located along the west side property line within the required 25-foot side yard setback and is approximately eight (8) feet from the property line at its closet point. A proposed new scoreboard is proposed on the east side of the field that is 37 feet at minimum from the property line and complies with required setbacks. The new scoreboard is 25 feet wide with a total height of 18 feet.

Press Box
A new structure will be located behind the visitor bleachers and is a minimum of 100 feet from property lines. The reorientation from south-facing to north-facing improves visibility for scorekeeping and visual recording during events.

C. Building Design

Renderings of proposed new buildings can be found in *Appendix 5*.

Ticket Booth & Entry Canopy
The 130 square-foot ticket booth is a simple "stone gray" brick structure with the customer-facing wall clad in colored panels with varying red tones. Graphic elements identifying the ticket booth are fabricated of aluminum and affixed to the brick. A similar design theme is found on the other new structures located beyond the stadium entry. The entry canopy identifies the site entrance. Several ticket booth placement options were presented during the Community Meetings, however the existing location to the left of the existing steps was considered by the applicant and the community to be the best in terms of establishing a control point to the site, queuing, and fitting in with the existing context and site design.

Building A
Building A is a 340 square-foot, twelve (12) foot tall flat-roofed structure for food and drink sales during events. The north wall, which will be visible upon entering the stadium grounds, is dark-gray brick with a team graphic. The east and west walls are clad in colored panels in varying shades

of blue. The south wall is brick with a red paneled door that flips up to reveal the counter sales area. When open, the door forms a canopy over the counter. An aluminum beverage cup graphic on the adjacent wall identifies the use.

Building B

Building B is 2,520 square feet and houses restrooms and storage for athletic equipment. The building has a sloped roof with a height of 13 feet 9 inches on the south side, rising to 15 feet 8 inches on the north side as the building extends away from the property line. The gray brick walls on all sides are approximately 10 feet in height with clerestory windows between the walls and roof. The windows have a translucent coating on the west, north, and south sides. A recessed restroom entry area with drinking fountains can be secured by a shed-style wooden rolling door when not in use. The north end of Building B has an overhang covering an approximate 29-foot by 20-foot seating area complimenting concession Building A. The athletic storage area is located farthest south and is accessed by doors on the rear of the building.

The architecture of the two buildings is simple and low. Building B is most like a park pavilion, and the clerestory windows provide natural daylight. The overhang with outdoor seating further supports the park-like function. The internal layout of Building B was revised in response to community concerns that the restrooms be placed furthest away from surrounding properties. The stadium site is currently served by three (3) portable toilets located near the existing concession building and the vehicle service drive/entrance at the north west corner of the side.

Press Box

The press box is a prefabricated structure on columns located behind and accessed via the visitor bleachers. The 306 square foot building is 36 feet long and will have a total height of 28 feet including the safety railing atop the viewing platform on the flat roof of the building. Representative images are included with the submitted plans which show painted metal cladding with metal railings. The structure has large windows facing the field and will house gameday operations and broadcast/recording functions.

The total height of the press box, supporting structure, and rooftop safety barrier is 28 feet 3 inches. The new press box replaces the condemned 200 square foot press box behind the home bleachers which is structurally unsafe.

D. Lighting

The lighting of athletic facilities at T.C. Williams is an important issue, and one much discussed at the planning, design and community outreach stages of the Parker-Gray Stadium Modernization project. Several of the conditions of approval for the original DSUP of the existing School concern lighting, and one condition prohibits lighting for athletic facilities. DSUP#2002-0042, Condition #85 states:

> "No permanent stadium lighting shall be installed at the School stadium or on any other athletic fields, including the proposed new practice field."

DSUP#2013-0014, relating to the construction of tennis courts on the former site of the practice field, was subsequently approved. Included with that application was a request for lighting for the courts. Previous conditions from DSUP#2002-0042 were carried forward with amendments, including an amendment to Condition #85 as follows:

> "No permanent stadium lighting shall be installed at the School stadium or on any other athletic fields, except as to allow for the lighted tennis courts proposed under the DSUP2013-0014 submission. For the courts, the number of poles, mounting heights and the light types shall be consistent with the Preliminary Plan dated 10/01/13 for DSUP2013-0014."

This change allowed lighting specifically for the tennis courts but retained the condition restricting lighting at the school stadium. The tennis court lighting comprises sixteen (16) poles with fixtures mounted at 30 feet in height. The lighting is operated on-demand with timers that limit the hours of use in the evening to a 10 p.m. cut-off.

To permit the field lighting at Parker-Gray Stadium, the applicant requests removal of the development condition limiting permanent stadium lighting on the T.C. Williams High School site.

The applicant is seeking the athletic field lighting at Parker-Gray Stadium in order to more efficiently use the facility. Among 29 peer public high schools in the Virginia High School League (VHSL) including most high schools in neighboring Arlington and Fairfax Counties, T.C. Williams is the only facility not having a lighted high school football stadium. Football games in most jurisdictions are held on lighted fields on Friday evenings. However, the lack of lights and limited ability to use the site puts constraints on other uses besides football.

During community meetings, some parents noted the inability to schedule games on Friday evenings causes conflicts with other sports and activities which would otherwise use the facility during the daytime on a Saturday. Many parents and athletes noted the scheduling difficulties posed by the limited hours of usage, such as the inability for some parents to attend events during the daytime hours due to work schedules, or the challenges of arranging transportation to and from student activities because of the time constraints.

Proposed Lighting

The applicant request includes four (4) poles to support athletic field lighting. These are located on the north side of the stadium near the home bleachers, and on the south side of the stadium near the visitor bleachers. The poles are placed outside the perimeter of the track. The plan also includes eleven (11) 12-foot tall pedestrian lights along the path from the concession area to the visitor bleachers on the south side of the playing field. The pole locations are shown in ***Appendix 2***.

The height regulations of the zoning ordinance for the R-20/Single-family zone permit a maximum height of 40 feet for school uses. From a technological standpoint a 40-foot height limit for lighting a large area such as a football field is not desirable. At such a height the lights would need to be aimed to project horizontally across the field surface. This would cause too much glare and light spill onto adjacent properties. A supplementary zone regulation within the zoning ordinance

(Section 7-2100) permits an increase in density or height for public elementary or secondary schools. Under this provision, an increase to 60 feet in height can be sought, subject to approval of a Special Use Permit.

A text amendment to the zoning ordinance (TA#2018-0007) is proposed by the City pertaining to congregate recreational facilities and associated lighting. The amendment proposes that light poles for congregate recreational facilities be permitted with a Special Use Permit to a maximum of 80 feet in height. Additional height for this particular use is desirable because such height allows the current lighting technology to more effectively control the light pattern and to minimize perceived glare onto surrounding properties.

Lighting must comply with existing City ordinances limiting light spillage onto adjacent properties to a maximum of 0.25 footcandles seven feet beyond the property line.

This DSUP application includes two different scenarios pertaining to the height of the poles for athletic field lighting. The applicant's preferred option, "Option A," proposes two (2) 80-foot tall poles on the north side of the field, and two (2) 70-foot tall poles on the south side of the field. "Option A" is contingent upon the adoption of the text amendment. If the amendment is approved, the applicant would then subsequently request a Special Use Permit under the provisions of that amendment as associated with this application.

"Option B" proposes four (4) 60-foot tall poles, two on the north side and two on the south. This option requires a Special Use Permit pursuant to zoning ordinance Section 7-2100 pertaining to increased density and height for public elementary and secondary schools. The applicant would request a Special Use Permit for lighting with 60-foot tall poles in the event that the proposed text amendment was not approved. Typical assemblies for the lighting equipment being used in either option is shown in *Appendix 7*.

Zoning Ordinance: Lighting
A requirement for any DSUP is the submission of photometric diagrams indicating compliance with the lighting ordinance. Two photometric scenarios were submitted with the application, each with options "A" and "B" as previously described. Both lighting analyses include the proposed pedestrian lighting in addition to athletic field lighting.

Code of Ordinances Section 13-1-3 regulates light spillage onto residential properties from adjacent residential or commercial properties. The maximum light spillage is 0.25 horizontal footcandles into the rear or side yard of the property used for residential purposes when measured seven (7) feet beyond the property line. *Footcandles* are a measure of how much light falls onto a surface. As shown in *Table 1,* both lighting proposals surpass the requirements for light spillage.

The photometric analyses demonstrate that the estimated value in horizontal footcandles for both the taller pole option ("Option A"), and the 60' option ("Option B") is the same, 0.026 footcandles, which is well below the ordinance maximum. A summary of the photometric analysis is shown in *Table 1*. Either pole height option would comply with the ordinance.

Table 1

Summary of Photometric Analysis

	Ordinance	Option A (80'/70')		Option B (60')		% Change (A vs. B)	
	Max	Avg	Max	Avg	Max	Avg	Max
REQUIREMENT							
Light spill 7' from property line (Horizontal Footcandles)	0.25	0.002	0.026	0.002	0.026	0.0%	0.0%
OTHER MEASURES							
Light spill at property line (Horizontal Footcandles)	N/A	0.003	0.053	0.004	0.055	-25.0%	-3.6%
Glare 7' from property line (Candela per Fixture)	N/A	44.068	180.65	199.32	1888.758	-77.9%	-90.4%
Glare at property line (Candela per Fixture)	N/A	56.834	273.784	284.18	2554.188	-80.0%	-89.3%

Pole Height

Modern LED lighting technology allows for precise directional control compared to previous technologies. Taller poles allow for the light to be directed downward onto the playing field, whereas shorter poles require the light to be angled to direct more light horizontally across the playing field.

On the playing field, “Option A” for taller light poles maintains more consistent lighting across the playing surface. Lighting models of the use of the taller poles demonstrates a more pronounced reduction in light levels with further distance from the field as compared to shorter light poles. The taller poles also provide better lighting at the ends of the field and in the home team bleachers.

The common term "glare" describes the experience of excessive brightness when looking into or in the direction of a light source. Examples are looking into a flash light, a light fixture, or experiencing oncoming headlights from a vehicle. The *candela* is a measure of the intensity of a light source in a specific direction. While the candela is not a measure used or regulated in City ordinances, it is a contributing factor in the overall perception of lighting.

Similar to the modelling of footcandles per the requirements of the ordinance, measurements for candela were modelled at points along the property line, as well as seven (7) feet beyond the property line as shown in Table 1. The analysis provided in the application demonstrates that the additional height would be effective at reducing perceived glare as seen on surrounding properties as summarized in *Appendix 7*.

Staff has also included conditions pertaining to usage of the stadium lighting, particularly hours of operation. Refer to the Staff Recommendations and Conditions section of the Staff Report.

E. Noise

Noise from activities at the stadium site, including amplified loudspeakers, was a concern expressed by many during the Community Meetings. Following public input and inquiries, ACPS subsequently engaged a firm to perform an acoustic analysis to evaluate the existing public address system and develop recommendations for a new public address system to comply with existing City noise ordinances.

Noise Ordinance
The noise ordinance establishes maximum permissible sound levels for residential use areas as specified in Code of Ordinances Title 11 Chapter 5. These limits apply at the property line, and the ordinance specifies measurement and test criteria. Such limits apply between the hours of 7 a.m. and 11 p.m. Additionally, during the overnight hours between 11 p.m. and 7 a.m. daily, the maximum sound levels from the speakers cannot be "plainly audible at a distance of 50 feet from the source," effectively meaning that no public address system could realistically be used during those hours.

Existing Public Address System
The existing system consists of three (3) bullhorn loudspeakers mounted on the roof of the existing press box. Speakers mounted on poles to serve the visitor side bleachers were found during testing to no longer function. All speakers in the existing system project sounds towards the property lines. When set to an acceptable volume level at the home bleachers for speech intelligibility during a typical event, and with test sound measurements at ten (10) locations along the property line, the existing system was found to be out of compliance with the City's noise ordinance in all but two (2) measured positions. Both computer modelling and field testing confirmed the results. Tests also found that the existing system performed fair to poor in the side sections of the home bleachers in terms of speech intelligibility. The existing speakers are too closely spaced. To compensate for the poor placement, the speakers were aimed up and out, projecting more sound towards the property lines.

Proposed Public Address System
The design for the proposed public address system directs sound from all speakers away from adjacent property lines. On the home bleacher side, four (4) speakers are mounted on four (4) poles and aimed down towards spectators. On the visitor bleacher side, the speakers are mounted behind the spectators. Two (2) speakers on mounted on each end of the press box, and two (2) more mounted on poles each 25 feet from each side of the press box. Test results using the computer model showed that proposed sound system design complied with the noise ordinance for the same set of measured positions along the property lines, while delivering more consistent speech intelligibility at both sets of bleachers. The layout of the proposed sound system in shown in *Appendix 3*.

During hours when use of the sound system is restricted, non-amplified noise associated with typical recreation facilities is anticipated. Existing berms, existing landscaping, and new landscaping are expected to partially mitigate some of the noise generated. Additionally, the design process of the new concession buildings considered their arrangement as a means of providing

additional barriers between the residential properties and stadium activities. Staff has included conditions pertaining to usage of the public address system.

F. Conformance to the Small Area Plan

The site lies within the Taylor Run / Duke Street Small Area Plan (1992, as amended) and is in close proximity to other Small Area Plans, including the North Ridge / Rosemont Small Area Plan and the Fairlington / Bradlee Small Area Plan.

There is no section or language which addresses the football stadium and track specifically, except to note the existence of the facility as a part of T.C. Williams High School, which is among several land uses designated "institutional" in the small area plan. At the time of construction of the current high school, a portion of property within the T.C. Williams High School site was rezoned from POS/Public Open Space to R-20/Residential to allow the proposed high school to be built. A Master Plan Amendment was also made at the time to change the land use designation of a parcel from P/Parks to I/Institutional. The land use proposed within the current submission appears consistent with the Taylor Run / Duke Street Small Area Plan.

G. Sustainable Design

The sustainable design features of this project are primarily for stormwater management. The entire property currently discharges to a previously designed, approved, and constructed stormwater management facility. This project additionally proposes two (2) Level 1 bioretention facilities further described as part of the Landscape Plan. Permeable pavers are utilized for 2,778 square feet of paved area around the concession buildings. The proposed field and pedestrian lighting utilized LED technology which is noted for energy efficiency. Conditions of approval are included that relate to management of recycled building materials as well as provisions requiring low-flow plumbing fixtures that conserve water.

H. Open Space and Landscape

Open Space
The existing T. C. Williams campus provides a total of 595,676 square feet of open space, or 57.76% of the site area. The proposed construction on the stadium site would reduce the total open space area by 0.19%, resulting in a total of 593,698 square feet of open space, or 57.56%. The R-20 zone does not require a minimum amount of open space.

Tree Canopy
The zoning ordinance requires that trees must be planted or existing trees preserved to provide a minimum of 25 percent tree canopy cover on the total school site. The applicant has submitted the required plans and calculations indicating that the existing tree canopy is 26 percent and the proposed tree canopy is 27 percent. The plans indicate the removal of only one (1) tree, a large oak adjacent to the existing concession building. This tree is being removed so that the new

concession buildings can be sited farther from the property lines. Thirty-one (31) new trees are being planted in addition to shrubs and perennials per the landscape plan.

Landscape Plan
Landscape plantings are proposed on and around the concession buildings and at points adjacent to the western property line. Tree plantings around the concession buildings include six (6) flowering and deciduous specimens for seasonal color and interest, in addition to numerous shrubs and perennials. Pine and spruce specimens are planned along the western property line behind Concession Building B and further south towards the visitor bleachers. These will supplement existing vegetation.

Two bioretention planting beds are proposed in conjunction with storm water management facilities. One is located northwest of Concession Building B to the right of the paved vehicular entrance gate and drive. Another is located farther south near the visitor bleachers and the earth mound in the corner of the lot behind the bleachers. These will contain ornamental trees, shrubs, and perennials.

I. Parking & Traffic

The proposal does not change the level of parking accommodated on site. Presently the School is required to provide 280 spaces and provides 444 spaces, 416 of which are provided at the garage adjacent to the stadium site. Events held at Parker-Gray Stadium would not typically take place during normal school hours, meaning ample on-site parking will be available during such events for participants and spectators. Buses or vans transporting opposing teams will utilize the existing bus loop for drop-off and for parking for the duration of the events. Spectators will have use of the school parking garage on site. Conditions are included pertaining to parking during construction work.

J. Pedestrian Improvements

All work associated with the project will take place on-site with no changes proposed in the public right of way. Pedestrian improvements begin with the entry canopy over the stadium entrance and surface improvements to the ramp and steps. An existing six (6) foot concrete walk leading to the visitor bleachers will be replaced by a ten (10) foot walk connecting the concession area plaza with the visitor bleachers. Pedestrian lighting will line the walkway and illuminate the plaza as described in the lighting section.

K. Public Art

ACPS is developing a concept for a work interpreting the history of the School and surrounding community. The design under consideration consists of panels featuring text and images arranged chronologically, in a vertical format that coordinates with the vertical panel pattern found on the concession buildings. The location under consideration is the north wall of concession Building B,

where it would be afforded good visibility while protected under the projecting canopy of the building.

V. COMMUNITY

As the City's only public high school, T.C. Williams is large and active, with a student population that has experienced significant growth since the construction of the current school building. Seventeen (17) single family homes directly abut the School property on two sides, with additional residential development located across King Street. During a series of public meetings, the overarching theme expressed by attendees involved balancing the community interests of the needs of the School with the interests of nearby residents.

Community Meetings

ACPS conducted public outreach and gathered feedback through a number of avenues. The primary medium was through a series of seven (7) Community Meetings held throughout 2017 and 2018 as summarized in *Table 2*. These formed the core of the community engagement process for the stadium project. Community Meetings were announced on the ACPS calendar, through established ACPS email lists, and through contacts with numerous community groups and stakeholders. ACPS also set up a stadium modernization project website to announce meetings and archive presentation materials from previous meetings.

The meetings were held at either T.C. Williams High School or at the nearby Minnie Howard campus. Presentations were given by various ACPS staff as well as design professionals associated with the project. Attendance for some of the meetings was as much as 70 people or more. The following table briefly summarizes the topics of discussion for each of the meetings.

Table 2
Summary of ACPS Community Meetings

Date	Topics / Agenda
February 13, 2017	• Introduction of the project goals and scope. Presentation by the design team showing other athletic facility projects completed. • Table exercises gathering feedback from attendees to form guiding principles for the design process. ("Hopes" and "Concerns") • Design team discussion of preliminary ideas.
March 21, 2017	• ACPS "What we heard" recap: summary of hopes and concerns. • Community aired concerns regarding sound system design, impact. • Discussion of entry point and ticket sales booth concepts. • Concession area options and challenges. Overall, how to present a better sense of arrival and place.
May 22, 2017	• Summary of concession area layout options last presented. • General concepts for field lighting, technology & measuring light.
September 25, 2017	• Overall facility design concept. (Near design as currently shown)

	• Field lighting concepts presented, description of other school sites where utilized. • Long Q&A: Community voiced property security and maintenance concerns, proximity of buildings, desires for a sound system study.
November 27, 2017	• Recap and presentation of building architecture/designs. Scope to include 8th track lane. • Parking, frequency of use, and pedestrian access were topics of community concern calling for additional future discussion.
March 13, 2018	• Acoustical study results and proposed sound system. Existing system does not comply with noise ordinance. • Budget can accommodate scoreboard relocation.
June 20, 2018	• Group exercises to collect comments about users and uses. • Discussion of proposed uses, users, hours, access control and programming for the site.

At the first meeting, group exercises were used to gather thoughts and feedback from attendees regarding project goals. Participants were asked to respond to the questions:

- "What are your greatest hopes for the project, and for the community?"
- "No matter what, the project must not _____"

Table 3
Community Meeting Hopes and Concerns

"Greatest Hopes"	"Greatest Concerns"
• Serves the students first and community with improved safety / access • Stadium worthy of City, students and School, but respects the community • Modernize facility: restrooms, water, press box, better stands & concessions • Use technology to address concerns: better sound control, directional lights, etc. • Enhance usability of site, but respect neighbors • Expand track to 8 lanes • Honor past DSUP conditions but modernize the facility	• Project should not divide the community or neglect the interests of neighbors • Must not build a sub-standard facility with a Band-Aid approach, make a facility that meets standards for athletic competition • Must not communicate that the community doesn't value investing in students • Moderate the number of events throughout the year • Precedent and unintended consequences • Must not become an "all-city" stadium with multiple groups using it • Use site to full potential given its central, convenient location

The responses are summarized in *Table 3*. The meetings were respectful and engaging, but there were numerous concerns and differences. Some participants were insistent that there be no increase in the intensity of use of the facility, and that the proximity of the stadium site to nearby residences

had already been a considerable burden, and that an alternative site for a lighted stadium should be sought. Many expressed frustrations at a long history of mistrust between ACPS, the City, and residents; not only in terms of operational nuisances, but historic decisions related to the acquisition of the T.C. Williams site in the 1960's. Of particular concern is the issue of stadium lighting. Many insisted that the City honor past DSUP conditions, and warned of unintended consequences following any change in policy. There was concern over the number of events, and a perception that the facility was frequently used by out-of-city residents and groups not approved by ACPS.

Other participants stated that the current facility offered the most convenient location, and that investment in renovations should be used to extend the usability of the site to the benefit of the School and the public good. Many parents of students believed that the condition of the facility did not project a positive community image. Many believed that the prohibition on lighting put the School and students at a disadvantage, and that night time athletic events were part of a typical high school experience.

Responses to the exercises were used to formulate the guiding principles for the project design process, as well as staff's subsequent analysis:

1. Modernize the entire stadium facility without a piecemeal "Band-Aid" approach.
2. Create a welcoming venue that addresses all sports and levels of play.
3. Improve safety and accessibility for both the School and community.
4. Unify the School and neighboring community.
5. Establish an acceptable frequency of use.

The guiding principles informed the design process as the project progressed. As previously noted by staff, several changes were made in response to community concerns. These included the positioning of the buildings, the relocation of structures and activities further away from property lines, a sound system analysis, and City sponsorship of a zoning ordinance amendment to permit field lighting at a height which better controls the light. Staff has additionally proposed a series of conditions related to use of the facility, with specific conditions for use of the sound system and lights.

Community Advisory Committee

Created by Conditions of Approval for the School reconstruction, this committee is coordinated by ACPS and includes representatives of ACPS, T.C. Williams High School, Department of Recreation, Parks and Cultural Activities, and neighborhood stakeholders to discuss ongoing operational issues of the high school. The committee was reconstituted in 2017 and meets periodically as a forum to address neighborhood concerns and foster better communication between ACPS and the surrounding neighborhoods. The Committee reports to the Superintendent.

Other ACPS Outreach

After the first several Community Meetings, ACPS met with several stakeholder groups to communicate project information and solicit feedback. Groups include student/parent athletic groups, neighborhood associations and groups of neighbors, and a citizen stadium initiative group supporting the stadium modernization project.

City Outreach

Since the project was of great interest to the community, the Department of Planning and Zoning also set up a section on the Development Division web page that summarized the project's progress through various stages of the submission and development review process. Copies of the plan submissions and comment letters from staff to the applicant were also made available to the public online. These include the Concept 1, Concept 2, and Preliminary Plan submissions.

Planning and Zoning Staff attended all Community Meetings and regularly attended Community Advisory Committee meetings. The Department of Planning and Zoning held a project Open House on September 5, 2018. The purpose was to answer questions about the development and progress of the project and to provide an additional opportunity to gather input not heard through other venues. Comments received mirrored those provided at preceding ACPS outreach events. The project is scheduled for presentation before the City's Parks and Recreation Commission in September 2018.

VI. CONCLUSION

Based on the compliance with the Small Area Plan and Zoning Ordinance and the anticipated benefits to the School and the City's residents, staff recommends **approval** of the amendment to the Development Special Use Permit with Site Plan to construct the improvements associated with the Parker-Gray Stadium Modernization project, and the Special Use Permit to construct light poles for athletic field lighting utilizing to a maximum height of 80 feet as proposed subject to compliance with all applicable codes and the following recommended conditions.

A series of conditions has been proposed limiting the hours and usage of the facilities, including operating conditions of the lights and sound system. These conditions were formulated to address community concerns and mitigate impacts of the facility to adjacent residents while allowing the facility to continue to provide a City-wide community benefit.

Activities associated with ACPS academic and athletic programs, such as practices and recreation activities, have proposed end times. ACPS athletic events and other ACPS-approved events and uses are similarly limited, with extended hours of use on Friday and Saturday evenings only. These types of uses include athletic competitions that students participate in, as well as ACPS-approved events in accordance with existing ACPS Policy KG "Community Use of School Facilities." *Table 4* that follows summarizes the days and times of use as stipulated by the conditions.

Table 4
Time of Use Conditions Summary

Day	Hours for Facility Rentals (1)	Tennis Courts	ACPS Academic & Athletic Programs		ACPS Athletic Events and Community Use	
		Lights Off (2)	Lights Off (3)	Sound Off	Lights Off (4)	Sound Off (5)
Monday	8AM-10:30 PM	10:00 PM	8:30 PM	--	8:30 PM	8:00 PM
Tuesday	8AM-10:30 PM	10:00 PM	8:30 PM	--	8:30 PM	8:00 PM
Wednesday	8AM-10:30 PM	10:00 PM	8:30 PM	--	8:30 PM	8:00 PM
Thursday	8AM-10:30 PM	10:00 PM	8:30 PM	--	8:30 PM	8:00 PM
Friday	8AM-10:30 PM	10:00 PM	8:30 PM	--	10:15 PM	10:00 PM
Saturday	8AM-10:30 PM	10:00 PM	8:30 PM	--	10:15 PM	10:00 PM
Sunday	8AM-10:30 PM	10:00 PM	8:30 PM	--	8:30 PM	8:00 PM

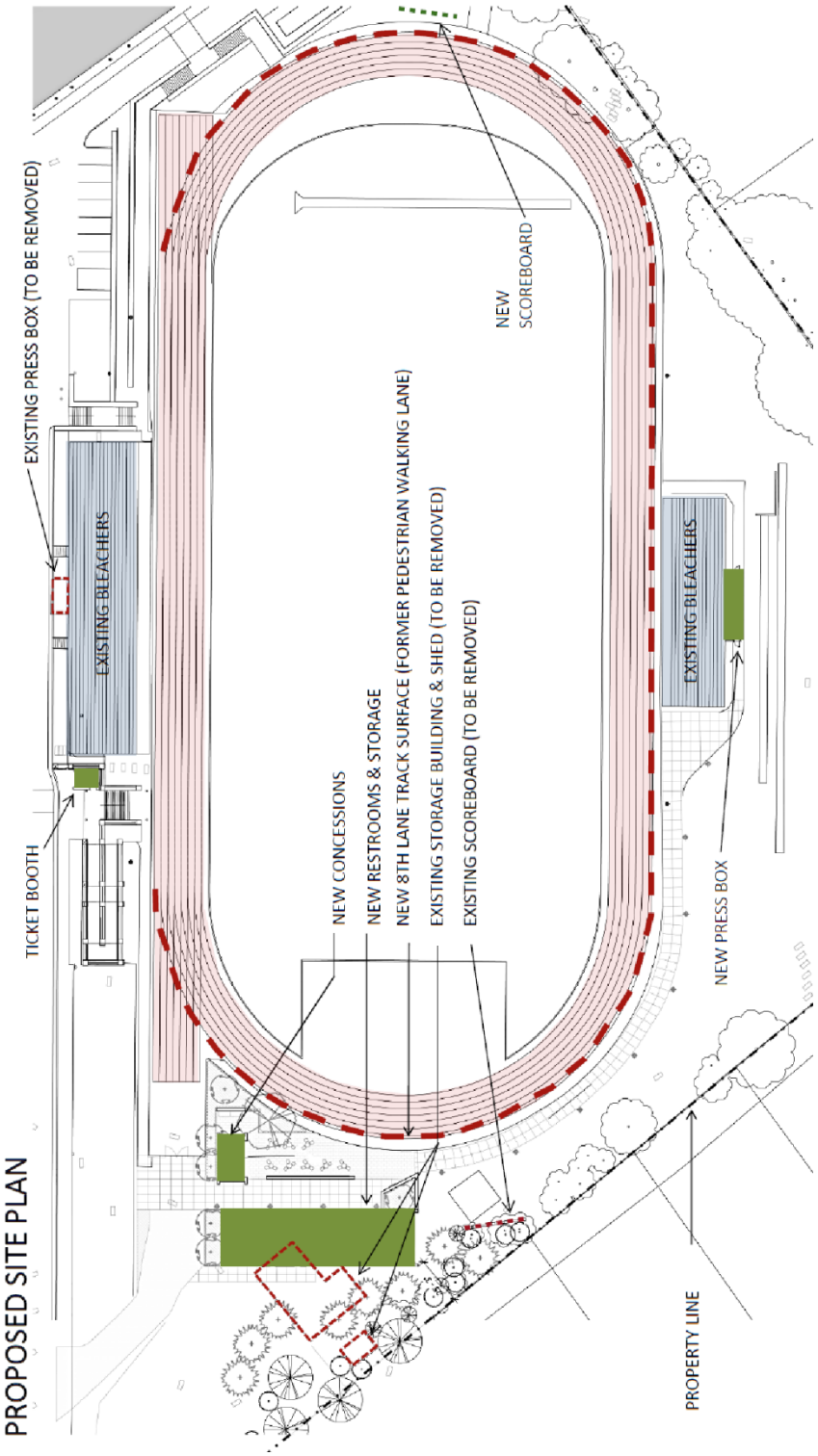
(1) Per ACPS Policy KG "Community Use of School Facilities"
(2) By timer, per DSUP2013-0014 Condition #1G
(3) Proposed Condition #126
(4) Proposed Condition #127

The proposed conditions stipulate that lighting and sound systems may be operated only by ACPS staff or authorized persons, and use of the systems is limited to certain events only. Per existing policy, ACPS has priority over the use of Parker-Gray Stadium, with priority given to other organizations and groups in accordance with ACPS policy and schedule of fees. The facility has been open for recreational use by residents and the community during non-school hours when the facility is not used by ACPS or approved groups. There is no proposed change to that policy.

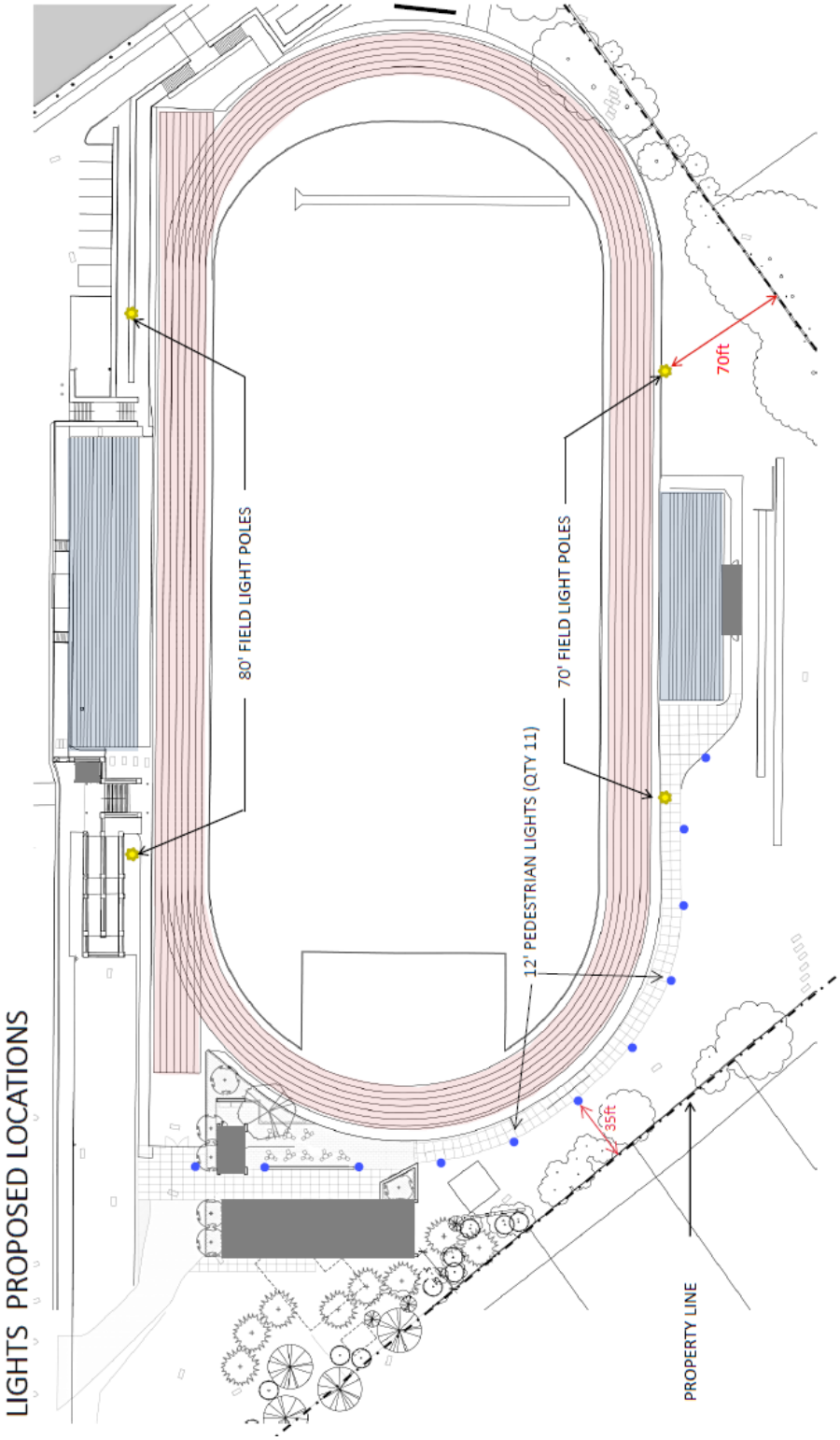
Staff: Karl Moritz, Director of Planning and Zoning
Robert Kerns, Division Chief, Development
Nathan Imm, Principal Planner
Bill Cook, Urban Planner

VII. GRAPHICS and APPENDICES

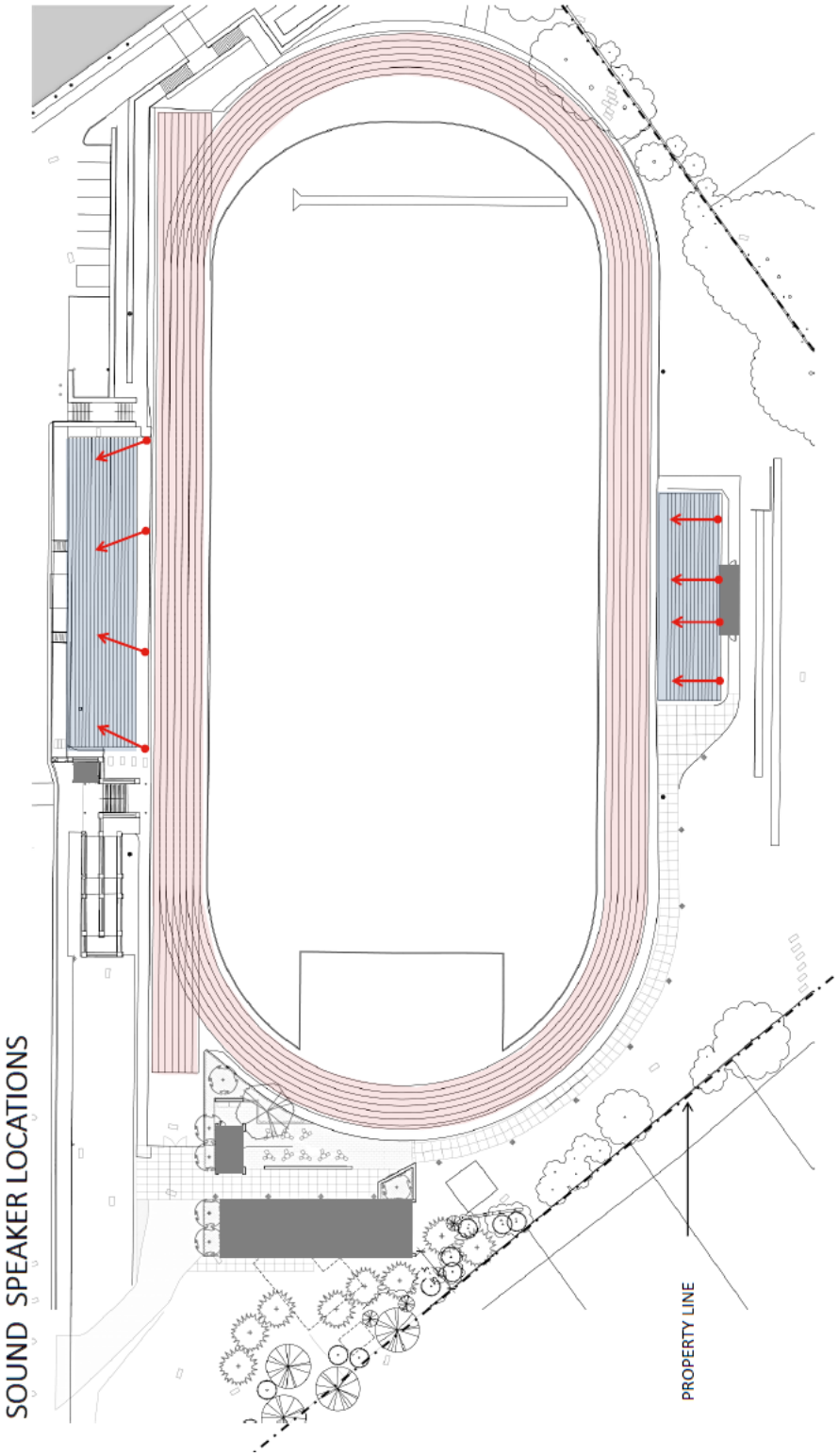
Appendix 1: Proposed Site Plan



Appendix 2: Light Pole Locations



Appendix 3: Speaker Locations



Appendix 4: Existing Conditions Photos

Existing scoreboard located along west side property line. Existing landscape screening also shown.

Existing press box located behind home bleachers. Existing speakers also shown.

Existing concession and storage building.

Portable toilets located approx. 50 feet northeast of existing concession building.

Existing ticket booth, entry stairs, and ramp.

Vehicle / service entry near existing concession building. Landscape screening also shown along western property line.

Appendix 5: New Buildings and Structures

New Entry Canopy and Ticket Booth. Graphics and signage on buildings are heavy-duty aluminum.

Viewed facing west: Building B (Restrooms and Storage) is gray brick. The sliding door on the left encloses the restroom entry area when not in use. The vertical panels in red and blue are painted fiber cement. The end of Building A (Concessions) is on the right.

Viewed facing south: Building B (Restrooms and Storage). The overhang allows a patio for seating. ACPS is considering a mural or public art installation on the end wall of Building B under the overhang.

View facing North: Building B (Restrooms and Storage), in foreground, Building A (Concessions), in background, plaza and walkway. Restroom building windows will be opaque on all sides except plaza side.

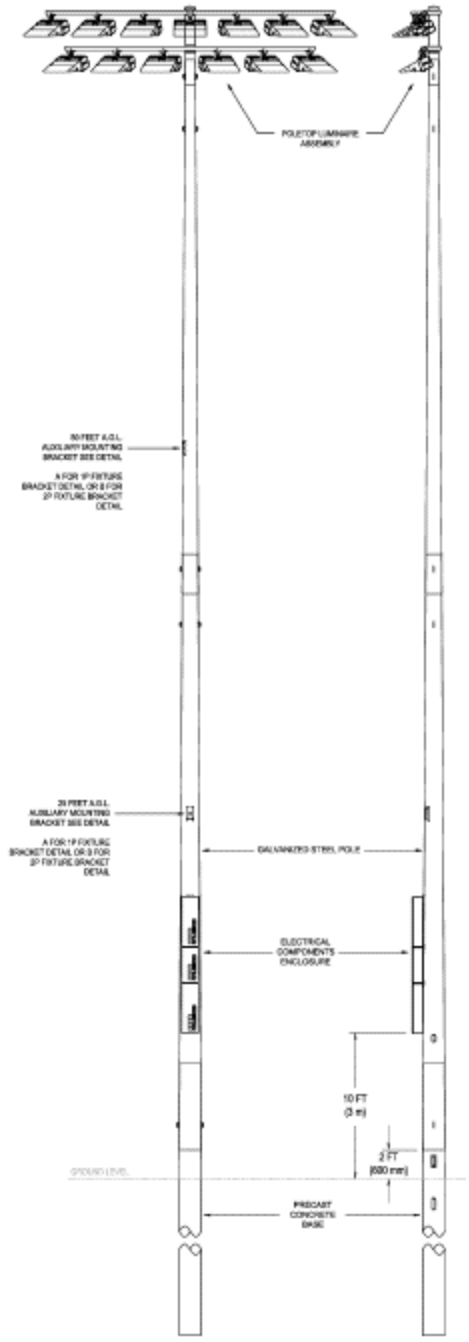
Rear wall of Building B (Restrooms and Storage).

Scoreboard concept. 18'H x 25'W

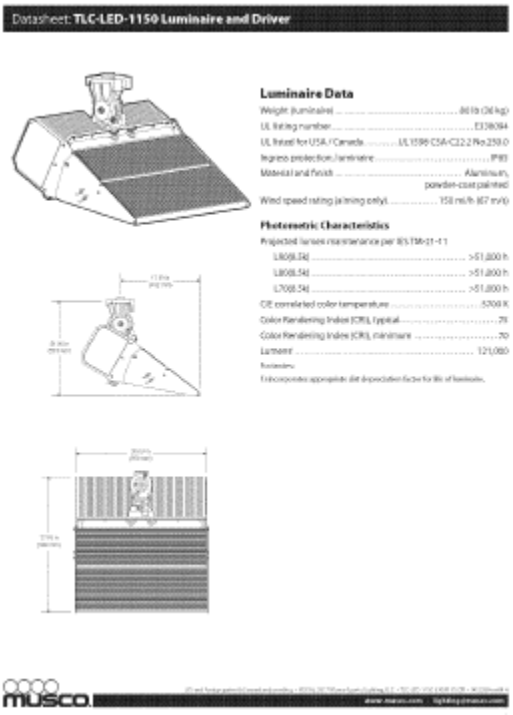
Press Box. Representative photo of modular structure. Total 28'H.

Entry area and ticket booth looking southeast.

Appendix 6: Proposed Athletic Field Lighting



Pole Assembly (Typical)



Luminaire (Typical)

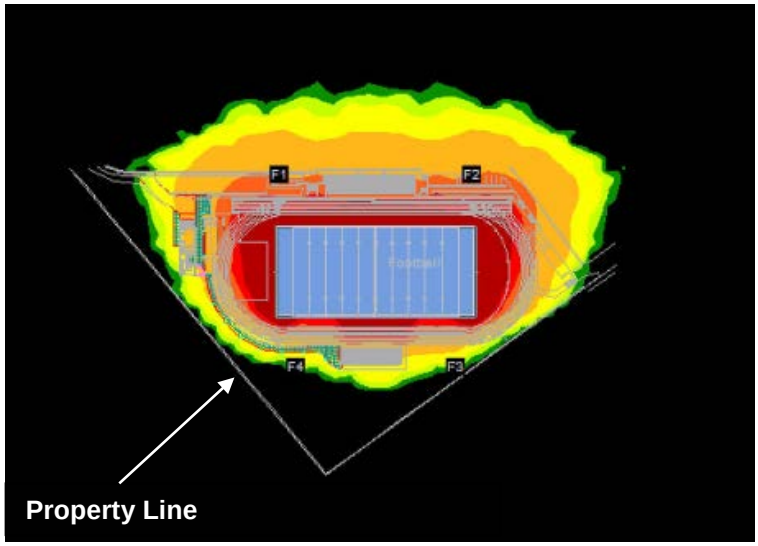
Field Lighting System Configuration:

- 4 poles
- 10 luminaires per pole mounted at the top
- 2 luminaires per pole mounted at 15’ H. These provide uplighting to give contrast between the ball and the sky and reduce glare from the player’s perspective, while still reducing sky glow compared to conventional floodlighting.

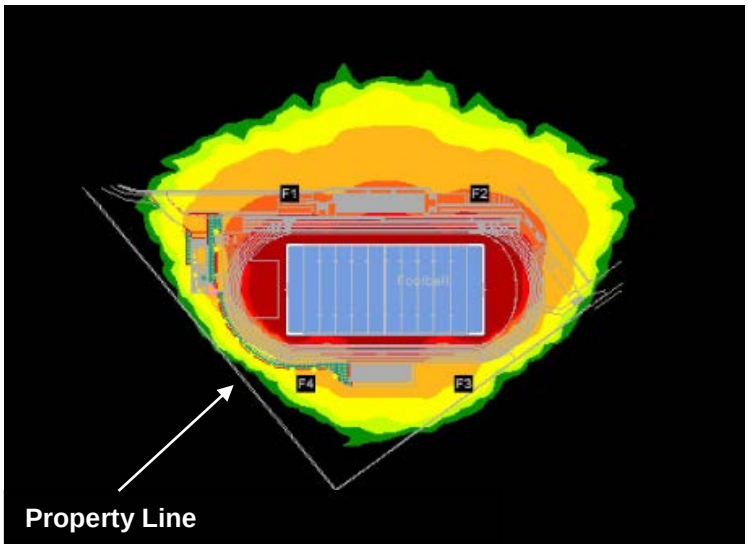
Appendix 7: Glare Impact

Option A:
(2) 80 Foot Poles North
(2) 70 Foot Poles South

Compared to Option B, the overall light pattern is tighter and more precisely aimed. Glare impact is less along the west and south property lines.



Option B:
(4) 60 Foot Poles



Map indicates the maximum candela an observer would see when facing the brightest light source from any direction.

- High Glare: 150,000 or more candelas. Should only occur on or very near the lit area where the light source is in direct view.
- Significant Glare: 25,000 to 75,000 candelas. Equivalent to the high beam headlights of a car.
- Minimal to No Glare: 500 or less candelas. Equivalent to 100w incandescent light bulb.

VIII. STAFF RECOMMENDATIONS

Staff recommends **approval** of the development special use permit, subject to compliance with all applicable codes and ordinances and the following conditions.

The following conditions include those from the school's original DSUP approval (DSUP2002-0044), and subsequent tennis courts DSUP application (DSUP2013-0014) which shall remain in effect unless amended or deleted accordingly. All new or amended conditions relating to the Parker-Gray Stadium Modernization application (DSUP2017-0016) are listed below with **BOLD TYPE**, underline and ~~strikethrough~~ identifiers. Each condition also includes a suffix (DSUP2002-0044, DSUP2013-0014, or DSUP2017-0016) further identifying their source DSUP.

I. SITE PLANNING

1. **CONDITION AMENDED BY STAFF:** The Final Site shall be in substantial conformance with the preliminary plan dated ~~10/01/13~~ 8/06/18 ~~(with updates 10/24/13 and 11/01/13)~~ and comply with the following conditions of approval. All previous conditions from DSUP2002-0044 and DSUP2013-0014 are listed below and shall remain in effect, to the satisfaction of the Director of P&Z: (DSUP2002-0044, DSUP2013-0014, DSUP2017-0016)
   a. The emergency vehicle easement area on the southeast portion of the site between the gymnasium and the property line shall be designed to provide decorative paving, landscaping (shrubs and trees), and pedestrian scale lighting to provide a pedestrian connection from the fields and Chinquapin Park as generally depicted in *Figure No.1* . The retaining wall for this area shall be masonry (brick, stone or precast concrete) and shall be the minimum height necessary.
   b. The area between King Street and the new tennis courts shall include a continuous natural feature, such as a berm with increased vegetation and adjusted as necessary, to prevent balls and athletic equipment from leaving the field area.
   c. The sidewalk adjacent to the right turn lane on King Street shall be relocated to provide a 10 ft. landscape strip between the curb and the sidewalk to provide additional area for the proposed street trees. Refinements to the sidewalk dimension may be permitted in order to save existing trees by the entrance.
   d. The southern portion of the bus loop area shall be revised to enhance the proposed pedestrian-student crosswalk to the sports field and parking structure by reducing the length of the crossing, widening the sidewalk and increasing the amount of open space and landscaping as generally depicted in *Figure 2.*
   e. The eastern building frontage and sidewalk along Chinquapin Drive shall be revised to provide enhanced pedestrian circulation and access points that should at a minimum include the following:

      i. At-grade access directly to the curb from the fire stair exit leading to stairs across landscaped area.

ii. Revised design of the entry to the daycare area including paved areas, areas of landscape, stairs, retaining walls, etc

f. Refine the drive aisle widths and sidewalks to reduce the paved areas to the extent possible including at a minimum the following:

i. Reduce 34' width of bus/service entry road, drive aisle and bus loop to 24 ft. and 30 ft. for the western drive aisle where on-street parking may be provided.
ii. The setback area in front of the school building shall be planted with natural materials, except to the extent that the area is required for emergency vehicle easement, in which case it shall be planted with a structured turf product suitable to the area to the satisfaction of the Director of P&Z and Code. The sidewalk on King Street shall be 10 ft. wide and where shared with an emergency vehicle easement, the remaining 12 feet shall be reinforced turf. The proposed north-south emergency vehicle easement adjacent to the administration wing shall be an 8 ft. wide sidewalk north of the drop-off area, and the remaining 14 ft. of the EVE in that area shall be reinforced turf. All remaining emergency vehicle areas in this location shall be reinforced turf.
iii. Revise handicap ramps to provide City standard access ramps to reduce the amount of paving where possible to the satisfaction of T&ES and P&Z.
iv. Reduce the sidewalk width along the south side of the parking structure garage to 8 ft. wide if feasible, and if consistent with other sidewalk widths.
v. Increase the depth of the landscaped area adjacent to the west face of the school between the visitor and student entries to 30 feet.
vi. Reduce the width of the lay-by on Chinquapin Drive from 15 ft. to 10-12 ft. wide.
vii. All curb returns shall be a minimum of 25 ft. radius unless otherwise necessary for vehicles, emergency vehicles or bus turning movements to the satisfaction of the Directors of T&ES, Code and P&Z. (P&Z)

g. Provide an actuated timer for the court lights which does not allow the lights to operate beyond 10pm. (RPCA) (DSUP2013-0014)

h. Provide details related to court wind screen fabric. (RPCA) (DSUP2013-0014)

i. Provide adequate spacing at main court entrance to enable double gates to fully open outward. Eliminate conflicts with site furnishings. Provide magnetic locks for court gates. (RPCA) (DSUP2013-0014)

II. LANDSCAPING/OPEN SPACE

2. Develop, provide, install and maintain an integrated Landscape Plan with the final site plan that is coordinated with other associated site conditions to the satisfaction of the Directors

of P&Z and RP&CA. At a minimum the Landscape Plan shall include: (DSUP2002-0044 & DSUP2013-0014)

a. enlarging the size of the tree wells to 8 ft. x 8 ft., or the closest smaller standard size, between the school and the parking garage within the internal courtyard. The tree wells shall include decorative tree grates.
b. Provide three (3) Willow Oak street trees on the western portion of the site adjacent to the church.
c. The triangular green area at the western portion of the site along King Street and adjacent to the Oakland Baptist Church should include landscaping, to include 10-15 additional deciduous, evergreen and flowering trees, evergreen hedges to screen the parking lot, and additional shrubbery to provide a useable open space area with amenities such as benches, trash receptacles, etc. to encourage use of this area.
d. additional evergreen and deciduous trees at the north west portion of the parking structure to provide additional screening of the parking structure.
e. additional landscaping at the west edge and southwest corner of the parking garage with a reduction of the sidewalk at that location.
f. Continuous row of evergreen shrubs within the median at Kenwood Avenue, which shall be a minimum 6' width for planting.
g. Additional 10-15 evergreen trees on the eastern portion of the north face of the parking garage near the vehicular entrance.
h. A continuous row of dense evergreen and flowering foundation shrubs between the proposed building and Chinquapin Drive.
i. A landscaping bed at the new proposed sign location.
j. Provide a sculpture, focal element or public art within the central entry plaza, with budget approval.
k. Revise the plantings in the area of the southeastern portion of the building to be a landscaped buffer of mixed evergreens and flowering trees on the sloped area between the rear EVE area and the residential property to the south. The species for this area shall be of a size and type well suited to the soil conditions, and light level of this area. Additional landscaping, in the areas shown on Figure 1 shall be added.
l. Condition deleted.
m. Relocate storm sewer on northern portion of the parking structure to minimize impact on the proposed landscape screening for the parking structure.
n. Landscaping shall not conflict with existing or proposed utilities. Depict all utility structures, including transformers, on the final development plan. All utility structures (except fire hydrants) shall be clustered where possible and located so as not to be visible from a public right-of-way or property. When such a location is not feasible, such structures shall be located behind the front building line and screened with landscaping. (P&Z)
o. Provide an enhanced level of detail for plantings throughout the site (in addition to street trees). Plantings shall include a simple mixture of seasonally variable, evergreen and deciduous shrubs, ornamental and shade trees, groundcovers and perennials that are horticulturally acclimatized to the Mid-Atlantic and Washington, DC National Capital Region.
p. Ensure positive drainage in all planted areas.

q. Provide planting details for all proposed conditions including street trees, multi-trunk trees, shrubs, perennials, and groundcovers.
r. Provide the following modifications to the landscape plan and supporting drawings:
   i. Provide 25% of the number of proposed sapling plantings as 2 – 2.5" caliper specimen trees, and generally in conformance with the planting plan provided 11/1/13 to P&Z. (P&Z)
   ii. Provide additional trees at 2 – 2.5" caliper on site to the satisfaction of the Directors of P&Z and RP&CA in order to meet the City's crown coverage requirement. (P&Z & RP&CA)
   iii. Consistent with City of Alexandria Landscape Guidelines, grass area slopes shall not exceed 4:1 slope. (RP&CA)
   iv. Remove and replace two existing shade trees west of the main school entrance drive and one existing shade tree east of the main school entrance drive. The trees are terminally damaged. Modify the landscape plans for adjacent plantings accordingly. (RP&CA)
   v. Replace missing and/or terminally damaged street trees on south frontage of King Street. Modify landscape plan accordingly. (RP&CA)
   vi. All landscape irrigation systems impacted by construction shall be relocated/replaced in a manner that accommodates the proposed work-including coverage, precipitation rates, installation and materials-shall be approved by to satisfaction of the Director of RPCA. (RP&CA)
   vii. Work with City Arts staff to develop a public art program related to installation of the plant saplings. A program and implementation plan shall be approved by the RPCA Office of the Arts prior to release of Final Site Plan Mylars. (RP&CA)

3. The landscape plan shall meet the requirements in the City's *Landscape Guidelines*. (P&Z & RP&CA) (DSUP2013-0014)

3A Prior to release of Final Site Plan Mylars, amend the City/ACPS Facilities Use Agreement to include access to the courts for recreation programs and public use in coordination with ACPS-similar to other facilities in the City. Coordinate programs currently using the site and displaced by the proposed to other location(s) in the City. Future comments will include request for accommodation and/or remuneration for loss of previously agreed upon programmable space/time. Requirements will include days/times, scheduling procedures, program-use and priority of use. (RPCA) (DSUP2013-0014)

3B Program support storage units, or other similar uses will be limited only to those facilities identified in the Preliminary Plan. No storage units, sea containers or other temporary facilities are permitted on site. (RPCA) (DSUP2013-0014)

3C Prior to release of Final Site Plan Mylars, meet with RPCA Park Operations and agree upon amendments to the City/ACPS maintenance agreement to satisfaction of RPCA. All future operational and maintenance costs for the work shall be borne by ACPS-including regular or unscheduled maintenance such as court cleaning, winterization, acrylic surface coatings, practice backboards, windscreens, fences, BMPs, court surfaces, nets, fences, signs, lights, etc.., unless any such operational and/or maintenance costs are allocated differently in

future maintenance agreements between the City and the ACPS. Replacement of equipment, nets, fences, lights, etc. and operations costs shall be the responsibility of ACPS. (RPCA) (DSUP2013-0014)

3D Prior to commencing use of the tennis courts, provide updated as-built drawings for the TC Williams campus. All punch list items shall be addressed to the satisfaction of the directors of T&ES, RP&CA and P&Z within one year of commencing use if the tennis courts. Demonstrate that the proposed plantings are consistent with City of Alexandria Landscape Guidelines in relationship to the project proposal as an amendment to the DSUP of the entirety of TC Williams site. (RPCA/TES/PZ) (DSUP2013-0014)

3E As-built documents for all landscape and irrigation installations proposed under this submission are required to be submitted with the Site as-built prior to use of the tennis courts. Refer to City of Alexandria Landscape Guidelines, Section III A & B. **** (P&Z) (T&ES) (DSUP2013-0014)

3F The landscape elements of this proposal shall be subject to inspections for compliance by City staff. Further inspections for landscape compliance are also required one and three years after project completion. **** (P&Z) (T&ES) (DSUP2013-0014)

4. All landscaping shall be maintained in good condition and replaced as needed. (P&Z, RP&CA) (DSUP2002-0044)

5. The applicant shall design and install irrigation for all areas between King Street and the proposed parking structure and proposed school building and for areas with reinforced turf areas, all with non-potable water to the extent possible. (P&Z) (RP&CA)

6. Tree protection shall be installed, and approved by the City Arborist prior to beginning any demolition, clearing, or construction. As many of the existing mature trees on the site as possible shall be saved and must be protected, including but not limited to the following to the satisfaction of the Director of P&Z and RP&CA. (DSUP2002-0044 & DSUP2013-0014)

    i. Show the Sycamore at the end of Woods Avenue to be saved and relocate the landscaping accordingly.
    ii. Relocate the landscaping from the existing trees to remain at the edge of the neighboring houses and track, including next to Lots 1, 2, 3, 15A and the Oakland Baptist Church.
    iii. All proposed tree protection details shall be depicted on the final site plan and be provided throughout the construction process to the satisfaction of the City Arborist and Director of P&Z.
    iv. Show tree protection for existing trees to be saved at the main entrance.
    v. The additional tree protection for both existing trees and the proposed sapling planting areas shall be per the Preliminary Plan sheets submitted to the City 11/01/13. (RP&CA) (P&Z)

7. Proposed trees should be moved: relocate trees farther from the proposed 72" pipe on Chinquapin Drive; shift tree locations at the corner of the playing field where tree is located over yard inlet (sheet C-25). (RP&CA) (DSUP2002-0044)

8. Landscaping shall be provided of sufficient depth and character, to include evergreen plantings, to buffer neighboring residential property from the visual impact of the school buildings, athletic fields and activities without infringing on the existing athletic fields. (P&Z) (DSUP2002-0044)

9. Artificial turf shall be provided on the stadium field, as requested by RP&CA, with budget approval. (RP&CA) (DSUP2002-0044)

10. **CONDITION ADDED BY STAFF:** The location of all pole-mounted lights shall be coordinated with all trees. Light poles shall be located a minimum of ten (10) feet from the base of all trees, and the placement and height of light poles shall take into account the mature size and crown shape of all nearby trees. (DSUP2017-0016)

11. **CONDITION ADDED BY STAFF:** Provide a site irrigation and/or water management plan developed installed and maintained to the satisfaction of the Directors of P&Z and Code Administration. (DSUP2017-0016)
    a. Provide an exhibit that demonstrates that all parts of the site can be accessed by a combination of building mounted hose bibs and ground set hose connections.
    b. Provide external water hose bibs continuous at perimeter of buildings. Provide at least one (1) accessible, external water hose bib on all building sides at a maximum spacing of 90 feet apart.
    c. Hose bibs, ground set water connections and FDCs must be fully accessible and not blocked by plantings, site utilities or other obstructions.
    d. Install all lines beneath paved surfaces as sleeved connections.
    e. Locate water sources and hose bibs in coordination with City Staff. (P&Z)

III. TREE PROTECTION AND PRESERVATION

12. **CONDITION ADDED BY STAFF:** Provide, implement and follow a tree conservation and protection program that is developed per the City of Alexandria Landscape Guidelines and to the satisfaction of the Directors of P&Z and RP&CA. A Tree Conservation and Protection Plan shall be approved by the City Arborist prior to Final Site Plan release. (P&Z) (RP&CA) (DSUP2017-0016)

13. **CONDITION ADDED BY STAFF:** A fine shall be paid by the applicant in an amount not to exceed $10,000 for each destroyed tree with at least a 10-inch caliper that is not identified “to be removed” (TBR) on the Preliminary Plan, and/or the City may request that replacement trees of similar caliper and species be provided for damaged trees if the approved tree protection methods have not been followed. The replacement trees shall be installed and if applicable the fine shall be paid prior to the issuance of the last certificate of occupancy permit. *** (P&Z)(RP&CA) (DSUP2017-0016)

14. **CONDITION ADDED BY STAFF:** The area of the limits of disturbance and clearing for the site shall be limited to the areas as generally depicted on the preliminary site plan dated 8/06/2018 and reduced if possible to retain existing trees and grades. (P&Z)(RP&CA) (DSUP2017-0016)

IV. BUILDING DESIGN

15. **CONDITION AMENDED BY STAFF:** The massing, articulation and general design of the ~~office building~~ buildings shall be generally consistent with the drawings and renderings submitted with this application dated November 7, 2003 and August 6, 2018. The final design of the building shall be revised to incorporate the following to the satisfaction of the Director of P&Z. (DSUP2002-0044) (DSUP2017-0016)
    a. entirely masonry (brick, precast, or stone) materials for the facade with painted metal accents limited to those elements as depicted, except for screening of the mechanical equipment;
    b. The angled elevation of the performing arts wing facing the entry court shall be treated with recesses, piers, and/or horizontal accents to add relief to the 35-foot expanse of blank wall.
    c. Rooftop mechanical equipment shall be screened from view. If rooftop equipment will be visible from King Street within a reasonable distance, as indicated by sightlines calculated by ACPS, screening may require providing a masonry parapet at the perimeter of the building. Details on the screening methods shall be indicated on the final site plan.
    d. Enclosures providing rooftop access from the stairs flanking the library shall be designed to harmonize with the adjacent roof forms and minimize their visual impact.
    e. Precast masonry trim shall be used as depicted, including tops of masonry piers and bases under the windows shall be provided as shown.
    f. Spandrel glass shall be provided under the 2nd floor windows on the north side of the west pavilion facing King Street to match the east pavilion. The vertical divisions of these windows shall match those in the same position on the east pavilion
    g. Detail at the tops and bases of the metal columns at the library exterior shall be similar to the typical metal columns on the perimeter of the building and at the athletic wing entrance.
    h. The wall adjacent to the student commons courtyard shall be limited to a maximum height of 2'. The walls shall be a combination of brick and precast masonry. (P&Z)

16. Architectural elevations (front, side and rear) and floor plans of ground levels shall be submitted with the submission of the final site plan. Elevations shall indicate material treatment and color which will be accompanied by materials sample board for review. Each elevation shall indicate the average finished grade line. All refinements to the design and materials shall be revised prior to the release of a building permit for any above grade construction. A material board shall be constructed on-site prior for the review and approval of all exterior materials in consultation with the Department of P&Z, to occur timely, prior to the final selection of materials for the building. (P&Z) (DSUP2002-0044)

17. **CONDITION AMENDED BY STAFF:** Provide detailed drawings showing all proposed fences and walls, including structural details, identifying all materials and dimensions to the satisfaction of the Director of Planning and Zoning and Transportation and Environmental Services. All faces of retaining walls shall be entirely brick, stone or other similarly high-quality material to the satisfaction of the Director of P&Z. (P&Z) (T&ES) (DSUP2002-0044)
    a. Indicate methods for grade transitions, handrails — if required by code, directional changes, above and below grade conditions. Coordinate with adjacent conditions. Design and construction of all walls shall be to the satisfaction of the Directors of P&Z and T&ES.* (P&Z)(T&ES) (DSUP2017-0016)

18. Provide decorative metal picket fencing on the top of retaining walls adjacent to the retaining walls along Chinquapin Drive overlooking the daycare play area and pedestrian egress areas. (DSUP2002-0044)

19. For firefighting reasons all stairs should extend through the roof. Two stairs noted on sheet A2.17, which shall contain roof doorways; the remaining rated stair enclosures shall include mechanisms for easy access to the roof, with such mechanisms to be to the satisfaction of the Directors Code Enforcement and Planning and Zoning. (Code) (DSUP2002-0044)

20. A maximum of one freestanding monument sign is permitted. The proposed freestanding sign for the King Street frontage shall be designed to be compatible with the building design, but should be reduced in height to 6 ft. and shall not be internally illuminated. (P&Z) (DSUP2002-0044)

21. The applicant shall prepare design plans for all signage, including pedestrian and traffic signage, on the high school site for approval by P&Z and T&ES. (P&Z, T&ES) (DSUP2002-0044)

22. The building shall be designed to minimize sound from mechanical equipment (i.e., cooling towers, condensers, refrigeration equipment, exhaust fans, and generators) being projected into the adjoining neighborhoods. (P&Z) (DSUP2002-0044)

23. The athletic wing and gymnasium, exits, exterior walkways, windows, HVAC equipment, exhaust fans, etc. shall be designed and constructed (including sufficient screening and sound attenuation) in a manner to minimize the sound levels that will be generated by such a large facility, its mechanical systems, and its patrons. (P&Z) (DSUP2002-0044)

24. The school building shall be designed to allow a possible future pedestrian bridge connection between the athletic wing of the high school and Chinquapin Center in the future to promote the joint use of both facilities. The design shall take into consideration that at least 14 feet of clearance is required from the lowest point of the future structure for fire apparatus to pass under the pedestrian bridge on Chinquapin Drive. (RP&CA) (Code) (DSUP2002-0044)

25. The applicant shall revise the materials and design of the freestanding parking structure to the satisfaction of the Director of P&Z. The revisions shall at a minimum include the following: (DSUP2002-0044)
    a. The use of freestanding light poles on the top level shall be minimized and the height shall be the minimum necessary. The use of bollard lighting or similar light sources other than freestanding poles shall be encouraged.
    b. The entire exterior of the parking structure shall be brick and precast concrete as generally depicted on the preliminary elevations.
    c. The window openings for the stair towers of the parking structure shall be as generally represented on the preliminary architectural elevations.
    d. The height of the parking structure shall not be increased above what is generally represented on the preliminary plans. (P&Z)

26. **CONDITION ADDED BY STAFF:** Building materials, finishes, and relationships shall be subject to review and approval by the Department of Planning and Zoning for substantial conformance to the Preliminary Plan and as set forth in the associated Guidelines for Preparations of Mock-Up Panels Memo to Industry, effective May 16, 2013. The following submissions shall be provided to review the materials, finishes and architectural details, prior to selection of final building materials: (DSUP2017-0016)
    a. Provide a materials board that includes all proposed materials and finishes at first Final Site Plan. *
    b. The materials board shall remain with the Department of Planning and Zoning until the final certificate of occupancy, upon which all samples shall be returned to the applicant.***
    c. Provide drawings of a mock-up panel that depict all proposed materials, finishes, and relationships as part of the first Final Site Plan. *
    d. Construct an on-site, mock-up panel of proposed materials, finishes, and relationships for review and approval prior to final selection of building materials. The mock-up panel shall be constructed and approved prior to vertical (above-grade) construction and prior to ordering final building materials. **
    e. The mock-up panel shall be located such that it shall remain on-site in the same location through the duration of construction until the first certificate of occupancy. *** (P&Z)

27. **CONDITION ADDED BY STAFF:** The applicant shall work with the City for recycling and/or reuse of the existing building materials as part of the demolition process, including leftover, unused, and/or discarded building materials. (T&ES)(P&Z) (DSUP2017-0016)

28. **CONDITION ADDED BY STAFF:** In order to provide a more sustainable use of natural resources, the applicant shall use EPA-labeled WaterSense or equivalent low flow fixtures. In addition, the applicant is encouraged to explore the possibilities of adopting water reduction strategies (i.e., use of gray water system on-site) and other measures that could reduce the consumption of potable water on this site. A list of applicable mechanisms can be found at http://www.epa.gov/WaterSense. (T&ES) (DSUP2017-0016)

V. PEDESTRIAN CIRCULATION AND ACCESS

29. The concrete sidewalks shall continue over all three curb cuts on King Street to provide an uninterrupted sidewalk. Provide stamped and colored bomanite paver crosswalks at these locations. All sidewalks within the site shall be connected to the public sidewalks to the satisfaction of the Directors of P&Z and T&ES. (P&Z)(T&ES) (DSUP2002-0044)

30. Provide a hardscape and courtyard plan to the satisfaction of the Director of P&Z that at a minimum includes the following: (DSUP2002-0044)
    a. Extension of the center median at the Kenwood Avenue to create a pedestrian refuge area.
    b. Improved pedestrian access from the main student entrance and from the garage to the stadium/fields with functional pedestrian access and wheelchair access between the parking garage and the main school building, track, playing fields and stadium, generally consistent with *Figure 2.*
    c. Provide an additional pedestrian entrance/exit at the southeast corner of the garage.
    d. Revised design for the stairs from the athletic wing to the stadium to maximize the open area around the track.
        i. Special pavement materials and accents shall be used to distinguish and emphasize pedestrian areas.
        ii. Stamped pavement or contrasting pavers on all pedestrian crossings of internal vehicular ways.
        iii. A 10'-wide stair from the rear EVE area to the stadium field located so as to be centered on the EVE for pedestrian convenience.
        iv. The material for the student drop-offs, main entrance area, student commons and the western end of the new playing field shall include decorative pavers, seating areas, landscaping and other amenities to encourage its use to the satisfaction of the Director of P&Z. (P&Z)

31. Provide the following pedestrian improvements to allow for the lighted tennis courts proposed under the DSUP2013-0014 submission to the satisfaction of the Directors of P&Z, RP&CA and T&ES: (DSUP2013-0014)
    a. Complete all pedestrian improvements prior to the issuance of a certificate of occupancy permit.
    b. Construct all concrete sidewalks to City standards.

VI. TRAFFIC AND TRANSPORTATION MANAGEMENT

32. **CONDITION ADDED BY STAFF:** A Maintenance of Traffic Plan shall be provided within the Construction Management Plan and replicate the existing vehicular and pedestrian routes as nearly as practical and the pedestrian pathway shall not be severed or moved for non-construction activities such as parking for vehicles or the storage of materials or equipment. Proposed traffic control plans shall provide continual, safe and accessible pedestrian pathways for the duration of the project. These sheets are to be provided as "Information Only." (T&ES) (DSUP2017-0016)

33. **CONDITION ADDED BY STAFF:** The following notes shall be included on all Maintenance of Traffic Plan Sheets: (T&ES) (DSUP2017-0016)
    a. The prepared drawings shall include a statement "FOR INFORMATION ONLY" on all MOT Sheets.
    b. The sidewalks shall remain open during construction. If sidewalks must be closed, pedestrian access shall be maintained adjacent to the site per memo to industry No. 04-18, or to the satisfaction of the Director of T&ES throughout the construction of the project. The maintenance of pedestrian access shall be included in the Construction Management Plan and will be approved by T&ES. (T&ES)
    c. Any bicycle facilities adjacent to the site shall remain open during construction. If a bicycle facility cannot be maintained on the street adjacent to the site, access shall be maintained by diverting the cyclists into a travel lane through the implementation of appropriate signage, by shifting existing lanes, or through the creation of an off-street diversion directly adjacent to the travel path. Access shall be maintained to the satisfaction of the Director of T&ES throughout the construction of the project. (T&ES)

34. **CONDITION ADDED BY STAFF:** Add complete streets tabulation to the cover sheet with the Final 1 submission. (T&ES) (DSUP2017-0016)

35. **CONDITION ADDED BY STAFF:** All pedestrian, traffic, and way finding signage shall be provided in accordance with the Manual of Uniform Traffic Control Devices (MUTCD), latest edition to the satisfaction of the Director of T&ES. (T&ES) (DSUP2017-0016)

36. Provide a detailed operating plan for the main entrance at Kenwood Avenue to ensure safe access for vehicles and pedestrians, to avoid traffic conflicts, and to prevent queuing back ups onto King Street. Provide enhancements as necessary for the drop-off/pick up loop and parking garage entrance, including signage details, lane marking, a traffic channelization island, and on site personnel to direct traffic at peak times. (P&Z) (T&ES) (DSUP2002-0044)

37. Extend the median at the main entrance at Kenwood Avenue rearward (south) to prohibit cars leaving the garage from making a left turn and crossing traffic to exit the area. The extended median is to include a mountable curb for emergency vehicles and landscaping to the satisfaction of P&Z and RP&CA. (P&Z) (DSUP2002-0044)

38. Maintain the alignment of the school's main entrance/exit lining up with Kenwood Avenue at King Street to the satisfaction of the Director of T&ES. (T&ES) (DSUP2002-0044)

39. Provide a detailed operating plan for the pick up/drop off entrance on Chinquapin Drive to ensure safe access for vehicles and pedestrians, to maintain access to Chinquapin Center and Chinquapin Park, to minimize traffic conflicts, and to prevent queuing back ups onto King Street. Provide enhancements as necessary, including signage, parking restrictions, location of the drop off layby, and on site personnel to direct traffic at peak times. (P&Z) (T&ES) (DSUP2002-0044)

40. The bus entrance at Radford Street will not be signalized. Provide a detailed operating plan for the bus egress during morning and afternoon exits. If operational plan includes use of personnel to control or assist traffic movement, provide assurance that personnel can safely perform this function. (T&ES) (DSUP2002-0044)

41. The bus shelter to be provided at the existing bus stop on King Street at the western service drive shall provide seating and shelter integrated into a structure with a design that complements the design of the new school building to the satisfaction of the Directors of P&Z, TES. (P&Z) (T&ES) (DSUP2002-0044)

42. Prior to the start of construction of any traffic equipment or structures, the applicant shall submit shop drawings to T&ES for approval for the following equipment: traffic signal poles/masts, LED traffic signals, pedestrian signals, backlit street signs, and traffic and pedestrian signage/poles. (T&ES) (DSUP2002-0044)

43. All Traffic Control Device design plans, Work Zone Traffic Control plans, and Traffic Studies shall be sealed by a professional engineer, registered in the Commonwealth of Virginia. (T&ES) (DSUP2002-0044)

44. All traffic signal poles and mast arms shall be black matte finish. (P&Z) (DSUP2002-0044)

45. The applicant shall provide a traffic signal plan with final site plan detailing the proposed signal modifications at the Kenwood Avenue/ King Street intersection. Provide pedestrian countdown heads at the intersection of King Street and Kenwood Ave. (T&ES) (DSUP2002-0044)

46. All driveway entrances and sidewalks in public ROW or abutting public ROW shall meet City standards. (T&ES) (DSUP2002-0044)

47. A decorative metal gate with locked entrance shall be installed at the Woods Avenue entrance to the school site to preclude vehicular traffic, except for emergency and police vehicles. (P&Z) (DSUP2002-0044)

48. Replace existing curb and gutter, sidewalks, and handicap ramps that are in disrepair or broken along King Street frontage. (T&ES) (DSUP2002-0044)

49. Street trees and landscaping to be trimmed and maintained as necessary to avoid blocking visibility of traffic control devices in public right of way. (T&ES) (DSUP2002-0044)

50A. If the City's existing public infrastructure is damaged during construction, or patch work required for utility installation then the applicant shall be responsible for construction/ installation or repair of the same as per the City of Alexandria standards and specifications and to the satisfaction of Director, Transportation and Environmental Services. (T&ES) (DSUP2013-0014)

50B. A pre-construction walk/survey of the site shall occur with Transportation and Environmental Services Construction Management & Inspection staff to document existing conditions prior to any land disturbing activities. (T&ES) (DSUP2013-0014)

50C. Submit a Traffic Control Plan as part of the final site plan, for construction detailing proposed controls to traffic movement, lane closures, construction entrances, haul routes, and storage and staging shall be provided for informational purposes. In addition, the Traffic Control Plan shall be amended as necessary and submitted to the Director of T&ES along with the Building and other Permit Applications as required. The Final Site Plan shall include a statement "FOR INFORMATION ONLY" on the Traffic Control Plan Sheets. (T&ES) (DSUP2013-0014)

51. **CONDITION ADDED BY STAFF:** Preferably a separation of 150', with a minimum of 100' between the beginning of street corner radius and any driveway apron radius shall be maintained on arterial and collector roadways; however, a minimum of 30 feet separation between beginning of street corner radius and any driveway apron radius shall be maintained on residential streets. Additional curb cuts are not recommended since these will impede traffic flow. (T&ES) (DSUP2017-0016)

52. **CONDITION ADDED BY STAFF:** If the City's existing public infrastructure is damaged during construction, or patch work required for utility installation then the applicant shall be responsible for construction/ installation or repair of the same as per the City of Alexandria standards and specifications and to the satisfaction of Director, Transportation and Environmental Services. (T&ES) (DSUP2017-0016)

53. **CONDITION ADDED BY STAFF:** A pre-construction walk/survey of the site shall occur with Transportation and Environmental Services Construction Management & Inspection staff to document existing conditions prior to any land disturbing activities. (T&ES) (DSUP2017-0016)

54. **CONDITION ADDED BY STAFF:** Mark all private street signs that intersect a public street with a fluorescent green strip to notify the plowing crews, both City and contractor, that they are not to plow those streets. (T&ES) (DSUP2017-0016)

55. **CONDITION ADDED BY STAFF:** Traffic Studies and Multi-modal Transportation studies shall be signed and sealed by a professional engineer, registered in the Commonwealth of Virginia. (T&ES) (DSUP2017-0016)

56. **CONDITION ADDED BY STAFF:** Show turning movements of standard vehicles in the parking structure and/or parking lots. Show turning movements of the largest delivery vehicle projected to use the loading dock. Turning movements shall meet AASHTO vehicular guidelines and shall be to the satisfaction of the Director of T&ES. (T&ES) (DSUP2017-0016)

57. **CONDITION ADDED BY STAFF:** All 90 degree vehicle parking spaces adjacent to a sidewalk less than seven feet shall have wheel stops. (T&ES) (DSUP2017-0016)

58. **CONDITION ADDED BY STAFF:** The shared public / private alley providing access to abutting property owners shall be jointly managed and maintained to the satisfaction of the Director of T&ES. A maintenance agreement shall be approved and recorded prior to release of the Site Plan.* (T&ES) (DSUP2017-0016)

VII. *PARKING*

59. **CONDITION AMENDED BY STAFF:** The applicant shall provide an updated ~~follow the~~ Parking Management Plan with the first final site plan submitted which includes details about the parking available at the school and how it will be managed, and methods to minimize the number of vehicles parking on the high school/Chinquapin site, including: (DSUP2002-0044) (DSUP2017-0016)
    a. Administering ~~creating~~ a student parking permit system to limit the number of students who park on site;
    b. relocating and scheduling adult education classes so that parking can be accommodated on site;
    c. scheduling special events to the extent possible so as not to conflict with other on site parking demands and establishing a special events parking management plan to be implemented;
    d. providing overflow parking at neighboring lots;
    e. continuing to collaborate with the RP&CA to create opportunities for programs on both sites to share parking facilities as needed; and
    f. providing incentives to encourage employees to use public transportation such as DASH passes and Metro Check which allows employees to purchase Metro and DASH fare cards. (P&Z) (T&ES)

60. The applicant shall ensure that the parking spaces in the garage and on the site are built to standard dimensions. The conflicts among the various site plan and architectural drawings with varying numbers of parking spaces shall be revised and made consistent. Compact, handicapped and visitor parking spaces shall be labeled on the drawings and signed. (P&Z). (DSUP2002-0044)

61. The applicant shall provide 20 bicycle parking spaces to the satisfaction of the Director of T&ES for construction of the high school. For the proposed tennis courts, provide 4 bicycle parking space(s) per Alexandria's current Bicycle Parking Standards. Bicycle parking standards, acceptable rack types for short- and long-term parking and details for allowable locations are available at: www.alexandriava.gov/bicycleparking. (T&ES) (DSUP2002-0044 & DSUP2013-0014)

62. **CONDITION ADDED BY STAFF:** Construct the 6-space bike rack shown on LS plan section 1 page L1.0. (P&Z) (Transportation Planning) (DSUP2017-0016)

63. Provide wheel stops at the visitor parking lot.

64. **CONDITION ADDED BY STAFF**: Bicycle parking standards, acceptable rack types for short- and long-term parking and details for allowable locations are available at: www.alexandriava.gov/bicycleparking. Details on location and type of bicycle parking

shall be provided on the Final Site Plan. Bicycle parking must be installed and operational prior to first CO. *** (T&ES) (DSUP2017-0016)

VIII. *ENVIRONMENTAL*

65. **CONDITION ADDED BY STAFF:** All stormwater Best Management Practices (BMPs) must be designed to comply with the most recent standards and specifications published in the Virginia Stormwater BMP Clearinghouse. Provide complete design details for all BMPs. This includes site specific plan views, cross sections, planting plans, and complete design calculations for each BMP. (T&ES) (DSUP2017-0016)

66. **CONDITION ADDED BY STAFF:** Provide a BMP table with a separate listing for each individual BMP that includes the name of the practice, total area treated (acres), pervious area treated (acres), impervious area treated (acres), phosphorous removal efficiency (percentage), phosphorous removed by the practice (lbs), and latitude and longitude in decimal degrees (NAD83). (T&ES) (DSUP2017-0016)

67. **CONDITION ADDED BY STAFF:** No later than the final as-built submittal, the existing stormwater Best Management Practices (BMPs) used to meet stormwater compliance for this plan must be maintained and functioning as designed. An inspection form signed by a qualified professional noting the existing BMPs are in compliance with the City's BMP operation and maintenance guidelines must be submitted to the City. (T&ES) (DSUP2017-0016)

68. **CONDITION ADDED BY STAFF:** With the final as built submittal, the Applicant is required to submit construction record drawings for permanent stormwater management facilities to the City. The drawings must be appropriately signed and sealed by a professional registered in the Commonwealth of Virginia and certify that the stormwater management facilities have been constructed in accordance with the approved plan. (T&ES) (DSUP2017-0016)

69. The applicant is advised that all stormwater designs that require analysis of pressure hydraulic systems and/or inclusion and design of flow control structures must be sealed by a professional engineer, registered in the Commonwealth of Virginia. If applicable, the Director of T&ES may require resubmission of all plans that do not meet this standard. (T&ES) (DSUP2002-0044)

70. Plan must demonstrate to the satisfaction of the Director of T&ES that adequate stormwater outfall is available to the site or else developer is to design and build any on or off site improvements to discharge to an adequate outfall. (T&ES) (DSUP2002-0044)

71. Provide proposed elevations (contours and spot elevations) in sufficient details on grading plan to clearly show the drainage patterns. (T&ES) (DSUP2002-0044)

72. Indicate the pipe sizes and add flow arrows for storm and sanitary sewer lines. (T&ES) (DSUP2002-0044)

73. Provide pre and post storm water runoff computations for the two- and ten-year storms. (T&ES) (DSUP2002-0044)

74. The stormwater collection system is part of the Taylor Run/Cameron Run watershed. All on-site stormwater curb inlets and public curb inlets within 50 feet of the property line shall be duly marked to the satisfaction of the Director of T&ES. (T&ES) (DSUP2002-0044)

75. The stormwater Best Management Practices (BMPs) required for this project and the cistern shall be constructed and installed under the direct supervision of the design professional or his designated representative. Prior to issuance of the certificate of occupancy, the design professional shall submit a written certification to the Director of T&ES that the BMPs and cistern are:
    a. Constructed and installed as designed and in accordance with the approved Final Site Plan.
    b. Clean and free of debris, soil and litter by either having been installed or brought into service after site was stabilized. (T&ES) (DSUP2002-0044)

76. The surface appurtenances associated with the on-site structural stormwater Best Management Practices (BMPs) shall be marked to the satisfaction of the Director of T&ES to identify them as part of a structural BMP system. (T&ES) (DSUP2002-0044)

77. For any surface-installed stormwater Best Management Practice (BMP), i.e. Bio-Retention Filters, Vegetated Swales, etc. that are employed for this site, descriptive signage for the BMPs is required to be installed to the satisfaction of the Director of T&ES. (T&ES) (DSUP2002-0044)

78. Prior to the release of the final site plan, the applicant shall execute and submit two originals of a revised maintenance agreement with the City for the stormwater quality Best Management Practices (BMPs) and stormwater quantity (detention) facilities being added as part of DSP2013-00014. The applicant shall be responsible for maintenance of all BMP's and detention facilities associated with the parcel, including those located within the public right-of-way. For BMPs that are located off of the school property and within City right-of-way, the maintenance agreements shall address the additional levels of maintenance to adjacent appurtenances that are affected by the BMPs (ie. sidewalks, landscaping, streets, storm sewers, storm sewer inlets). It must be executed and recorded with the Land Records Division of Alexandria Circuit Court prior to approval of the final site plan. (T&ES) (DSUP2002-0044 & DSUP2013-0014)

79. The applicant shall execute a maintenance service contract with a private contractor for a minimum of three years. A copy of the contract shall be placed in the BMP Operation and Maintenance Manual. Prior to issuance of the certificate of occupancy, a copy of the contract shall be submitted to the City. (T&ES) (DSUP2002-0044)

80. The applicant shall prepare an Owner's Operation and Maintenance Manual for all the Best Management Practices (BMPs) used on site. The manual shall include at a minimum: an explanation of the functions and operations of the BMP(s); drawings and diagrams of the

BMP(s) and any supporting utilities; catalog cuts on maintenance requirements; manufacturer contact names and phone numbers; a copy of the executed maintenance service contract; and a copy of the maintenance agreement with the City. Prior to issuance of the certificate of occupancy, a copy of the Operation and Maintenance Manual shall be submitted to the City on a digital media. (T&ES) (DSUP2002-0044)

81. Stormwater quality and quantity management must be addressed for temporary impervious areas that are proposed to be in place and functioning (i.e. temporary parking lots) for a significant period of time. Proposed temporary BMPs if required by T&ES must be included on the final site plans. (T&ES) (DSUP2002-0044)

82. Proposed synthetic surfaces (i.e. playing field) require stormwater management treatment in an appropriate fashion, including, if necessary, with a BMP. (T&ES) (DSUP2002-0044)

83. Solid waste services are provided by the City. The development must meet all the minimum street standards, including all standards for turnaround movements. (T&ES) (DSUP2002-0044)

83A. The City of Alexandria's storm water management regulations regarding water quality are two-fold: first, phosphorus removal requirement and second, water quality volume default. Compliance with the phosphorus requirement does not relieve the applicant from the water quality default requirement. The water quality volume determined by the site's proposed impervious area shall be treated in a Best Management Practice (BMP) facility. (T&ES) (DSUP2013-0014)

83B. Provide a BMP narrative and complete pre and post development drainage maps that include areas outside that contribute surface runoff from beyond project boundaries to include adequate topographic information, locations of existing and proposed storm drainage systems affected by the development, all proposed BMP's and a completed Worksheet A or B and Worksheet C, as applicable. (T&ES) (DSUP2013-0014)

83C. Prior to commencing use of the tennis courts, the Applicant is required to submit a certification by a qualified professional to the satisfaction of the Director of T&ES that any existing storm water management facilities adjacent to the project and associated conveyance systems were not adversely affected by construction operations. If maintenance of the facility or systems were required in order to make this certification, provide a description of the maintenance measures performed. (T&ES) (DSUP2013-0014)

83D. Indicate whether or not there is any known soil and groundwater contamination present as required with all preliminary submissions. Should any unanticipated contamination, underground storage tanks, drums or containers be encountered at the site, the Applicant must immediately notify the City of Alexandria Department of Transportation and Environmental Services, Division of Environmental Quality. (T&ES) (DSUP2013-0014)

83E. As part of DSP2013-00014, exterior building mounted loudspeakers are prohibited and no amplified sound should be audible at the property line. (T&ES) (DSUP2013-0014)

I. CONSTRUCTION AND UTILITIES

84. The City Attorney has determined that the City lacks the authority to approve the gravity fed sanitary sewer systems which serve over 400 persons. Accordingly, the overall sanitary sewer system for the proposed development must be submitted for approval by the Virginia Department of Health (VDH). Both City and VDH approval are required, though City approval may be given conditioned upon the subsequent issuance of VDH approval. Should state agencies require changes in the sewer design, these must be accomplished by the developer prior to the release of a certificate of occupancy for the units served by this system. Prior to the acceptance of dedications of the sewers by the city or release of any construction bonds, the developer must demonstrate that all necessary state agency permits have been obtained and as-built drawings submitted to the City that reflect all changes required by the state. (T&ES) (DSUP2002-0044)

85. The site is located on marine clay areas as delineated on City map of marine clay areas. Provide geotechnical report including recommendations from a geotechnical professional for proposed cut slopes and embankments. (T&ES) (DSUP2002-0044)

86. Provide a demolition plan that indicates which existing utilities are to be removed and which are to remain. (T&ES) (DSUP2002-0044)

87. During the construction phase of this development, the site developer, its contractor, certified land disturber, or owner's other agents shall implement a waste and refuse control program. This program shall control wastes such as discarded building materials, concrete truck washout, chemicals, litter or trash, trash generated by construction workers or mobile food vendor businesses serving them and sanitary waste at the construction site and prevent its off-site migration that may cause adverse impacts to the neighboring properties or the environment to the satisfaction of Directors of T&ES and Code Enforcement. All wastes shall be disposed off-site properly in accordance with all applicable federal, state and local laws. (T&ES) (DSUP2002-0044)

88A. A "Certified Land Disturber" (CLD) shall be named in a letter to the Division Chief of Construction Management & Inspection (CM&I) prior to any land disturbing activities. If the CLD changes during the project, that change must be noted in a letter to the Division Chief. A note to this effect shall be placed on the Phase I Erosion and Sediment Control sheets on the site plan. (T&ES) (DSUP2013-0014)

88B. The sidewalks shall remain open during construction or pedestrian access shall be maintained to the satisfaction of the Director of T&ES throughout the construction of the project. (T&ES) (DSUP2013-0014)

88C. No major construction staging shall be allowed within the public right-of-way on King Street. The applicant shall meet with T&ES to discuss construction staging activities prior to release of any permits for ground disturbing activities. ** (T&ES) (DSUP2013-0014)

88D. **CONDITION AMENDED BY STAFF:** Prior to commencing clearing and grading of the site, the applicant shall hold a meeting with notice to all adjoining property owners and civic associations to review the location of construction worker parking, plan for temporary pedestrian and vehicular circulation, and hours and overall schedule for construction. The Departments of P&Z and T&ES shall be notified a minimum of 14 calendar days prior to ~~of~~ the date of the meeting, and the meeting must be held before any ~~the~~ permits ~~is~~ are issued. (P&Z)(T&ES) (DSUP2013-0014) (DSUP207-0016)

88E. Identify a person who will serve as a liaison to the community throughout the duration of construction. The name and telephone number, including an emergency contact number, of this individual shall be provided in writing to residents, property managers and business owners whose property abuts the site and shall be placed on the project sign, to the satisfaction of the Directors of P&Z, and/or and T&ES. (P&Z)(T&ES) (DSUP2013-0014)

88F. Contractors shall not cause or permit vehicles to idle for more than 10 minutes when parked. (T&ES) (DSUP2013-0014)

88G. Locate all private utilities without a franchise agreement outside of the public right-of-way and public utility easements. (T&ES) (DSUP2013-0014)

89. **CONDITION ADDED BY STAFF:** Provide off-street parking for all construction workers without charge to the construction workers. Construction workers shall not be permitted to park on-street, and the applicant shall be responsible for ensuring that all contractors use the off-street parking provided. For the construction workers who use Metro, DASH, or another form of mass transit to the site, the applicant shall subsidize a minimum of 50% of the fees for mass transit. Compliance with this condition shall be a component of the construction management plan, which shall be submitted to the Department of P&Z and T&ES prior to Final Site Plan release. This plan shall: (DSUP2017-0016)

a. Establish the location of the parking to be provided at various stages of construction, how many spaces will be provided, how many construction workers will be assigned to the work site, and mechanisms which will be used to encourage the use of mass transit.
b. Provide for the location on the construction site at which information will be posted regarding Metro schedules and routes, bus schedules and routes.
c. If the off-street construction workers parking plan is found to be violated during the course of construction, a correction notice will be issued to the developer. If the violation is not corrected within five (5) days, a "stop work order" will be issued, with construction halted until the violation has been corrected. * (P&Z)(T&ES)

90. **CONDITION ADDED BY STAFF:** Prior to commencement of landscape installation/planting operations, a pre-installation/construction meeting will be scheduled with the project planner in the Department of Planning & Zoning to review the scope of

installation procedures and processes. This is in addition to the pre-construction meeting required above. (P&Z) (DSUP2017-0016)

91. **CONDITION ADDED BY STAFF:** Temporary construction and/or on-site sales trailer(s) shall be permitted and be subject to the approval of the Director of P&Z. The trailer(s) shall be removed prior to the issuance of a final certificate of occupancy permit. *** (P&Z) (Code) (DSUP2017-0016)

92. **CONDITION ADDED BY STAFF:** Submit a wall check prior to the commencement of construction of the first floor above grade framing for the building(s). The wall check shall include the building footprint, as depicted in the released Final Site Plan, the top-of-slab elevation and the first floor elevation. The wall check shall be prepared and sealed by a registered engineer or surveyor, and submitted to Planning & Zoning. Approval of the wall check by Planning & Zoning is required prior to commencement of framing. (P&Z) (DSUP2017-0016)

93. **CONDITION ADDED BY STAFF:** Submit an as-built development site plan survey, pursuant to the requirements outlined in the initial as-built submission for occupancy portion of the as-built development site plan survey checklist to the Department of Transportation and Environmental Services Site Plan Coordinator prior to requesting a certificate of occupancy permit. The as-built development site plan survey shall be prepared and sealed by a registered architect, engineer, or surveyor. Include a note which states that the height was calculated based on all applicable provisions of the Zoning Ordinance. *** (P&Z) (T&ES) (DSUP2017-0016)

II. GENERAL SITE PLAN REQUIREMENTS

94. Any inconsistencies among the various drawings submitted by the applicant shall be reconciled to the satisfaction of the Directors of P&Z and T&ES. (P&Z) (DSUP2002-0044)

95. The applicant shall be allowed to make minor adjustments to the building if the changes do not result in a loss of parking or open space, impact on the Emergency Vehicle Easement, or an increase in building height or floor area ratio. (P&Z) (DSUP2002-0044)

96. The limits of disturbance on the proposed site plan shall be revised to include all land area within the phasing plan, to include for example the temporary parking area, the construction staging area and the area for classroom trailers. The limits of disturbance shall be adjusted so as not to include tree save areas on the western perimeter near Woods Avenue. (P&Z) (DSUP2002-0044)

97. Clarify the location of the cistern. The cover sheet states that it is under the parking structure, sheet 7 indicates that is under the practice field, and sheet 22 indicates that it is under the parking structure. (T&ES) (DSUP2002-0044)

98. Applicant shall provide three (3) City standard trash receptacles, Iron Site Bethesda Series Model #SD-42, with spun steel dome and side door access, manufactured by Victor

Stanley, Inc. of Dunkirk, MD, or provide $850 each to the Director of T&ES for the purchase and installation of three (3) City standard street cans, two along King Street at both the existing and proposed bus stops and one on Chinquapin Drive at the layby area. (T&ES) (DSUP2002-0044)

99. Show all existing and proposed easements, both public and private. (T&ES) (DSUP2002-0044)

100. Provide City standard pavement details or alternative pavement details on the plan for emergency vehicle easements, sealed by a professional engineer registered in the Commonwealth of Virginia, designed to the satisfaction of the Director of T&ES. (T&ES) (DSUP2002-0044)

101. Prior to the issuance of a demolition permit or land disturbance permit, a rodent abatement plan shall be submitted to Code Administration that will outline the steps that will be taken to prevent the spread of rodents from the construction site to the surrounding community and sewers. (Code) (DSUP2002-0044 & DSUP2013-0014)

101A. Submit the plat with all applicable easements or vacations prior to the final site plan submission. The plat(s) shall be approved and recorded prior to the release of the final site plan.* (P&Z)(T&ES) (DSUP2013-0014)

102. **CONDITION ADDED BY STAFF:** Design and develop a sign plan for wayfinding and directional signage. The plan shall be included as part of the Final Site Plan and shall coordinate the location, scale, massing and character of all proposed signage to the satisfaction of the Director of T&ES. Installation of building mounted signage shall not damage the building and signage shall comply with all applicable codes and ordinances * (T&ES) (DSUP2017-0016)

103. **CONDITION ADDED BY STAFF:** Signs indicating the operating hours, rules, and regulations for athletic fields and courts shall be placed at facility access points to the satisfaction of the Director of Planning and Zoning. (P&Z) (DSUP2017-0016)

III. NEIGHBORHOOD COMMITTEES

104. To provide a forum for the discussion and resolution of neighborhood issues that arise during the construction of the new school, ACPS shall create and coordinate a Community Advisory Committee, to include ACPS officials; T.C. Williams officials; Department of Recreation, Parks and Cultural Activities officials; representatives of the adjoining neighborhoods; and representatives of the entities involved in the construction project, such as the general contractor. The Advisory Committee shall meet periodically as conditions dictate throughout the period of construction. (P&Z) (DSUP2002-0044)

105. To provide a permanent forum for the discussion and resolution of neighborhood issues that arise as a result of the ongoing operation of the new high school, ACPS shall create and coordinate a Community Advisory Committee to include representatives of ACPS, TC

Williams High School, the Department of Recreation, Parks and Cultural Activities, and the adjoining neighborhoods. The Advisory Committee shall determine its meeting schedule, which may be either on a regular basis or as conditions require. Use of the stadium speaker system by RPCA shall not be increased beyond historical levels (last two years) without agreement by this Committee or by the Planning Commission and City Council. (P&Z) (PC) (DSUP2002-0044)

XII. SECURITY

106. The applicant is to consult with the Crime Prevention Unit of the Alexandria Police Department regarding the layout of the building as well as security hardware, and alarms for the building. The number for the Crime Prevention Unit is 703-838-4520. (DSUP2002-0044)

107. A security survey for any on site construction trailer(s) shall be completed as soon as the trailers are located on the site. (Police) (DSUP2002-0044)

108. The proposed shrubbery is to have a maximum height of 36 inches when it matures, unless required for screening and not located within six feet of walkways. (Police) (DSUP2002-0044)

109. All trees, except evergreens for screening, are to be limbed up a minimum of six feet as they mature to allow for natural surveillance. (Police) (DSUP2002-0044)

110. Trees are not to be planted under or near light poles. (Police) (DSUP2002-0044)

111. The parking garage shall include security systems, including an alarm system if appropriate and cameras placed throughout the garages and monitored by the staff at the main school alarm headquarters, all to the satisfaction of the Chief of Police. (Police) (DSUP2002-0044)

112. The interior walls, ceilings, and pillars in the garage are to be painted white. (Police) (DSUP2002-0044)

113. Gates installed to restrict vehicular access at the rear and side of the building and at Woods Avenue shall be accessible to both emergency vehicles and the Police, and shall be equipped with the following measures to the satisfaction of the director of Code Enforcement: (DSUP2002-0044)
    i. A siren activation system which will unlock and open the security gates upon initiation of a yelp signal from the fire apparatus siren.
    ii. A key override system keyed to the Knox Box system for the City of Alexandria which will unlock and open the security gates upon insertion of a Knox Box Key approved by the City of Alexandria.
    iii. Gates shall open upon activation of the school's fire alarm system. (P&Z) (Police) (Code)

XIII. EMERGENCY ACCESS

114. All structures shall be required to have an approved automatic fire detection and suppression system in accordance with the Uniform Statewide Building Code. (Code) (DSUP2002-0044)

115. All Emergency Vehicle Easement (EVE) areas shall be maintained at a minimum of 22 feet in width, a minimum of R-25 turning radii, vehicle loading conforming to AAHSTO Loading Standard H-20, and shall be recorded in the land records. (P&Z) (DSUP2002-0044)

116. Detailed information shall be provided to the Director of Code Enforcement regarding the proposed reinforced turf product(s) to be used to demonstrate sufficiently that the product chosen will withstand the proposed installation, grade, location, and use. (Code) (DSUP2002-0044)

117. All fire hydrants shall conform to the City of Alexandria specifications for fire hydrants as detailed in the *Water and Fire Requirements for Site Plans and New Construction*. (Code) (DSUP2002-0044)

118. All hydrants shall be located so the distance measured from the hydrant to the most remote point of vehicular access on the site is 300 feet (Code). Also, there shall be at most 600' between hydrants and at least one hydrant within 100' of each FDC. (Code) (DSUP2002-0044)

119. Parallel and perpendicular parking shall be prohibited on all paved areas located next to the school structure (Code) (DSUP2002-0044)

XIV. LIGHTING

120. The applicant shall submit a detailed lighting plan, to include all existing and proposed street lights and site lights, indicating the types of fixture, mounting heights and strength of fixture in Lumens or Watts and providing manufacturers' specifications for the fixtures and lighting analysis to verify that lighting is consistent with city standards for illumination level and uniformity and acceptable to the Departments of T&ES and P&Z, in consultation with the Police. Particular attention must be paid with regard to the lighting for the parking garage to achieve the goals of security and aesthetics, and to minimize impact to neighboring properties. Pole mounted lights shall be minimized on the garage upper level; rooftop lighting in bollards or roof mounted fixtures shall be the preferred option. (P&Z) (T&ES) (DSUP2002-0044)

121. **CONDITION DELETED BY STAFF:** ~~No permanent stadium lighting shall be installed at the School stadium or on any other athletic fields, except as to allow for the lighted tennis courts proposed under the DSUP2013-0014 submission. For the courts, the number of poles, mounting heights and the light types shall be consistent with the Preliminary Plan~~

~~dated 10/01/13 for DSUP2013-0014. (P&Z) (DSUP2002-0044 & DSUP2013-0014) (City Council)~~ (DSUP2017-0016)

122. Site lighting (e.g., parking garage lighting, parking lot lighting, and perimeter security lighting) shall be directed to the school property and away from residential neighborhoods to the maximum extent possible. Representatives of adjacent neighborhoods will have an opportunity to review the proposed lighting plan prior to release of the final site plan. (P&Z) (DSUP2002-0044)

122A. Provide a lighting plan with the final site plan to verify that lighting meets City standards. The plan shall be to the satisfaction of the Directors of T&ES, P&Z, and/or RP&CA in consultation with the Chief of Police and shall include the following: (DSUP2013-0014)

a. Clearly show location of all existing and proposed street lights and site lights, shading back less relevant information.
b. A lighting schedule that identifies each type and number of all fixtures, mounting height, and strength of fixture in Lumens or Watts.
c. Manufacturer's specifications and details for all proposed fixtures including site, landscape, pedestrian, sign(s) and security lighting.
d. A photometric plan with lighting calculations that include all existing and proposed light fixtures, including any existing street lights located on the opposite side(s) of all adjacent streets. Photometric calculations must extend from proposed building face(s) to property line and from property line to the opposite side(s) of all adjacent streets and/or 20 feet beyond the property line on all adjacent properties and rights-of-way. Show existing and proposed street lights and site lights.
e. Photometric site lighting plan shall be coordinated with architectural/building mounted lights, site lighting, street trees and street lights to minimize light spill into adjacent residential areas.
f. Provide location of conduit routing between site lighting fixtures so as to avoid conflicts with street trees.
g. Detail information indicating proposed light pole and footing in relationship to adjacent grade or pavement. All light pole foundations shall be concealed from view.
h. The lighting for the areas not covered by the City of Alexandria' standards shall be designed to the satisfaction of Directors of T&ES and P&Z.
i. Provide numeric summary for various areas (i.e., roadway, walkway/ sidewalk, alley, and parking lot, etc.) in the proposed development.
j. Upon installation of all exterior light fixtures for the site, the applicant shall provide photographs of the site demonstrating compliance with this condition.
k. Full cut-off lighting shall be used at the development site to prevent light spill onto adjacent properties. (P&Z)(T&ES)(RP&CA)(Police)(BAR)(City Council)

123. **CONDITION ADDED BY STAFF:** The applicant shall perform a lighting test and provide test results to verify compliance with Code of Ordinances Section 13-1-3 as a condition of issuance of a certificate of occupancy. *** (DSUP2017-0016)

124. **CONDITION ADDED BY STAFF:** If the City of Alexandria receives complaints on lighting levels after the commissioning of the lights and prior to the release of the performance bond then the applicant shall make additional improvements to adjust lighting levels to the satisfaction of the Director of T&ES to comply with Section 13-1-3 of the City Code. (DSUP2017-0016)

125. **CONDITION ADDED BY STAFF:** Athletic field lighting shall be operated only by ACPS staff or authorized persons. (DSUP2017-0016)

126. **CONDITION ADDED BY STAFF:** Athletic field lighting used for ACPS academic and athletic programs, such as practices, shall be turned off no later than one half-hour after the activity ends. In no case shall athletic field lighting for this use be turned off later than 8:30 PM. (DSUP2017-0016)

127. **CONDITION ADDED BY STAFF:** Athletic field lighting used for ACPS athletic events and other ACPS-approved events shall be turned off no later than 15 minutes after the activity ends. In no case shall athletic field lighting for this use be turned off later than 10:15 PM. Events requiring lighting per this condition may only be held on Fridays and Saturdays. (DSUP2017-0016)

I. NOISE

128. **CONDITION ADDED BY STAFF:** The applicant shall perform a sound system test and provide test results to verify compliance with the residential standards of the Code of Ordinances Title 11 Chapter 5 as a condition of issuance of a certificate of occupancy and must conform with the sound study provided with the DSUP application which shows conformance with maximum residential use area decibel limits. *** (DSUP2017-0016)

129. **CONDITION ADDED BY STAFF:** Athletic field sound system(s) shall be operated only by ACPS staff or authorized persons during scheduled ACPS athletic events or ACPS-approved events, in accordance with the times stated in Conditions 126 and 127 above. (DSUP2017-0016)

II. PHASING

130. The applicant shall prepare and submit with the final site plan a detailed phasing plan and construction management plan for the entire project for review and approval by the Directors of P&Z, T&ES RP&CA and Code Enforcement, whose approval is required prior to approval and partial release of Erosion and Sediment Control for the final site plan. In addition, building and construction permits required for site preconstruction shall be permitted prior to release of the final site plan to the satisfaction of the Director of T&ES.

At a minimum, the plan shall include the following: (DSUP2002-0044 & DSUP2013-0014)

a. Phasing for each portion of the project and for each required public service, installation or improvement (streets, traffic signals, vehicular traffic circulation, including service vehicles, student pick-up and drop-off sidewalks, etc.).
b. A Traffic Control Plan detailing proposed controls to traffic movement, lane closures, construction entrances, haul routes, and storage and staging.
c. A plan for temporary pedestrian and vehicular circulation during construction. The plan shall identify temporary sidewalks, fencing around the site and any other features necessary to ensure safe pedestrian and vehicular travel around the site during construction, (including temporary sidewalks), including methods for constructing the parking garage without disturbing pedestrian access from completed portions of the project, and a plan for school bus loading and unloading,
d. A plan for parking for students, teachers, staff and visitors, with signage, pedestrian access, and proper installation.
e. A plan for parking for construction workers. The developer shall secure off-street locations for all construction workers to park without charge and shall provide a minimum transit subsidy of 50% of the fees to workers for utilizing Metro, DASH, or another form of mass transit to the site. Van pools or other methods of providing for construction workers to arrive at the site should also be encouraged. This plan shall set forth, for example, the location of the parking to be provided at various stages of construction, the number of spaces will be provided, the estimated number of construction workers to be assigned to the work site, and mechanisms which will be used to encourage the use of Metro, carpooling, vanpooling, and other similar efforts.
f. Provisions for the following:
    i. Temporary utility plan
    ii. Temporary stormwater management facilities
    iii. Safety and security issues
    iv. Noise, and impacts on neighbors
    v. Emergency vehicle access and fire department water supply
    vi. Tree protection
g. All other phasing details deemed necessary by the Directors of P&Z, T&ES RP&CA and Code Enforcement.
h. Include analysis as to whether temporary street lighting is needed on the site and how it is to be installed.
i. Include the overall schedule for construction and the hauling route;
j. Copies of the plan shall be posted in the construction trailer and given to each subcontractor before they commence work;
k. Provide for the location on the construction site at which information will be posted regarding Metro schedules and routes, bus schedules and routes ;
l. If the plan is found to be violated during the course of construction, citations will be issued for each infraction and a correction notice will be forwarded to the applicant. If the violation is not corrected within five (5) calendar days, a “stop work order” will be issued, with construction halted until the violation has been corrected. .* (P&Z) (T&ES)

131. Before commencing any clearing or grading of the site, the applicant shall hold a meeting with members of the Construction Advisory Committee to review the hauling route, location of construction worker parking, plan for temporary pedestrian and vehicular circulation, and hours and overall schedule for construction. The Departments of P&Z, RP&CA and T&ES shall be notified of the date of the meeting upon issuance of the permit. Copies of plans showing the hauling route, construction worker parking and temporary pedestrian and vehicular circulation shall be posted in the construction trailer and given to each subcontractor before they commence work on the project. (P&Z) (RP&CA) (T&ES) (DSUP2002-0044)

132. A temporary informational sign shall be installed on the site prior to approval of the final site plan for the project and shall be displayed until construction is complete; the sign shall notify the public of the nature of the upcoming project and shall provide a phone number for public questions regarding the project. (P&Z) (DSUP2002-0044)

133. Temporary construction trailer(s) or modular buildings shall be permitted and be subject to the approval of the Director of P&Z, RP&CA and Code Enforcement. (P&Z) (Code) (DSUP2002-0044)

III. ARCHAEOLOGY

134. **CONDITION ADDED BY STAFF:** Call Alexandria Archaeology immediately (703-746-4399) if any buried structural remains (wall foundations, wells, privies, cisterns, etc.) or concentrations of artifacts are discovered during development. Work must cease in the area of the discovery until a City archaeologist comes to the site and records the finds. The language noted above shall be included on all final site plan sheets involving any ground disturbing activities. (Archaeology) (DSUP2017-0016)

135. **CONDITION ADDED BY STAFF:** The applicant shall not allow any metal detection and/or artifact collection to be conducted on the property, unless authorized by Alexandria Archaeology. Failure to comply shall result in project delays. The language noted above shall be included on all final site plan sheets involving any ground disturbing activities. (Archaeology) (DSUP2017-0016)

CITY DEPARTMENT COMMENTS

Legend: C - *code requirement* R - *recommendation* S - *suggestion* F - *finding*

Transportation and Environmental Services

C- 1 Bond for the public improvements must be posted prior to release of the plan, if applicable.

C- 2 All downspouts must be connected to a storm sewer by continuous underground pipe.

C- 3 Plans and profiles of utilities and roads in public easements and/or public right-of-way must be approved prior to release of the plan.

C- 4 All drainage facilities must be designed to the satisfaction of T&ES. Drainage divide maps and computations must be provided for approval.

C- 5 (a) Per the requirements of Section 5-3-2, Article A, Chapter 3 of the City of Alexandria Code, all new customer utility services, extensions of existing customer utility services and existing overhead customer utility services supplied by any existing overhead facilities which are relocated underground shall, after October 15, 1971 be installed below the surface of the ground except otherwise exempted by the City Code and to the satisfaction of the Director, Department of Transportation and Environmental Services. (b) Per the requirements of Section 5-3-3, Article A, Chapter 3 of the City of Alexandria Code, all new installation or relocation of poles, towers, wires, lines, cables, conduits, pipes, mains, and appurtenances used or intended to be used to transmit or distribute any service such as electric current, telephone, telegraph, cable television, traffic control, fire alarm, police communication, gas, water, steam or petroleum, whether or not on the streets, alleys, or other public places of the City shall, after October 15, 1971, be installed below the surface of the ground or below the surface in the case of bridges and elevated highways except otherwise exempted by the City Code and to the satisfaction of Director, Department of Transportation and Environmental Services. (T&ES)

C- 6 Provide site lighting plan to meet minimum city standards.

C- 7 The applicant must comply with the Article XIII of the City of Alexandria Zoning Ordinance, which includes requirements for storm water pollutant load reduction, treatment of the water quality volume default, and storm water quantity management.

C- 8 The applicant shall comply with the City of Alexandria's Noise Control Code, Title 11, Chapter 5, which sets the maximum permissible noise levels as measured at the property line.

C- 9 **COMMENT ADDED BY STAFF:** The Applicant shall install the proposed loudspeaker system identified in the January 22, 2018 report. (DSUP2017-0016)

C- 10 **COMMENT ADDED BY STAFF:** The Applicant shall hold a meeting with the community and the Community Advisory Committee to present the findings of this noise study and the proposed loudspeaker system prior to its installation. (DSUP2017-0016)

C- 11 The applicant must comply with the City of Alexandria, Erosion and Sediment Control Code, Section 5, Chapter 4.

C- 12 All required permits from Virginia Department of Environmental Quality, Environmental Protection Agency, Army Corps of Engineers, Virginia Marine Resources must be in place for all project construction and mitigation work prior to release of the final site plan. This includes the state requirement for a VSMP permit for all construction activities greater than 2500 SF.

C- 13 Per the requirements of the City of Alexandria Zoning Ordinance Article XI, the applicant shall complete a drainage study and adequate outfall analysis for the total drainage area to the receiving sewer that serves the site. If the existing storm system is determined to be inadequate then the applicant shall design and build on-site or off-site improvements to discharge to an adequate outfall; even if the post development storm water flow from the site is reduced from the pre-development flow. The Plan shall demonstrate to the satisfaction of the Director of T&ES that a non-erosive stormwater outfall is present. (T&ES)

C- 14 Per the requirements of the City of Alexandria Zoning Ordinance (AZO) Article XIII, the applicant shall comply with the peak flow requirements and prepare a Stormwater Management Plan so that from the site, the post-development peak runoff rate form a two-year storm and a ten-year storm, considered individually, shall not exceed their respective predevelopment rates. If combined uncontrolled and controlled stormwater outfall is proposed, the peak flow requirements of the Zoning Ordinance shall be met. If the project site lies within the Braddock-West watershed then the applicant shall provide an additional 10% storage of the pre-development flows in this watershed to meet detention requirements. (T&ES)

C- 15 Per the requirements of Article 13-113 (d) of the AZO, all stormwater designs that require analysis of pressure hydraulic systems, including but not limited to the design of flow control structures and storm water flow conveyance systems shall be signed and sealed by a professional engineer, registered in the Commonwealth of Virginia. The design of storm sewer shall include the adequate outfall, inlet, and hydraulic grade line (HGL) analyses that shall be completed to the satisfaction of the Director of T&ES. Provide appropriate reference and/or source used to complete these analyses. (T&ES)

C- 16 Location of customer utility services and installation of transmission, distribution and main lines in the public rights of way by any public service company shall be governed by franchise agreement with the City in accordance with Title 5, Chapter 3, Section 5-3-2 and Section 5-3-3, respectively. The transformers, switch gears, and boxes shall be located

outside of the public right of way. (T&ES)

C- 17 The applicant shall be responsible to deliver all solid waste, as defined by the City Charter and Code of the City of Alexandria, to the Covanta Energy Waste Facility located at 5301 Eisenhower Avenue. A note to that effect shall be included on the plan. The developer further agrees to stipulate in any future lease or property sales agreement that all tenants and/or property owners shall also comply with this requirement. (T&ES)

C- 18 All easements and/or dedications must be recorded prior to release of the site plan.* (T&ES)

C- 19 Provide a phased erosion and sediment control plan consistent with grading and construction plan. (T&ES)

C- 20 Per the Memorandum to Industry, dated July 20, 2005, the applicant is advised regarding a requirement that applicants provide as-built sewer data as part of the final as-built process. Upon consultation with engineering firms, it has been determined that initial site survey work and plans will need to be prepared using Virginia State Plane (North Zone) coordinates based on NAD 83 and NAVD 88. Control points/Benchmarks which were used to establish these coordinates should be referenced on the plans. To insure that this requirement is achieved, the applicant is requested to prepare plans in this format including initial site survey work if necessary. (T&ES)

C- 21 The thickness of sub-base, base, and wearing course shall be designed using "California Method" as set forth on page 3-76 of the second edition of a book entitled, "Data Book for Civil Engineers, Volume One, Design" written by Elwyn E. Seelye. Values of California Bearing Ratios used in the design shall be determined by field and/or laboratory tests. An alternate pavement section for Emergency Vehicle Easements (EVE) to support H-20 loading designed using California Bearing Ratio (CBR) determined through geotechnical investigation and using Virginia Department of Transportation (VDOT) method (Vaswani Method) and standard material specifications designed to the satisfaction of the Director of Transportation and Environmental Services (T&ES) will be acceptable. (T&ES)

C- 22 All pedestrian, traffic, and way finding signage shall be provided in accordance with the Manual of Uniform Traffic Control Devices (MUTCD), latest edition to the satisfaction of the Director of T&ES. (T&ES)

C- 23 All sanitary laterals and/or sewers not shown in the easements shall be owned and maintained privately. (T&ES)

F-1 Indicate pipe sizes and add flow arrows for storm and sanitary sewer lines.

F-2 Indicate horizontal clearances between utilities in rear of building. Provide minimum 5' clearances between utilities to adequately construct and maintain each utility.

F-3 Since the record drawings, maps, and other documents of the City of Alexandria, State, and Federal agencies show the true north pointing upwards, therefore, the Site Plan shall show the true north arrow pointing upward as is customary; however, for the sake of putting the plan together and/or ease of understanding, the project north arrow pointing upward, preferably east, or west may be shown provided it is consistently shown in the same direction on all the sheets with no exception at all. The north arrow shall show the source of meridian. The project north arrow pointing downward will not be acceptable even if, it is shown consistently on all the sheets. (T&ES)

F-4 The Final Site Plan must be prepared per the requirements of Memorandum to Industry 02-09 dated December 3, 2009, Design Guidelines for Site Plan Preparation, which is available at the City's following web address:

http://alexandriava.gov/uploadedFiles/tes/info/Memo%20to%20Industry%20No.%2002-09%20December%203,%202009.pdf

F-5 The plan shall show sanitary and storm sewer, and water line in plan and profile in the first final submission and cross reference the sheets on which the plan and profile is shown, if plan and profile is not shown on the same sheet. Clearly label the sanitary and storm sewer, or water line plans and profiles. Provide existing and proposed grade elevations along with the rim and invert elevations of all the existing and proposed sanitary and storm sewer at manholes, and water line piping at gate wells on the respective profiles. Use distinctive stationing for various sanitary and storm sewers (if applicable or required by the plan), and water line in plan and use the corresponding stationing in respective profiles. (T&ES)

F-6 The Plan shall include a dimension plan with all proposed features fully dimensioned and the property line clearly shown. (T&ES)

F-7 Include all symbols, abbreviations, and line types in the legend. (T&ES)

F-8 All storm sewers shall be constructed to the City of Alexandria standards and specifications. Minimum diameter for storm sewers shall be 18" in the public Right of Way (ROW) and the minimum size storm sewer catch basin lead is 15". The acceptable pipe materials will be Reinforced Concrete Pipe (RCP) ASTM C-76 Class IV. Alternatively, AWWA C-151 (ANSI A21.51) Class 52 may be used if approved by the Director of T&ES. For roof drainage system, Polyvinyl Chloride (PVC) ASTM D-3034-77 SDR 26 and ASTM 1785-76 Schedule 40 pipes will be acceptable. The acceptable minimum and maximum velocities will be 2.0 fps and 15 fps, respectively. The storm sewers immediately upstream of the first manhole in the public Right of Way shall be owned and maintained privately (i.e., all storm drains not shown within an easement or in a public Right of Way shall be owned and maintained privately). (T&ES)

F-9 All sanitary sewers shall be constructed to the City of Alexandria standards and specifications. Minimum diameter of sanitary sewers shall be 10" in the public Right of Way and sanitary lateral 6" for all commercial and institutional developments; however, a 4" sanitary lateral will be acceptable for single family residences. The acceptable pipe

materials will be Polyvinyl Chloride (PVC) ASTM D-3034-77 SDR 26, ASTM 1785-76 Schedule 40, Ductile Iron Pipe (DIP) AWWA C-151 (ANSI A21.51) Class 52, or reinforced concrete pipe ASTM C-76 Class IV (For 12" or larger diameters); Class III may be acceptable on private properties. The acceptable minimum and maximum velocities will be 2.5 fps and 10 fps, respectively. Laterals shall be connected to the sanitary sewer through a manufactured "Y" or "T" or approved sewer saddle. Where the laterals are being connected to existing Terracotta pipes, replace the section of main and provide manufactured "Y" or "T", or else install a manhole.

F-10 Lateral Separation of Sewers and Water Mains: A horizontal separation of 10' (edge to edge) shall be provided between a storm or sanitary sewer and a water line; however, if this horizontal separation cannot be achieved then the sewer and water main shall be installed in separate trenches and the bottom of the water main shall be at least 18" above of the top of the sewer. If both the horizontal and vertical separations cannot be achieved then the sewer pipe material shall be Ductile Iron Pipe (DIP) AWWA C-151 (ANSI A21.51) Class 52 and pressure tested in place without leakage prior to installation.(T&ES)

F-11 Crossing Water Main Over and Under a Sanitary or Storm Sewer: When a water main over crosses or under crosses a sanitary / storm sewer then the vertical separation between the bottom of one (i.e., sanitary / storm sewer or water main) to the top of the other (water main or sanitary / storm sewer) shall be at least 18" for sanitary sewer and 12" for storm sewer; however, if this cannot be achieved then both the water main and the sanitary / storm sewer shall be constructed of Ductile Iron Pipe (DIP) AWWA C-151 (ANSI A21.51) Class 52 with joints that are equivalent to water main standards for a distance of 10 feet on each side of the point of crossing. A section of water main pipe shall be centered at the point of crossing and the pipes shall be pressure tested in place without leakage prior to installation. Sewers crossing over the water main shall have adequate structural support (concrete pier support and/or concrete encasement) to prevent damage to the water main. Sanitary sewers under creeks and storm sewer pipe crossings with less than 6" clearance shall be encased in concrete. (T&ES)

F-12 No water main pipe shall pass through or come in contact with any part of sanitary / storm sewer manhole. Manholes shall be placed at least 10 feet horizontally from the water main whenever possible. When local conditions prohibit this horizontal separation, the manhole shall be of watertight construction and tested in place. (T&ES)

F-13 Crossing Existing or Proposed Utilities: Underground telephone, cable T.V., gas, and electrical duct banks shall be crossed maintaining a minimum of 12" of separation or clearance with water main, sanitary, or storm sewers. If this separation cannot be achieved then the sewer pipe material shall be Ductile Iron Pipe (DIP) AWWA C-151 (ANSI A21.51) Class 52 for a distance of 10 feet on each side of the point of crossing and pressure tested in place without leakage prior to installation. Sanitary / storm sewers and water main crossing over the utilities shall have adequate structural support (pier support and/or concrete encasement) to prevent damage to the utilities. (T&ES)

F-14 Show the drainage divide areas on the grading plan or on a sheet showing reasonable information on topography along with the structures where each sub-area drains. (T&ES)

F-15 Provide proposed elevations (contours and spot shots) in sufficient details on grading plan to clearly show the drainage patterns. (T&ES)

F-16 All the existing and proposed public and private utilities and easements shall be shown on the plan and a descriptive narration of various utilities shall be provided. (T&ES)

F-17 The Traffic Control Plan shall replicate the existing vehicular and pedestrian routes as nearly as practical and the pedestrian pathway shall not be severed or moved for non-construction activities such as parking for vehicles or the storage of materials or equipment. Proposed traffic control plans shall provide continual, safe and accessible pedestrian pathways for the duration of the project. (T&ES)

F-18 **FINDING ADDED BY STAFF:** T&ES/OEQ reviewed the noise study conducted by Acoustical Design Collaborative, Ltd. that was dated January 8, 2018 and the report on the proposed loudspeaker system dated January 22, 2018 by the same company. (T&ES) (DSUP2017-0016)

F-19 **FINDING ADDED BY STAFF:** Overall, the noise study appeared to be conducted rigorously and the results showed deficiencies in the existing loudspeaker system. The proposed loudspeaker system appeared to be significantly better than the existing counterpart in terms of conforming to the City's noise code and providing less impacts to the neighboring residential properties. (T&ES) (DSUP2017-0016)

AlexRenew

F-1 AlexRenew has no comments on the major amendment DSUP2013-00014.

C-1 **COMMENT ADDED BY STAFF:** Ensure all discharges are in accordance with City of Alexandria Code Title 5, Chapter 6,
Article B. (DSUP2017-0016)

C-2 **COMMENT ADDED BY STAFF:** The Applicant shall coordinate with the City of Alexandria T&ES to ensure that planned flow capacity does not exceed City of Alexandria allotted AlexRenew plant capacity, nor exceed capacity in AlexRenew Holmes Run Trunk Sewer during wet and average flow conditions. (DSUP2017-0016)

C-3 **COMMENT ADDED BY STAFF:** Dewatering and other construction related discharge limits could be regulated by AlexRenew Pretreatment. Engineer/Owner is required to contact Alexandria Renew Enterprises (AlexRenew) Pre-Treatment Coordinator at (703) 549-3382. (DSUP2017-0016)

VAWC

F-1 The existing 8" main on drive way is private (special connection agreement #1541 provided to applicant for reference). If connected to this main, the proposed 1.5" domestic service line will be private too. Developer may install this service line (copper, Type L). VAW will only own and install a 36" meter box and 1.5" meter (& setting). Please send us "Application for Estimate" form before construction. Resubmission of plan to VAWC is not required.

Code Enforcement

C-1 A comprehensive geological study is required to determine site appropriateness for the proposed structure. Acknowledged by applicant. Study is underway. Plan should be submitted as part of preliminary site plan submittal. Report submitted to Code Enforcement Engineering. Report will be reviewed at time of submission of building plans. (DSUP2002-0044)

C-2 All independent automatic sprinkler systems shall be equipped with two independent fire department connections (FDC). Each FDC shall be located on an opposite side of the structure where appropriate and to the satisfaction of the fire department. Acknowledged by applicant. Plans do not show locations of fire department connections (FDC) for garage and high school. FDC locations shall be shown on plans. See C-2 above. Fire line for garage sprinkler system is not shown. Show fire line on plans. **Condition met, fire line shown on plans.** (DSUP2002-0044)

C-3 Fire flow data for the affected area will need to be provided at the time of plan submittal Acknowledged by applicant. The applicant should provide the required fire flow data as early as possible in order to identify and address any potential fire flow issues that may arise **Not submitted**. **A Fire Flow Analysis shall not consist solely of information provided by Virginia American Water Company. See attached specifications for what information is required for a Fire Flow Analysis.** (DSUP2002-0044)

C-4 Fire Hydrants shall be located at least 40 feet from all buildings serviced by the hydrant. Agreed by applicant. Site requires additional hydrants and relocation of several proposed hydrants. See attached plan. Revised hydrant distribution is acceptable. However, revised plan show extended median for bus loop which now obstructs hydrant accessibility. Applicant shall clarify how extended median and traffic pattern is to work. The new configuration may require an additional fire hydrant to provide proper coverage as a result of this change. **Relocate fire hyrant by bleachers as shown on attached plan. Hydrant should be located next to school building by corner entering bus loop. Revised bus loop plan is acceptable for fire apparatus access.** (DSUP2002-0044)

C-5 Hydrants shall be located within 100 feet of each FDC. FDCs are not shown on plan. FDCs shall be shown on plan for proper review. **Condition met.** (DSUP2002-0044)

C-6 Revised EVE plan provides 360 degree EVE access. Extend transition area at rear corner of school by shops to provide a more entrance and recovery into corner turn. **Revised rear turning easement by shop area is acceptable. The proposed gates along the rear E.V.E. shall be equipped with the following measures subject to approval by the Director of Code Enforcement:**

- **A siren activation system which will unlock and open the security gates upon initiation of a yelp signal from the fire apparatus siren.**
- **A key override system keyed to the Knox Box system for the City of Alexandria which will unlock and open the security gates upon insertion of a Know Box Key approved by the City of Alexandria.**
- **Gates shall open upon activation of the school's fire alarm system.** (DSUP2002-0044)

C-7 Construction phasing of this project shall incorporate the highest safety provisions for the safeguarding of the student and adult population of the existing facility during the construction of the new structure. Acknowledged by applicant. The preliminary phasing plan does not address emergency vehicle access to the sites. The applicant shall address fire access to both the proposed structure, existing structure and proposed trailers. Sufficient fire access shall be provided not only to access these areas but to turnaround and depart these areas. Fire access areas shall conform to H-20 vehicle rating standards. **Phasing plan submitted does not address H20 loading concerns. Plan should also show hydrant accessibility to meet 300 ft. maximum travel distance to effected structures and trailers. The proposed plans PH1-4 and C-19 are inconsistent with each other. Sheet C-19 showsthe use of the track as an E.V.E . PH-1 through 4 show differing routes used as a E.V.E. The plans shall complement each other in order to conduct a proper review. The proposed plan (C-19) requires an additional hydrant to be installed beyond the proposed hydrant to meet the proper hydrant coverage criteria. See attached drawings. The hydrant shall be installed near the south bleachers. Verify the track meets H-20 loading for fire apparatus. Ghosted drawings obstruct the proposed E.V.E. in the track. No trailers shall obstruct the track area. The proposed use of the shop hydrant as part of the hydrant coverage is not acceptable. The hydrant will be obstructed by fencing and is not readily accessible to fire apparatus. The applicant shall look at alternative means to meet the hydrant coverage issues in this area. The temporary E.V.E. at the rear of the existing school shall be extended as noted on plans PH-1 and PH-2.** (DSUP2002-0044)

C-8 Section B-B shows a pedestrian bridge from the parking structure to the main school building. This bridge is not shown on any other sheets in the submitted plans. Reflect all overhead structures in submitted drawings. Applicant states there will be no pedestrian bridge in this area. **Condition met.** (DSUP2002-0044)

C-9 A separate tap is required for the building fire service connection. Show fire tap on plans. Fire tap shown for high school. No fire tap shown for garage. Show tap for garage fire line. **Condition met. Fire tap shown on plans.** (DSUP2002-0044)

C-10 New construction must comply with the current edition of the Uniform Statewide Building Code (USBC). Show note on plans. Note not shown on plans. **Show note on site plan in addition to sheet LS1.01.** (DSUP2002-0044)

C-11 The developer shall provide a building code analysis with the following building code data on the plan: a) use group; b) number of stories; c) type of construction; d) floor area per floor ; e) fire protection plan. Provide analysis on plans. Analysis provided. **Condition met.** (DSUP2002-0044)

C-12 The developer shall provide a separate Fire Service Plan which illustrates: a) emergency ingress/egress routes to the site; b) two fire department connections (FDC) to the building, one on each side/end of the building; c) fire hydrants located within on hundred (100) feet of each FDC; d) on site fire hydrants spaced with a maximum distance of three hundred

(300) feet between hydrants and the most remote point of vehicular access on site; e) emergency vehicle easements (EVE) around the building with a twenty-two (22) foot minimum width; f) all Fire Service Plan elements are subject to the approval of the Director of Code Enforcement. Include fire service plans as part of complete plan set. Fire Service plan provided. **Condition met.** (DSUP2002-0044)

C-13 The final site plans shall show placement of fire easement signs. **Not Shown to date.** (DSUP2002-0044)

C-14 A Certificate of occupancy shall be obtained prior to any occupancy of the building or portion thereof, in accordance with USBC 118.0. (DSUP2002-0044)

C-15 A fire prevention code permit is required for the proposed operation. **Agreed by applicant.** (DSUP2002-0044)

C-16 This structure contains mixed use groups and is subject to the mixed use and occupancy requirements of USBC. **Agreed by applicant.** (DSUP2002-0044)

C-17 Required exits, parking, and accessibility within the building for persons with disabilities must comply with USBC Chapter 11. Handicapped accessible bathrooms shall also be provided. Show accessibility items on plan. Indicate if handicap parking in garage is for staff and visitors. If provided for staff only, additional handicap parking will be required. Handicap accessible restroom facilities will be required for temporary trailers. **Condition met. Handicap parking in garage serves both staff and visitors per applicant. Applicant acknowledges provision for handicap facilities for temporary trailers.** (DSUP2002-0044)

C-18 The public parking garage floor must comply with USBC and drain through oil separators or traps to avoid accumulation of explosive vapors in building drains or sewers as provided for in the plumbing code. Floors of public garages must be graded to drain through oil separators or traps to avoid accumulation of explosive vapors in building drains or sewers. **Agreed by applicant.** (DSUP2002-0044)

C-19 Prior to the issuance of a demolition permit or land disturbance permit, a rodent abatement plan shall be submitted to Code Enforcement that will outline the steps that will taken to prevent the spread of rodents from the construction site to the surrounding community and sewers. Show note on plans. Note not shown on plans. **Condition Met, Shown as note on sheets C-03 through C-05.** (DSUP2002-0044)

C-20 Roof drainage systems must be installed so as neither to impact upon, nor cause erosion/damage to adjacent property. **Agreed by applicant.** (DSUP2002-0044)

C-21 Sheeting and shoring shall not extend beyond the property line; except when the developer has obtained a written release from adjacent property owners which has been recorded in the land records; or through an approved encroachment process. **Agreed by applicant.** (DSUP2002-0044)

C-22 A soils report must be submitted with the building permit application. **Agreed by applicant.** (DSUP2002-0044)

C-23 The applicant shall provide a continuous Emergency Vehicle Easement (EVE) around the entire building, including the rear and sides. **This has been met.** (DSUP2002-0044)

C-24 Roadways and paved areas located next to the school structure shall be deemed emergency vehicle easements. **This has been met.** (DSUP2002-0044)

Fire Department

F-1 **FINDING ADDED BY STAFF:** The following comments are for preliminary review only. Additional comments may be forthcoming once the Applicant provides supplemental information for review. Please direct any questions to Maurice Jones at 703-746-4256 or maurice.jones@alexandriava.gov. **Previously acknowledged by applicant.** (DSUP2017-0016)

C-1 **COMMENT ADDED BY STAFF:** The Applicant shall provide two wet stamped copies of the fire flow analysis performed by a certified licensed fire protection engineer to assure adequate water supply for the structure being considered. The two copies shall be submitted to Alexandria Fire Department, Fire Prevention, C/O A. Maurice Jones, Jr. 900 Second Street, Alexandria, Va. 22314. **Applicant will provide at final site plan.** (DSUP2017-0016)

Police

F-1 No lighting plan submitted.

The following recommendation related to site lighting has not been included as a condition; rather, staff has recommended that the applicant prepare a lighting plan to the satisfaction of the Director of T&ES in consultation with the Chief of Police, which will likely result in lower lighting levels than recommended by the Police. (DSUP2002-0044)

R-3 The lighting for sidewalks, parking lots, and all common areas is to be a minimum of 2.0 foot candles minimum maintained. Lighting for the garage is to be a minimum of 2.0 foot candles minimum maintained. These lights are to be controlled by timers to go off at a time decided by school officials, depending on activities on any given night.

The following recommendation related to trees and shrubs has been included as conditions, but modified to allow for evergreen trees not to be limbed, and for shrubs used for screening, for example, adjacent to neighboring homes, to be taller than 36 inches. (DSUP2002-0044)

R-7 Shrubbery is to have a maximum of 36 inches when it matures. Trees planted on the site in most cases are to be limbed up a minimum of six feet as they mature. This will allow for the optimum level of natural surveillance. (DSUP2002-0044)

Recreation, Parks and Cultural Activities

F-1 The outdoor play area for the day care facility should be reviewed, including the 95 grade spot at the entrance stairs. (DSUP2002-0044)

Archaeology

F-1 **FINDING ADDED BY STAFF:** According to historic maps and documentary information, the proposed project area was once part of an African-American community known as Macedonia that developed in the immediate vicinity of the project area after the Civil War. With Oakland Baptist Church located on the adjacent property to the northwest, and Donaldson's Store across the street from the church, the project area is situated within the hub of a once thriving community. A 1927 aerial map depicts at least four main dwellings and a host of outbuildings on the project area, two fronting on King Street and two others set off from the street. Therefore, the project area may contain archaeological evidence of the development of post-Civil War Alexandria, particularly pertaining to African-American history. (DSUP2017-0016)

F-2 **FINDING ADDED BY STAFF:** The original T.C. Williams School was built in the 1960s. The main building once stood where parking garage is now located, and a parking lot covered much of the proposed project area. When the new school was built a few years ago the project area was transformed into a playing field. Given its uses as a parking lot and playing field, the project area may retain a high level of archaeological integrity. (DSUP2017-0016)

F-3 **FINDING ADDED BY STAFF:** Although the proposed project area is located in what was once a significant African-American neighborhood in the late nineteenth and early twentieth century, the proposed plan for a stadium renovation will involve little to no grading since it as we understand the plans for the stadium renovation, there will be negligible ground disturbance for this project and the current elevations will be largely retained. If so, there will be minimal impact to the underlying soils, and thereby no adverse effect to any potential archaeological remains that may exist underneath. (DSUP2017-0016)

F-4 **FINDING ADDED BY STAFF:** If this project is a federal undertaking or involves the use of any federal funding, the applicant shall comply with federal preservation laws, in particular Section 106 of the National Historic Preservation Act of 1966. The applicant will coordinate with the Virginia Department of Historic Resources and the federal agency involved in the project, as well as with Alexandria Archaeology. (DSUP2017-0016)

C-1 **COMMENT ADDED BY STAFF:** All required archaeological preservation measures shall be completed in compliance with Section 11-411 of the Zoning Ordinance. (DSUP2017-0016)

Asterisks denote the following:

* Condition must be fulfilled prior to release of the Final Site Plan
** Condition must be fulfilled prior to release of the building permit
*** Condition must be fulfilled prior to release of the certificate of occupancy
**** Condition must be fulfilled prior to release of the bond

Acoustical Design Collaborative Ltd

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MEMORANDUM

DATE:	08 January 2018
TO:	Casey Smith, AIA, LEED AP Hord Coplan Macht
COPY:	File
PAGES:	Six (6) + enclosures
FROM:	Philip Lipscomb
SUBJECT:	Alexandria City Public Schools – Parker-Gray Stadium Acoustic and Sound System Report
REVISION:	0

On 15 December 2017 Acoustical Design Collaborative, Ltd examined the site conditions and performed acoustic measurements in Parker-Gray Stadium at T.C. Williams High School in Alexandria, Virginia.

This memorandum summarizes the results of the site inspection and acoustic measurements and compares the results to the City of Alexandria Noise Ordinance. The results of the site inspection and acoustic measurements will be used to develop recommendations for a new sound system.

Description of Problems

Alexandria City Public Schools is concerned that a new sound system with the Press Box on the 'Visitor' side of the athletic field will subject adjacent residential properties to increased sound levels during athletic events.

Site Observations

Parker-Gray Stadium is located at the southwest corner of the T.C. Williams High School property. The athletic field's long dimension is oriented southeast-northwest, with the southmost edge of the running track approximately 22 feet from the south property line and the westmost edge of the running track approximately 47 feet from the west property line. The south and west property lines are shared with approximately twelve (12) residential properties. Bleacher seating for the athletic field includes one (1) large 'Home' seating area on the northeast side of the field and one (1) smaller 'Visitor' seating area on the southwest side of the field. The existing Press Box is located atop the 'Home' bleachers on the northeast side of the field and measures 12'-9" deep by 18'-3" wide.

The existing loudspeaker system consists of three (3) Community Professional 'R2' large format horn loudspeakers mounted to the roof of the Press Box, one (1) located at each end of the Press Box and one (1) located in the center of the Press Box. As the Press Box is not nearly as wide as the bleacher seating, the loudspeakers mounted on the ends are installed aimed outward to attempt to provide sound coverage to the outside ends of the 'Home' bleachers. See Image 1. Loudspeakers serving the 'Visitor' bleacher seats are annunciation horns and were not functional during the site inspection. See Image 2.

Image 1: Existing Press Box and loudspeakers at 'Home' bleachers. Note poor aiming of the loudspeakers

Image 2: Existing 'Visitor' seating and associated loudspeakers (loudspeakers not functional)

Existing sound system equipment is installed in an equipment rack in the existing Press Box. The existing sound system components are of good quality and from reputable manufacturers, but are a bit old. The Community 'R2' loudspeakers are good quality, but they are available in a variety of coverage patterns and the specific coverage patterns are unknown. The installation of the existing Community 'R2' loudspeakers above the Press Box is not ideal regardless of coverage pattern. The loudspeakers are located too low and too close together, requiring aiming up and out towards the property lines for better coverage.

Acoustic Measurements and Results

A Norsonic NOR-118 sound analyzer with a Norsonic Type 1206 preamplifier and Type 1225 free-field microphone were used to collect the acoustic data. The sound analyzer and microphone were calibrated with a Norsonic Type 1251 acoustic calibrator prior to and after performing the acoustical measurements. For all measurements, the microphone was positioned 4 ft above the ground. The outdoor temperature was approximately 31 degrees Fahrenheit with a relative humidity of about 50 percent. Weather conditions were overcast with a light wind speed of approximately 5-6 miles per hour.

Acoustic measurements included octave band sound levels and speech intelligibility (STI). Pink noise was injected directly into the sound system to measure sound levels from the loudspeaker system. One (1) reference sound level measurement was performed in the center of the 'Home' bleachers seating area with the sound system gain setting (volume) adjusted to a 'typical' level for athletic events. This was used as the 'Source' sound level. While the pink noise was still being emitted from the loudspeaker system, and without adjusting the sound system gain, sound level measurements were repeated at ten (10) positions along the property line. One (1) sound level measurement was performed without the sound system operating to establish an ambient noise level reference. See the enclosed, marked-up site plan indicating measurement positions. Finally, a special STI signal was injected directly into the sound system at the same gain setting and radiated by the 'Home' loudspeakers. The speech intelligibility was measured at twelve (12) locations in the 'Home' bleachers.

Sound Levels

Figure 1 shows the sound levels of the loudspeaker system measured at property line locations compared to the 'Source' measurement in the 'Home' bleachers (red line at top) and the City of Alexandria Noise Ordinance maximum sound level exposure for residential properties (black line). The ambient noise level measured in the 'Home' bleachers with the loudspeaker system off is the blue line at the bottom.

Measurements indicate that the existing loudspeaker system exceeds the residential noise ordinance from approximately 500 Hz to 4,000 Hz for nearly all positions with exception of positions 9 and 10. Note that all sound levels were measured without functioning loudspeakers at the 'Visitor' side of the field.

Conditions affecting the measurement results are indicated for measurement positions 8, 9, and 10. Two (2) measurements were taken at position 8, one (1) in front of the trees along the property line and one (1) behind the trees. The results indicate that while the trees affect the measured frequency response, there is little effect on the overall sound level. The single-number A-weighted sound levels measured at position 8 in front of the trees and behind the trees were 57.2 dB(A) and 55.7 dB(A), respectively, indicating that the trees provided less than 2 dB of attenuation. Positions 9 and 10 are located behind the scoreboard and the existing concessions building, respectively. These noted obstacles interfere with the loudspeaker system radiation path and explain the lower sound levels measured at mid-frequency octave bands at these positions.

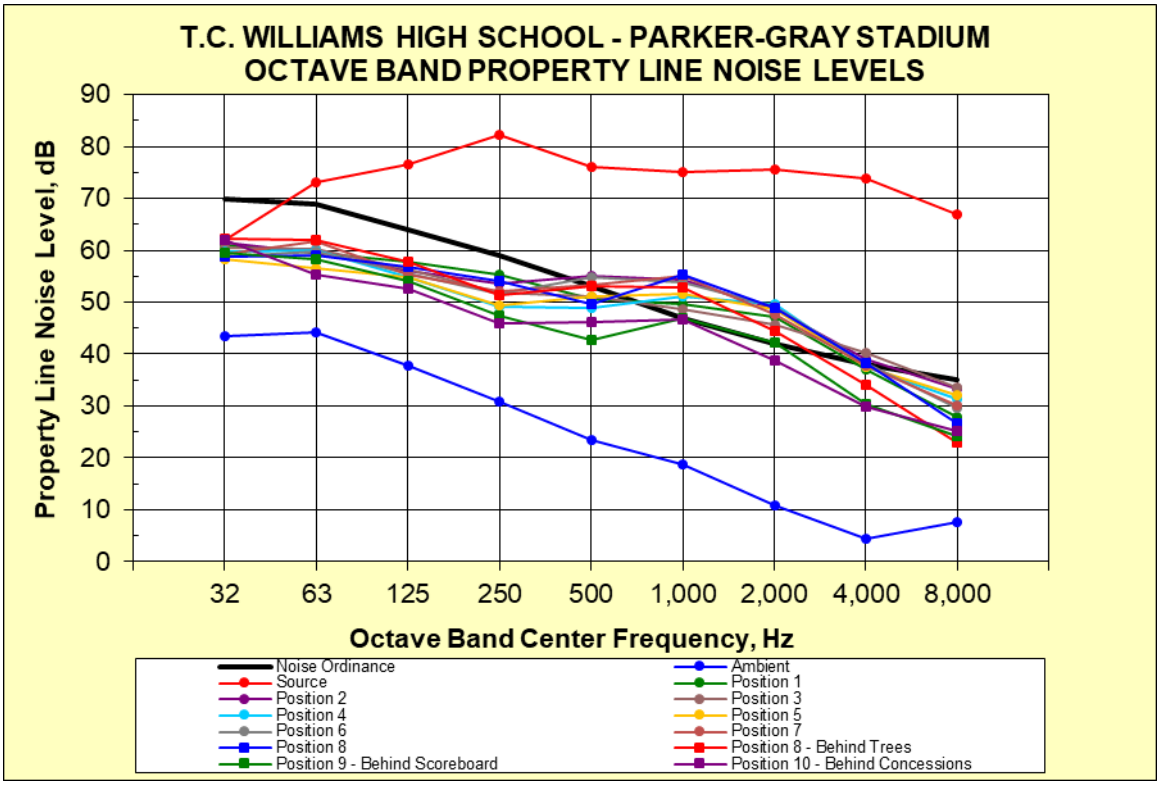

Figure 1. Octave Band Property Line Sound Levels

Speech Intelligibility

Figure 2 shows the measured speech intelligibility of the existing loudspeaker system in terms of the STI metric, mapped to the bleacher seating areas. While the average speech intelligibility is 0.60 STI, corresponding to a subjectively 'good' rating, Figure 2 shows that speech intelligibility is inconsistent throughout the bleacher seating sections. The speech intelligibility in the center seating sections is rated as subjectively 'excellent' while seating sections on the sides of the Press Box are subjectively 'fair' and 'poor' based on the STI scoring.

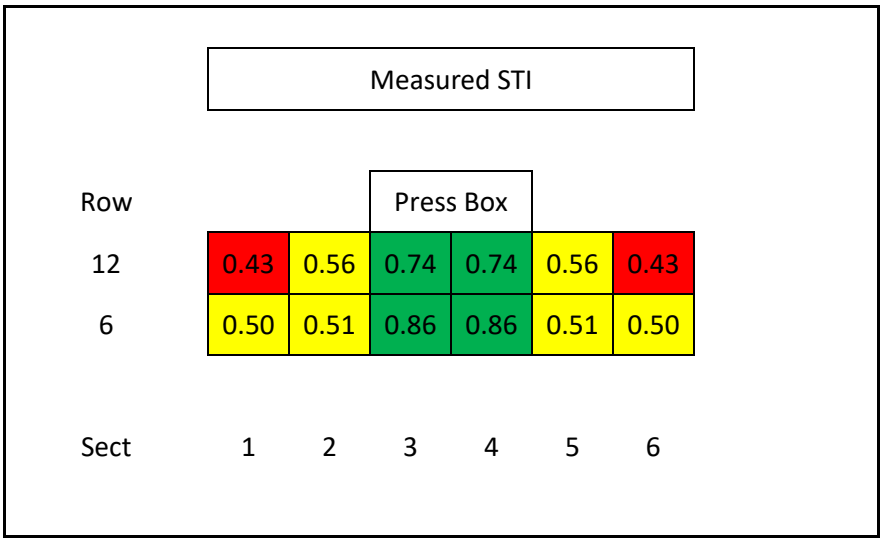

Figure 2. 'Home' Bleachers Loudspeaker System Speech Intelligibility – Individual Values

Speech intelligibility in the 'Home' bleachers is inconsistent because all loudspeakers for the bleachers are installed to the Press Box roof. This location may be adequate for the center seating sections, but the Press Box roof is too low and too far away from the side seating sections to serve them well. Despite aiming the left/right loudspeakers at the side seating sections, the majority of seats in the side seating sections are too far and too far off-axis to receive direct sound from their respective loudspeakers.

Note that while the speech intelligibility provided by the 'Home' side center loudspeaker for the center seating sections is more than adequate, the low elevation of the loudspeaker and subsequent aiming directs too much sound across the field toward adjacent residential properties.

Loudspeaker System Concepts

Locating loudspeakers serving the 'Home' bleachers at higher elevations and located distributed evenly across the front or back of the bleachers is expected to improve speech intelligibility in the seating areas and lower sound levels at the property lines. This is because the new locations would permit the loudspeakers to be aimed down at their respective seating sections as opposed to the existing system, which has the loudspeakers aimed out across the field toward the adjacent residential properties. Ideally, the loudspeakers would be located in front of the bleachers so that aiming them at the bleachers would also aim them away from the adjacent residential properties. Regardless of the location (front or back of bleachers) the loudspeakers will require dedicated mounting poles to accommodate their installation.

Loudspeakers for the 'Visitor' bleachers will need to be carefully located at the rear of the existing bleachers and aimed down and away from the adjacent residential properties. Based on our acoustic measurements and the location of the new Press Box, calculations suggest an increase in sound levels of 10 dB if the existing loudspeakers were to be relocated to the 'Visitor' side. A 10 dB increase in sound levels will subjectively sound twice as loud as the existing sound system. As low frequency propagation from loudspeakers is typically omnidirectional and mostly dependent on level, loudspeakers on the 'Visitor' side may have to be processed to reduce low frequency output. Loudspeakers with cardioid low frequency coverage patterns may also be suitable for reducing sound levels at the property lines. As with the 'Home' loudspeaker system, the 'Visitor' loudspeaker system will require dedicated poles for mounting the loudspeakers. As noted in earlier discussions, we can try to integrate a centrally-located loudspeaker into/onto the new Press Box assuming the elevation is appropriate for good sound system coverage. This may require poles mounted to the Press Box Roof.

Conclusion

The above represents our acoustic measurements and analysis of the Parker-Gray Stadium existing loudspeaker system property line sound levels. Included are initial concepts to improve the sound system and comply with the City of Alexandria Noise Ordinance.

Please contact me at 410.821.5930 or pal@akustx.com if you have any questions.

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MEMORANDUM

DATE:	22 January 2018
TO:	Casey Smith, AIA, LEED AP Hord Coplan Macht
COPY:	File
PAGES:	Twenty-seven (27) + enclosures
FROM:	Philip Lipscomb
SUBJECT:	Alexandria City Public Schools – Parker-Gray Stadium Proposed Loudspeaker System Report
REVISION:	0

Acoustical Design Collaborative, Ltd has completed an acoustic analysis of existing and proposed loudspeaker systems for the Parker-Gray Stadium at T.C. Williams High School in Alexandria, Virginia.

This memorandum summarizes the results of our analysis and provides recommendations for a new loudspeaker system designed to meet the City of Alexandria Noise Ordinance.

Description of the Acoustic Analysis

Our report issued 08 January 2018 describes the acoustic performance of the existing loudspeaker system measured at the site compared to the Alexandria City Noise Ordinance. A computer model of the existing loudspeaker system was built as a reference with which to compare calculated results to measured results. New loudspeaker system concepts were then implemented in the computer model to determine optimum loudspeaker models, locations, and aiming angles to provide similar sound levels in the 'Home' and 'Visitor' bleachers as the existing loudspeaker system, but with improved coverage and speech intelligibility in the bleachers and lower sound levels at the property line.

The principle objective was for calculated property line sound levels to meet the City of Alexandria Noise Ordinance. Secondary to meeting the City Noise Ordinance was the goal of providing optimum sound coverage in both bleachers at the same sound level as the existing loudspeaker system currently provides in the Home bleachers.

As the City of Alexandria Noise Ordinance is critical to our analysis, we contacted the City of Alexandria's Office of Environmental Quality to verify our understanding of the City of Alexandria Noise Control Code. On

January 18th, 2018, we spoke with Lisa Goldberg from the City of Alexandria Office of Environmental Quality. Lisa confirmed that between the hours of 7am and 11pm octave band sound levels from the loudspeakers cannot exceed those listed in Table 1 at neighboring residential property lines. Outside of these hours the maximum permissible sound levels from the loudspeaker system cannot be "plainly audible at a distance of 50 feet from the source" according to Noise Code Sec. 11-5-4 (b)2. We interpret this to mean the loudspeaker system at Parker-Gray Stadium cannot be used between the hours of 11pm and 7am daily.

Table 1. City of Alexandria Noise Code (Table III): Maximum Permissible Sound Levels - Residential

Maximum dB(A)	Octave Band Center Frequency (Hz)	Octave Band Sound Pressure Level (dB)
55	31.5	70
	63	69
	125	64
	250	59
	500	53
	1,000	47
	2,000	42
	4,000	38
	8,000	35

Note that the computer modeling software we are using for our analysis cannot calculate frequencies below 100 Hz, so 31.5 Hz and 63 Hz are not reflected in this report. Our analysis is not concerned about these very low frequencies for two reasons. One, the loudspeakers associated with this analysis do not provide significant output at these frequencies as compared to higher frequencies, and, two, the lower frequencies can be attenuated with little affect on the quality of the sound system if they exceed the Noise Ordinance after installation.

Calculation Results – Existing Loudspeaker System

The existing loudspeaker system sound levels calculated at the property lines using the computer model were consistently higher than sound levels measured at the project site, particularly at higher frequencies. Table 2 lists the A-weighted sound levels, measured and calculated, for the existing loudspeaker system. Figures A1 through A11 in Appendix A compare the measured and calculated octave band sound levels for the existing loudspeaker system at the Home bleachers and all measurement locations.

Table 2. Existing Loudspeaker System Sound Levels, Measured vs. Calculated

Location	Measured (SPL, dBA)	Calculated (SPL, dBA)	Difference (SPL, dBA)
Home Bleachers (Source)	82.10	82.14	0.04
Position 1	54.60	61.10	6.50
Position 2	57.70	60.83	3.13
Position 3	53.50	58.93	5.43
Position 4	55.00	58.43	3.43
Position 5	55.20	59.29	4.09
Position 6	57.40	59.93	2.53
Position 7	57.40	60.41	3.01
Position 8	57.20	60.54	3.34
Position 9	49.80	60.22	10.42
Position 10	49.50	59.50	10.00

There are several reasons why the computer model of the existing loudspeaker system returns consistently higher sound levels at the property lines. One reason is that the exact coverage patterns of the existing loudspeakers are not known and affect the directivity of sound propagation from the Home bleachers at mid-to-high frequencies. Another factor is air absorption, which can affect sound levels at mid-to-high frequencies at large distances.

Modeling the existing loudspeaker system and comparing the results with the measured values helps to identify error in the computer model and calculated results. Modeling the existing loudspeaker system and comparing the calculated results with the measured sound levels indicates that sound levels calculated for the proposed loudspeaker system may be higher than actual sound levels measured at the site after the proposed sound system is installed.

Description of Proposed Loudspeaker System

Several different loudspeaker concepts were examined and modeled, described below for the Home and Visitor bleacher areas.

Home Bleachers

Home loudspeakers were initially modeled at the rear of the bleachers, elevated on poles at various heights, and aimed down from above to improve acoustic performance without obstructing the view of the field. Multiple iterations of this concept with two, three, four, and five loudspeakers were analyzed. Unfortunately, while the acoustic performance was consistently better than the existing loudspeaker system, software calculations for the best of these iterations indicated that the property line sound levels would have been at the Noise Ordinance limits without considering the contribution of sound levels from the Visitor loudspeaker system. This is because locating the loudspeakers behind the Home bleachers means that the loudspeakers must be aimed toward the residential property lines. As elevation is increased in an attempt to aim the loudspeakers down more, the sound level of the loudspeakers must increase to provide adequate seating sound levels. The increased output of the elevated loudspeakers increased property line sound levels at mid and low frequencies regardless of loudspeaker model or coverage pattern. For these reasons, locating Home side loudspeakers behind the bleachers is not recommended.

The proposed loudspeaker system for the Home bleachers consists of four (4) Community WX-1500 series loudspeakers mounted on poles at the front of the bleachers. Two of the loudspeaker poles are located at the front corners of the bleachers, with the other two poles spaced 56 feet on center along the front edge of the bleacher platform. The loudspeakers are elevated 28 feet above the field elevation and aimed 30 degrees down. The ‘outside’ loudspeakers at the corners are 90° horizontal by 60° vertical Community model WX-1596. The two ‘inside’ loudspeakers are 120° horizontal by 60° vertical Community model WX-1526. See attached cut sheets for more information on the recommended loudspeakers.

If loudspeaker poles are not possible on the field side of the Home bleachers, another option may be to cantilever loudspeakers over the bleachers from poles at the back of bleachers. The cantilever concept can be explored further should the loudspeaker concept in this report be rejected, and will require further computer modeling.

Visitor Bleachers

The Visitor bleachers are very close to adjacent residential properties. As such, all loudspeaker system concepts for the Visitor bleachers consisted of loudspeakers mounted behind the bleachers and aimed away from the property lines. As with the Home side analysis, many different iterations of loudspeaker model, loudspeaker coverage pattern, and mounting elevation were explored. Loudspeakers mounted higher and aimed down at the seating area provided much more even sound coverage to the bleachers, but also produced higher property line sound levels relative to the sound levels in the seating area. Locating the loudspeakers lower and closer to the seating provided higher sound levels at the seating relative to property line noise levels, but at the expense of even sound coverage in the seating area. Due to the proximity of the loudspeakers to the property line, even slight variations in loudspeaker coverage pattern and aiming affected the calculated property line noise levels.

The proposed loudspeaker system for the Visitor bleachers consists of four (4) Community WX-1500 series

loudspeakers mounted at Press Box Rooftop Deck elevation distributed across the back of the bleachers/front of the Press Box. The center two loudspeakers can be mounted directly to the outside corners of the Press Box. The other two loudspeakers will require poles approximately 25 feet high (over Press Box T.O. Pier elevation) and approximately 25 feet to either side of the Press Box. The loudspeakers are aimed 30 degrees down. All Visitor side loudspeakers are 60° horizontal by 40° vertical Community model WX-1564. See attached cut sheets for more information on the recommended loudspeakers.

Note that the Visitor side loudspeaker system with the proposed loudspeaker concept requires the loudspeakers to be attenuated by 7 dB relative to the Home loudspeakers. The Visitor loudspeakers also require specific equalization between 400 Hz and 2500 Hz to maximize sound levels in the seating without exceeding the Noise Ordinance. These adjustments will be part of the system commissioning process.

Calculation Results – Proposed Loudspeaker System

Figure 1 shows the calculated octave band property line sound levels of the proposed loudspeaker system with all Home and Visitor loudspeakers functioning, and with the Visitor loudspeakers attenuated and equalized as described above. Sound levels are shown in the Home and Visitor bleachers at the top of the graph in blue and red, respectively and at the neighboring property lines. The computer model calculations indicate that the proposed loudspeaker system will provide the same sound level as the existing Home loudspeaker system in the Home bleachers, but more consistently across the entire seating area. The existing sound system at Parker-Gray Stadium does not currently have functioning loudspeakers for the Visitor bleachers. The proposed loudspeaker system will provide coverage in the Visitor bleachers, albeit slightly lower in level than the Home side. The proposed loudspeaker system also meets the Noise Ordinance at all measurement positions.

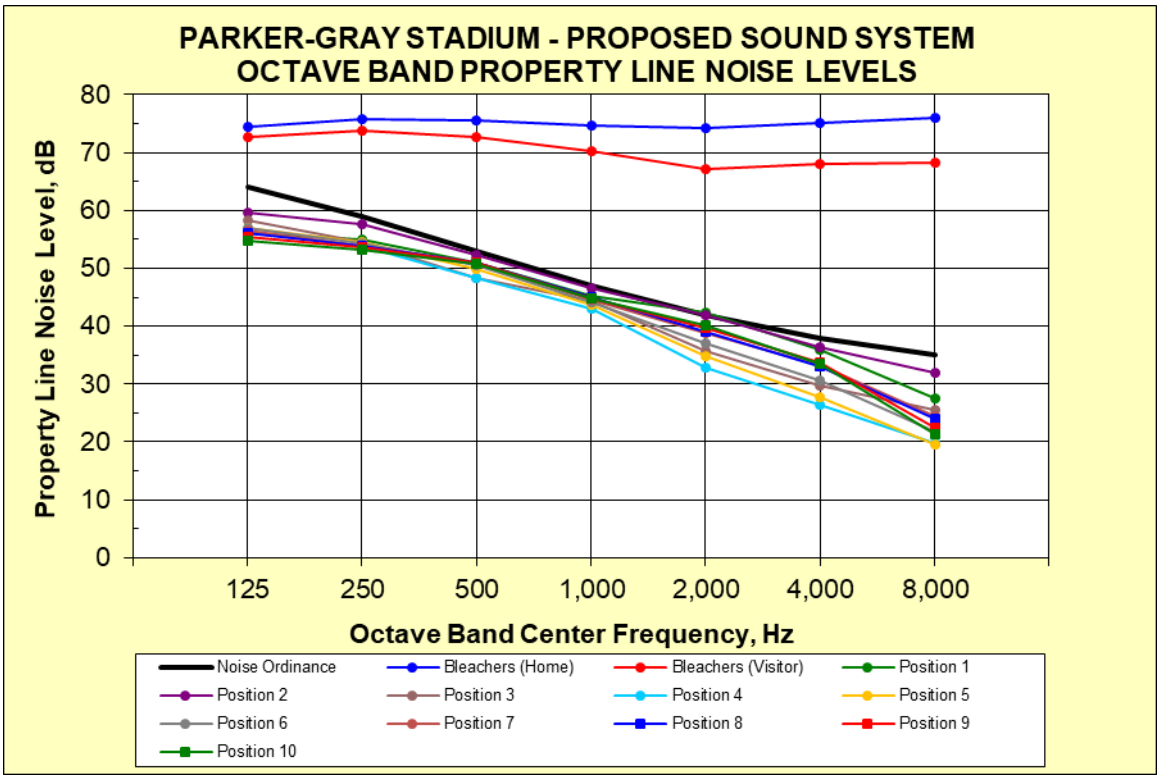


Figure 1. Octave Band Property Line Sound Levels for the proposed loudspeaker system

Table 3 below compares the measured sound levels of the existing loudspeaker system to the calculated

sound levels of the proposed loudspeaker system in the Home and Visitor bleachers, and at all property line measurement positions. Figures B1-B12 in Appendix B compare the octave band sound levels of existing and proposed loudspeaker systems at each location. Note that calculated sound levels do not exceed the Noise Ordinance at any octave band at any measurement position. Considering that the calculated sound levels of the existing loudspeaker system were higher than the measured sound levels, it is possible the actual, measured sound levels of the proposed loudspeaker system could be lower than indicated in this report.

Table 3. Property Line Sound Levels, Existing vs. Proposed

Location	Measured (SPL, dBA)	Calculated (SPL, dBA)
Home Bleachers (Source)	82.10	82.11
Visitor Bleachers (Source)	NA	76.93
Position 1	54.60	52.34
Position 2	57.70	54.03
Position 3	53.50	50.93
Position 4	55.00	49.88
Position 5	55.20	50.87
Position 6	57.40	51.36
Position 7	57.40	51.59
Position 8	57.20	51.6
Position 9	49.80	51.57
Position 10	49.50	51.46

Appendix C provides information on the computer model of the proposed loudspeaker system. Sound coverage plots from this model are provided for the overall athletic field site, the Home bleachers, and the Visitor bleachers. The site plot shows sound from the loudspeaker systems for Home and Visitor bleachers propagating toward the property lines. The plots of sound coverage at Home and Visitor bleacher seating areas indicate more consistent sound levels for all spectators.

Speech Intelligibility – Existing vs. Proposed

Figure 2 shows the measured speech intelligibility of the existing loudspeaker system in terms of the STI metric, mapped to the bleacher seating areas. While the average speech intelligibility is 0.60 STI, corresponding to a subjectively ‘good’ rating, Figure 2 shows that speech intelligibility is inconsistent throughout the bleacher seating sections. The speech intelligibility in the center seating sections is rated as subjectively ‘excellent’ while seating sections on the sides of the Press Box are subjectively ‘fair’ and ‘poor’ based on the STI scoring.

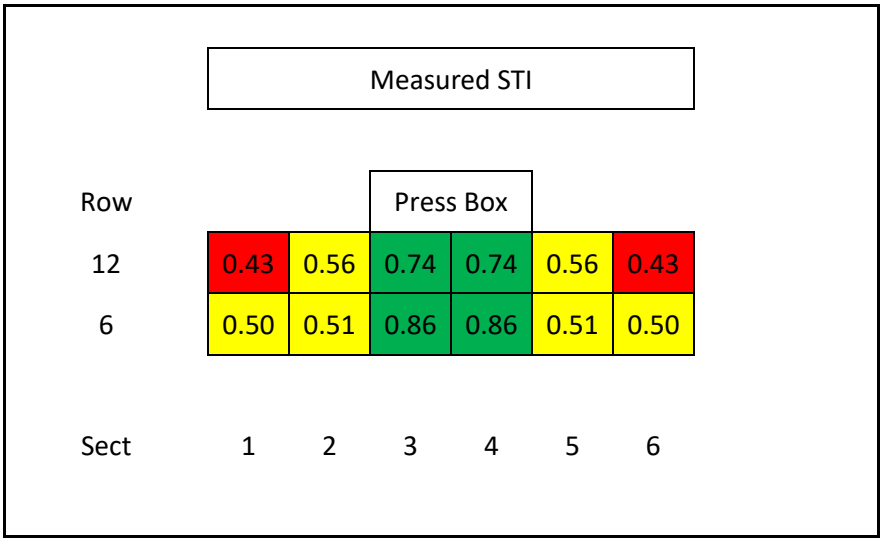


Figure 2. Existing Loudspeaker System Speech Intelligibility – 'Home' Bleachers

The calculated average speech intelligibility in the Home and Visitor bleachers with the proposed loudspeaker system is approximately 0.90 STI. Unlike the existing loudspeaker system, which varied by +/- 0.22 STI in the Home bleachers, the calculated STI values for the proposed loudspeaker system vary by +/- 0.07 STI in the Home bleachers and +/- 0.09 STI in the Visitor bleachers. The calculated results indicate consistently 'excellent' speech intelligibility.

Conclusion

The above represents our acoustic analysis of the Parker-Gray Stadium existing and proposed loudspeaker system property line sound levels. Included are recommendations to improve the sound system and comply with the City of Alexandria Noise Ordinance.

Please contact me at 410.821.5930 or pal@akustx.com if you have any questions.

Appendix A
Existing Loudspeaker System Sound Levels – Measured vs. Calculated

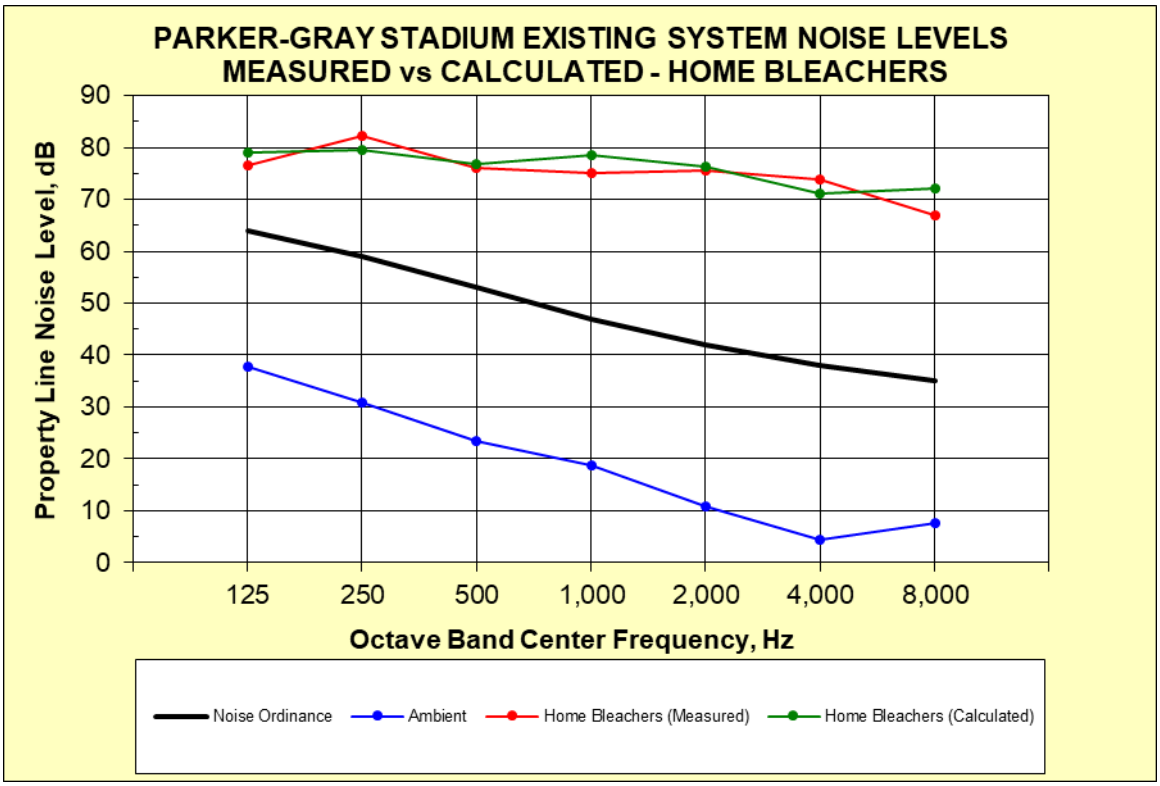


Figure A1. Measured vs. calculated sound levels of the existing loudspeaker system – Home Bleachers

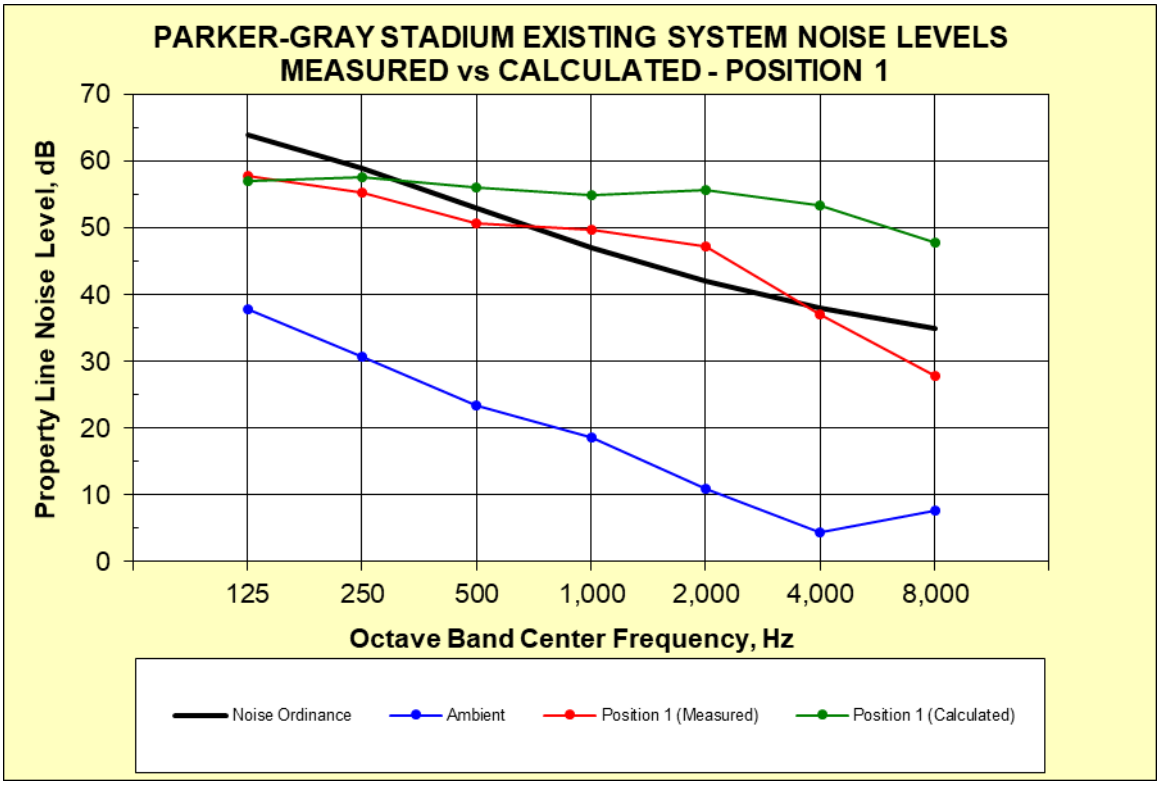


Figure A2. Measured vs. calculated sound levels of the existing loudspeaker system – Position 1

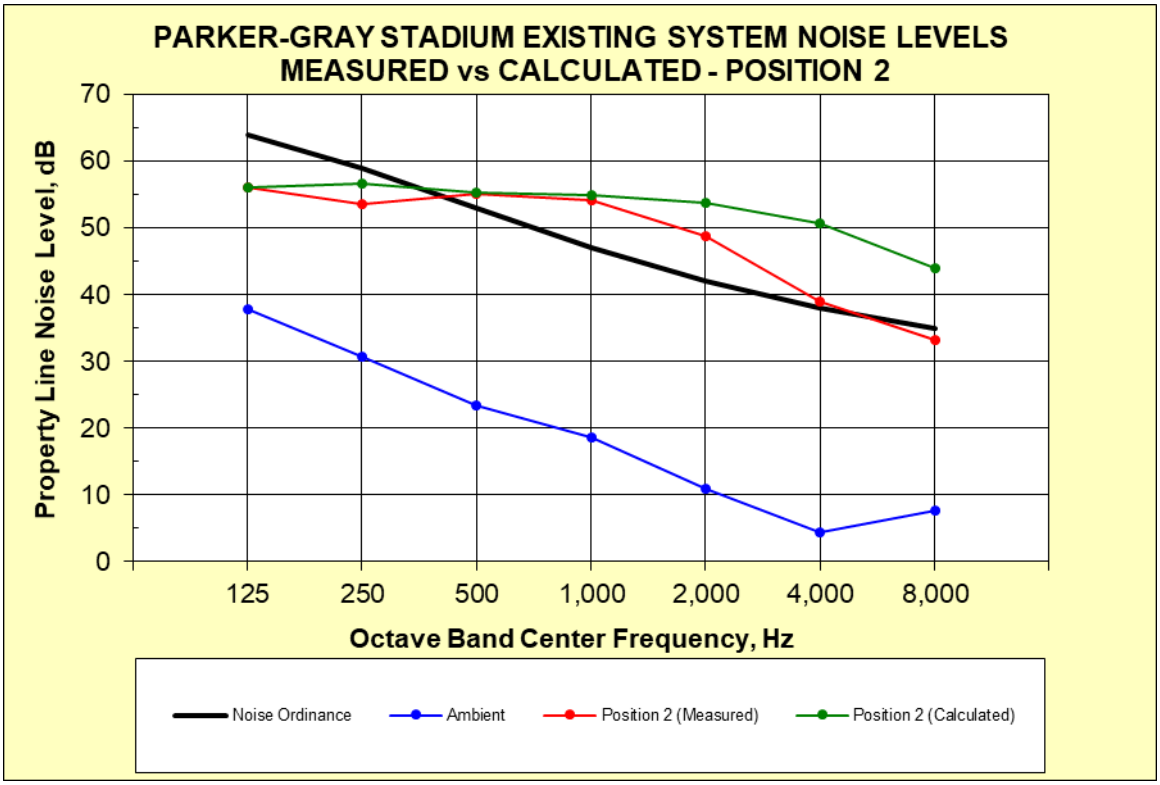


Figure A3. Measured vs. calculated sound levels of the existing loudspeaker system – Position 2

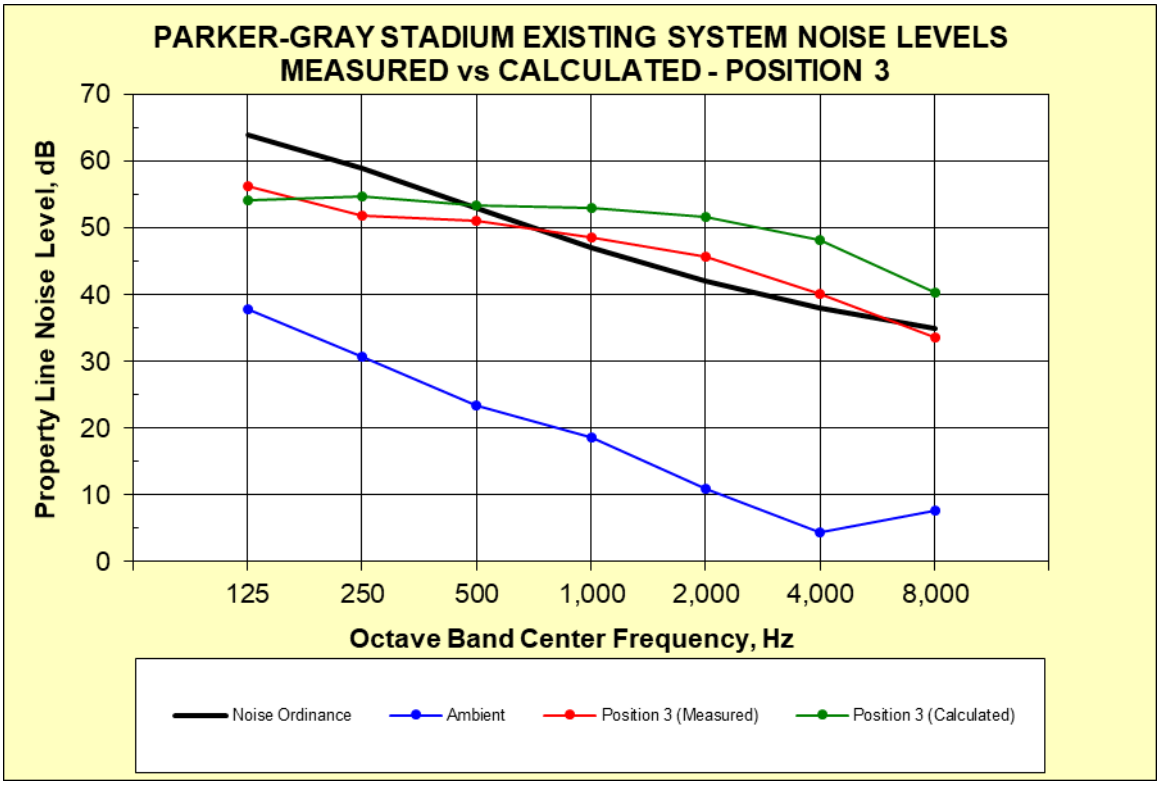


Figure A4. Measured vs. calculated sound levels of the existing loudspeaker system – Position 3

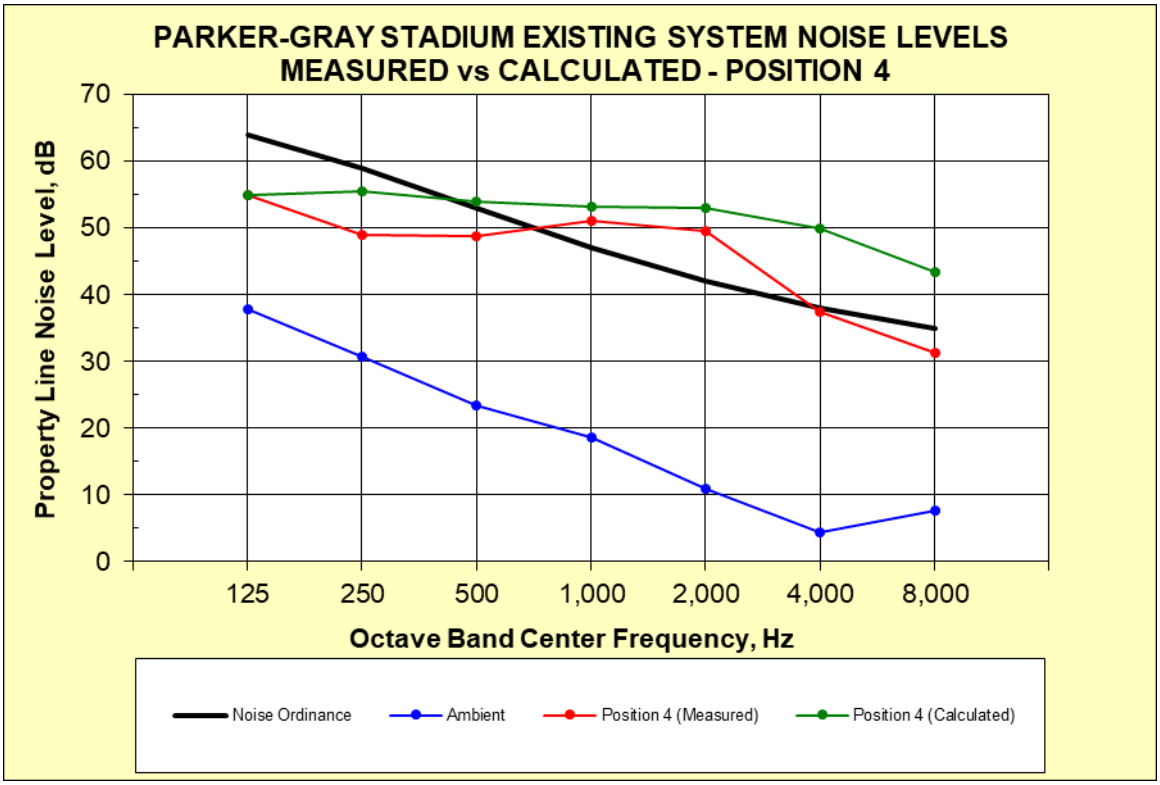


Figure A5. Measured vs. calculated sound levels of the existing loudspeaker system – Position 4

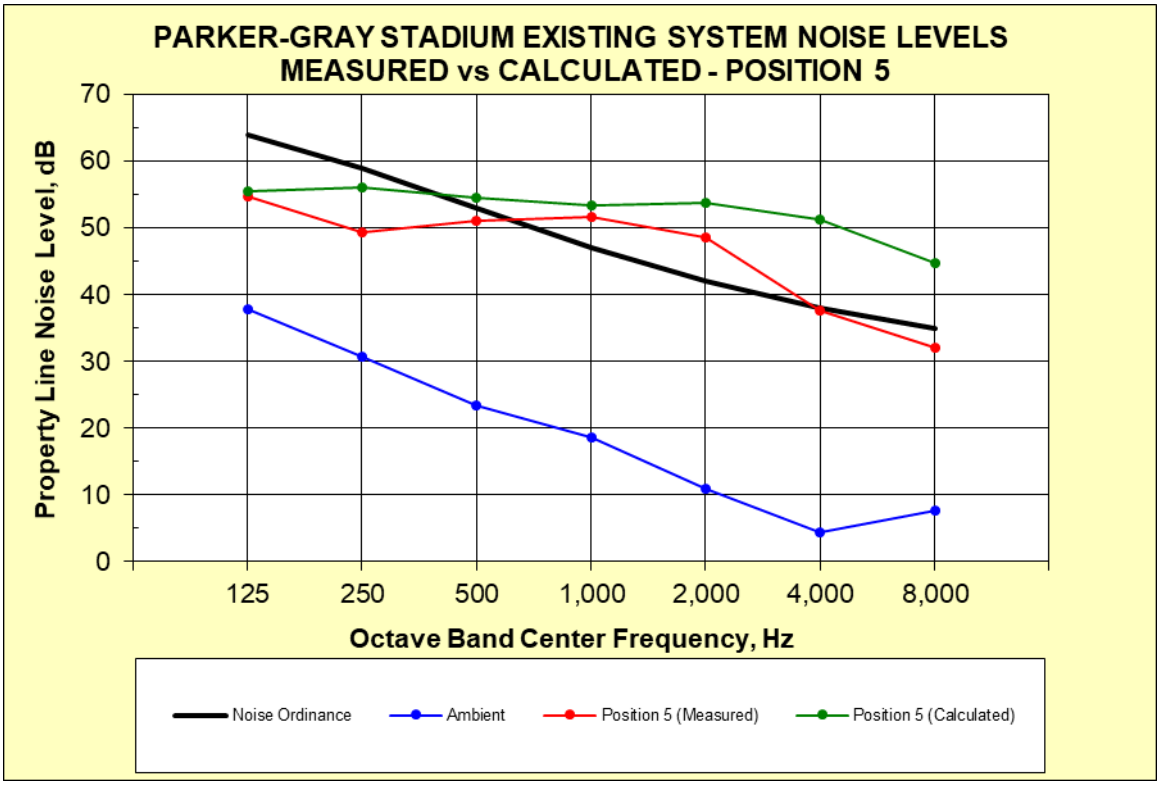


Figure A6. Measured vs. calculated sound levels of the existing loudspeaker system – Position 5

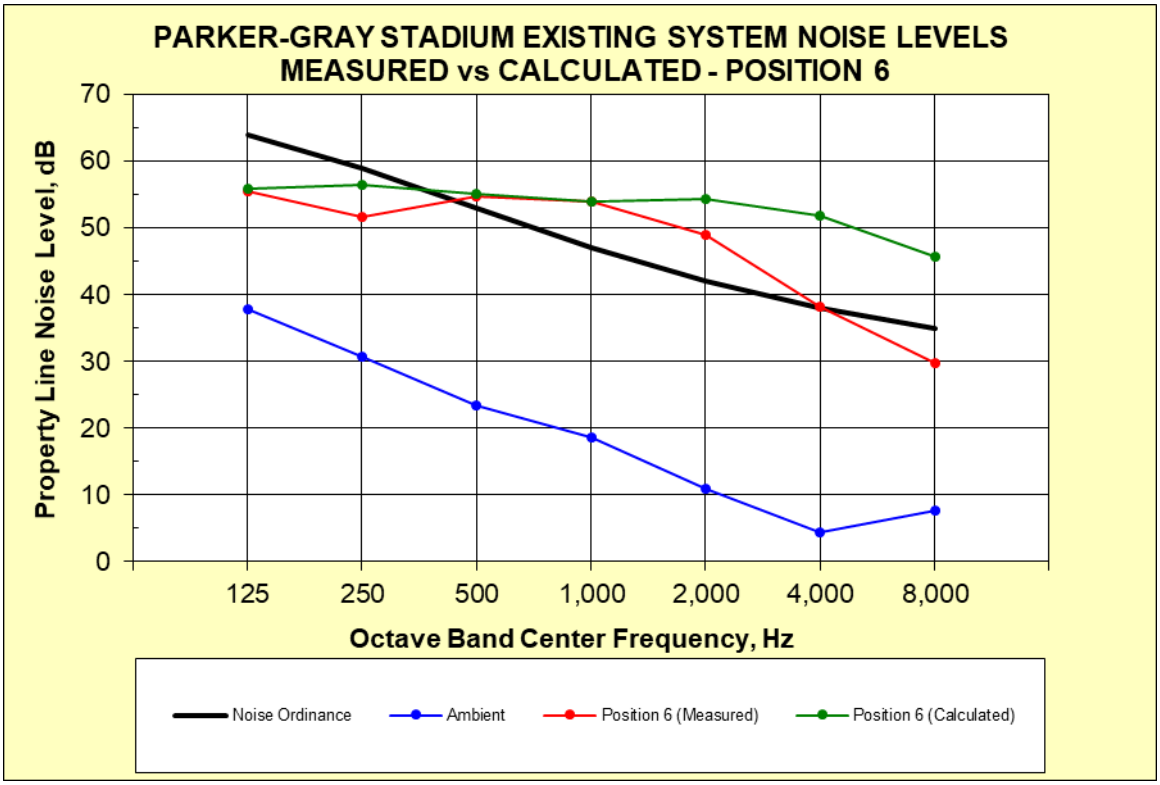


Figure A7. Measured vs. calculated sound levels of the existing loudspeaker system – Position 6

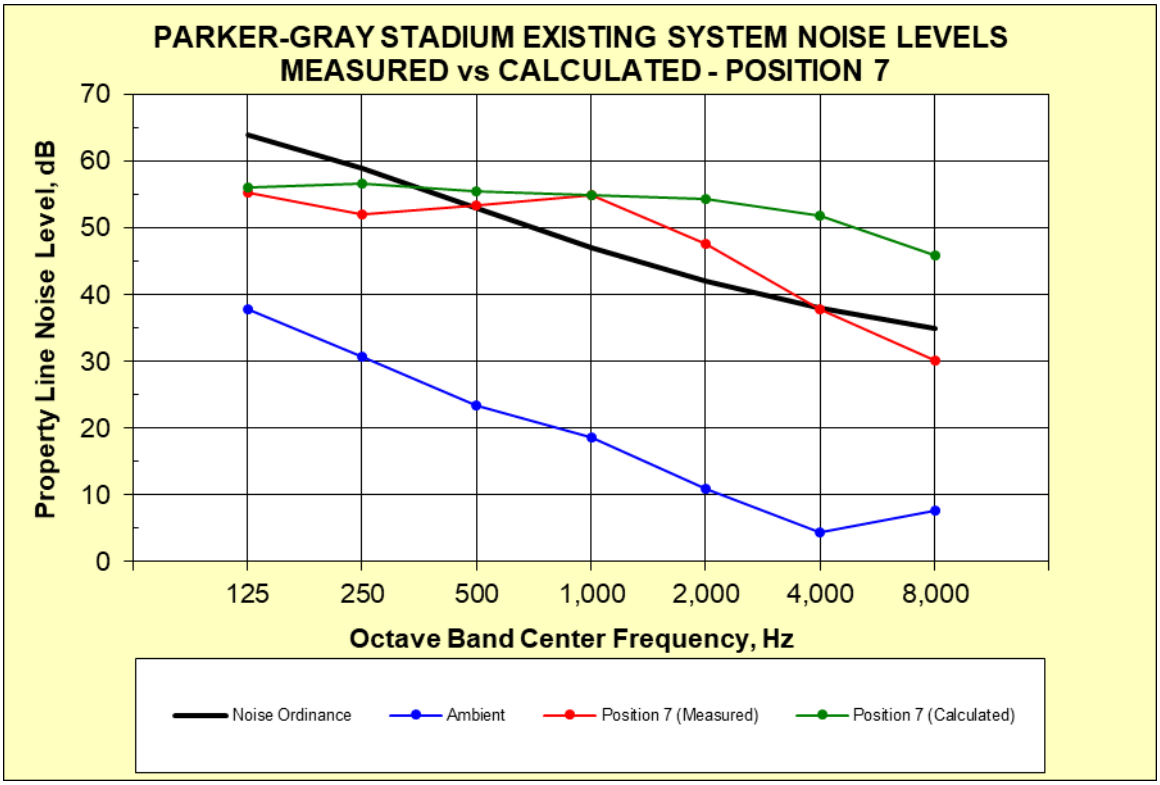


Figure A8. Measured vs. calculated sound levels of the existing loudspeaker system – Position 7

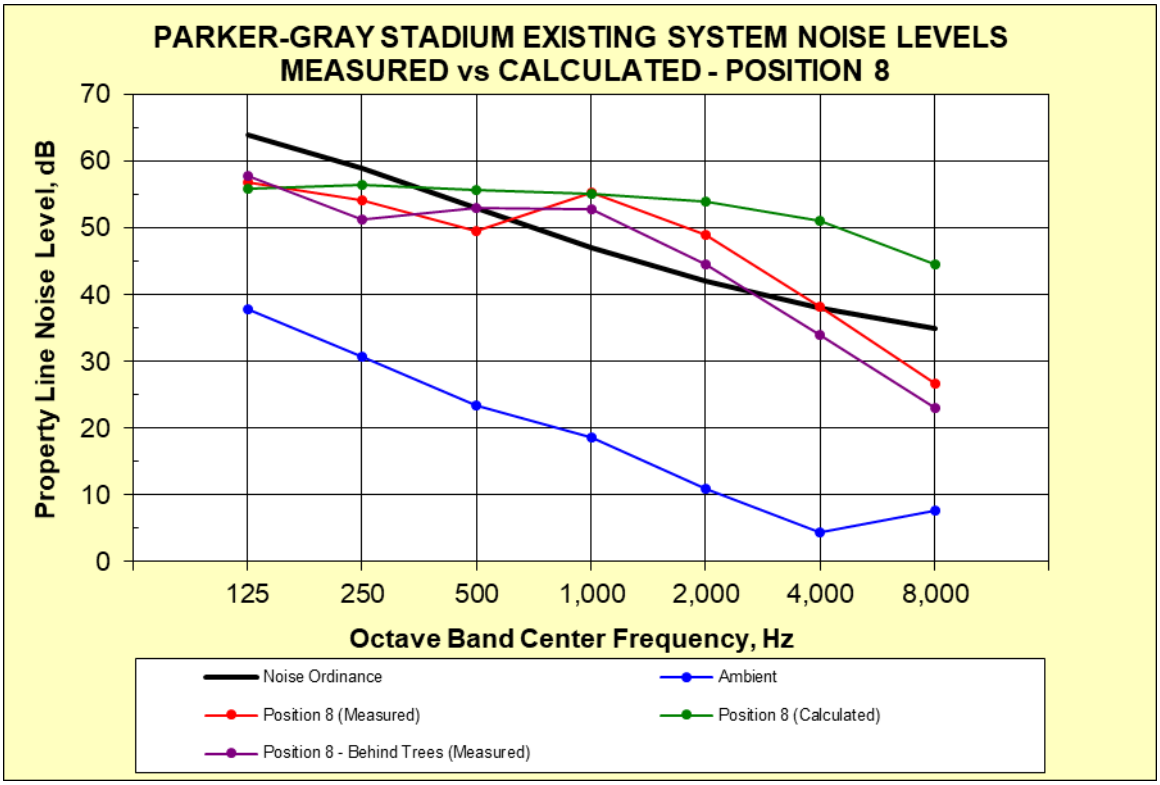


Figure A9. Measured vs. calculated sound levels of the existing loudspeaker system – Position 8

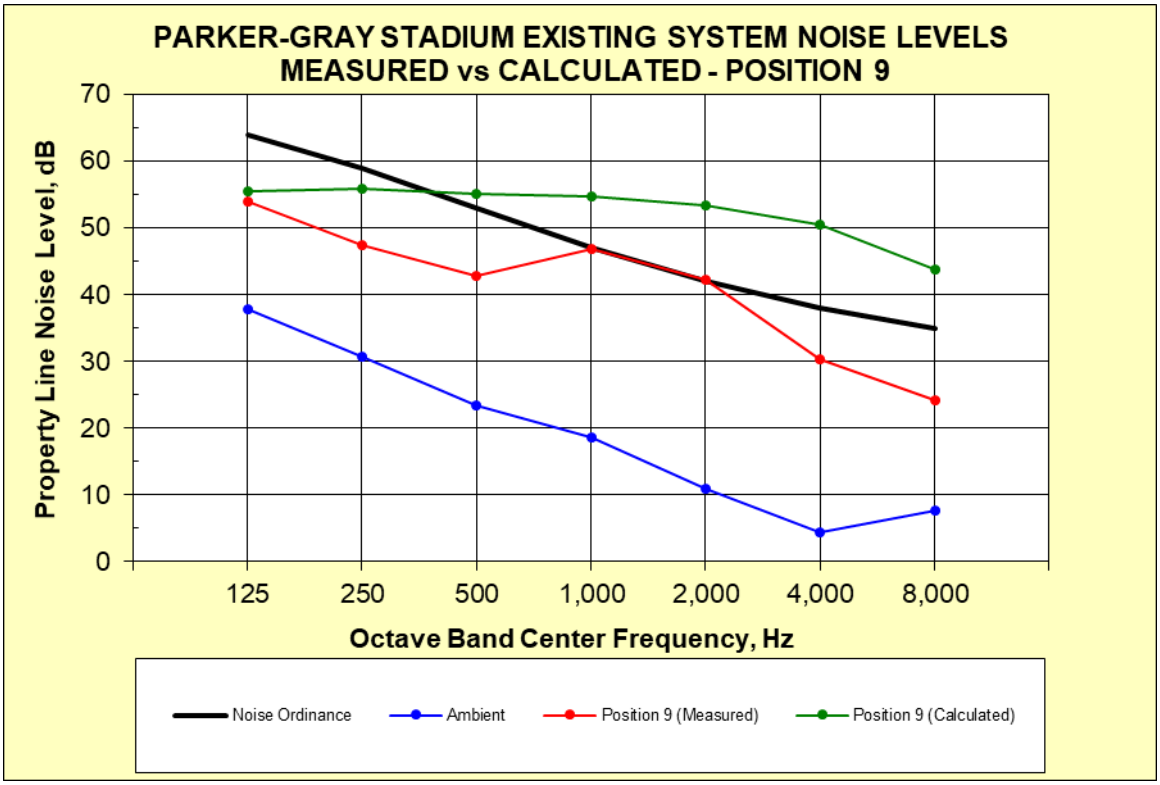


Figure A10. Measured vs. calculated sound levels of the existing loudspeaker system – Position 9

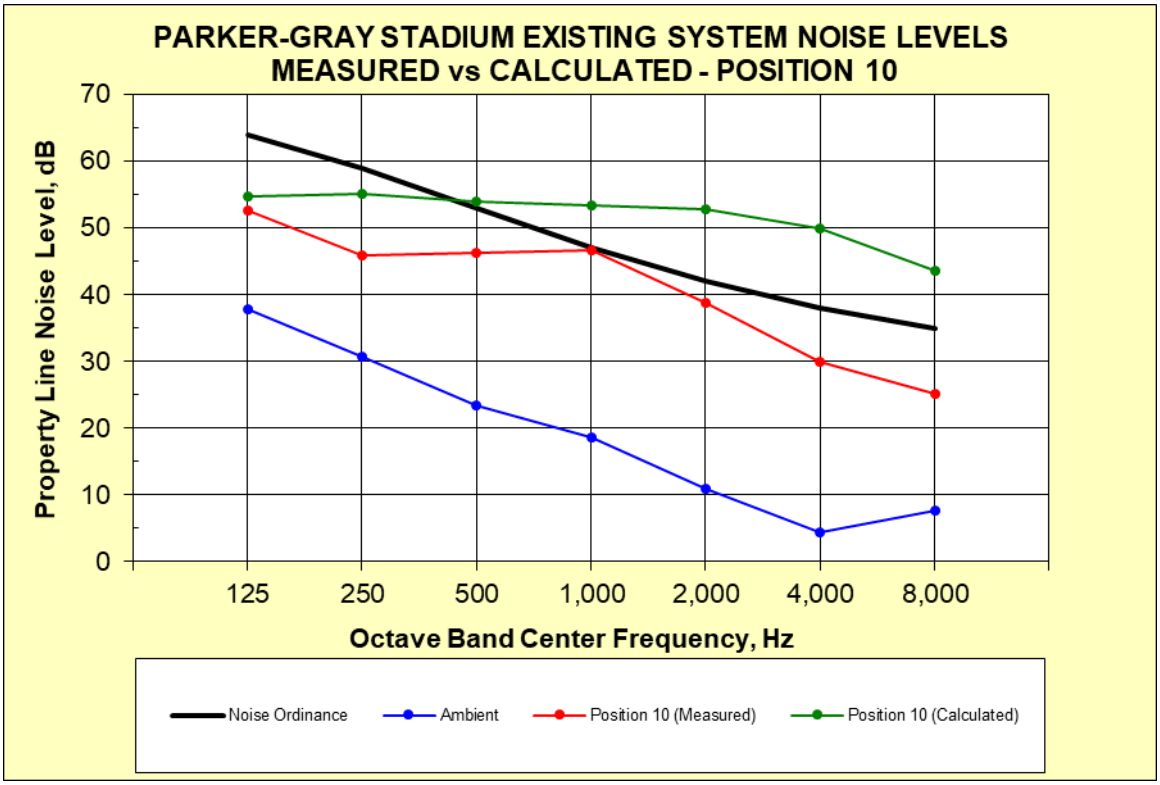


Figure A11. Measured vs. calculated sound levels of the existing loudspeaker system – Position 10

Appendix B
Loudspeaker System Sound Levels – Existing vs. Proposed

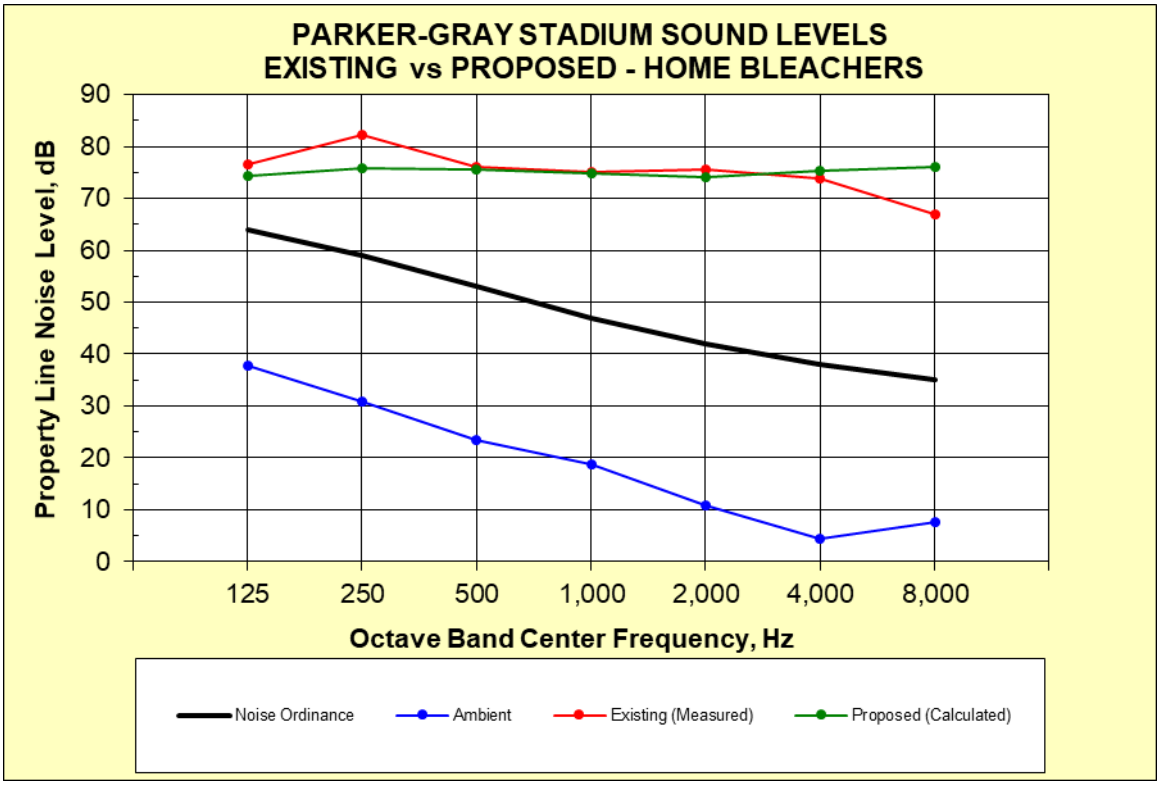


Figure B1. Existing (measured) vs. proposed (calculated) loudspeaker system sound levels – Home Bleachers

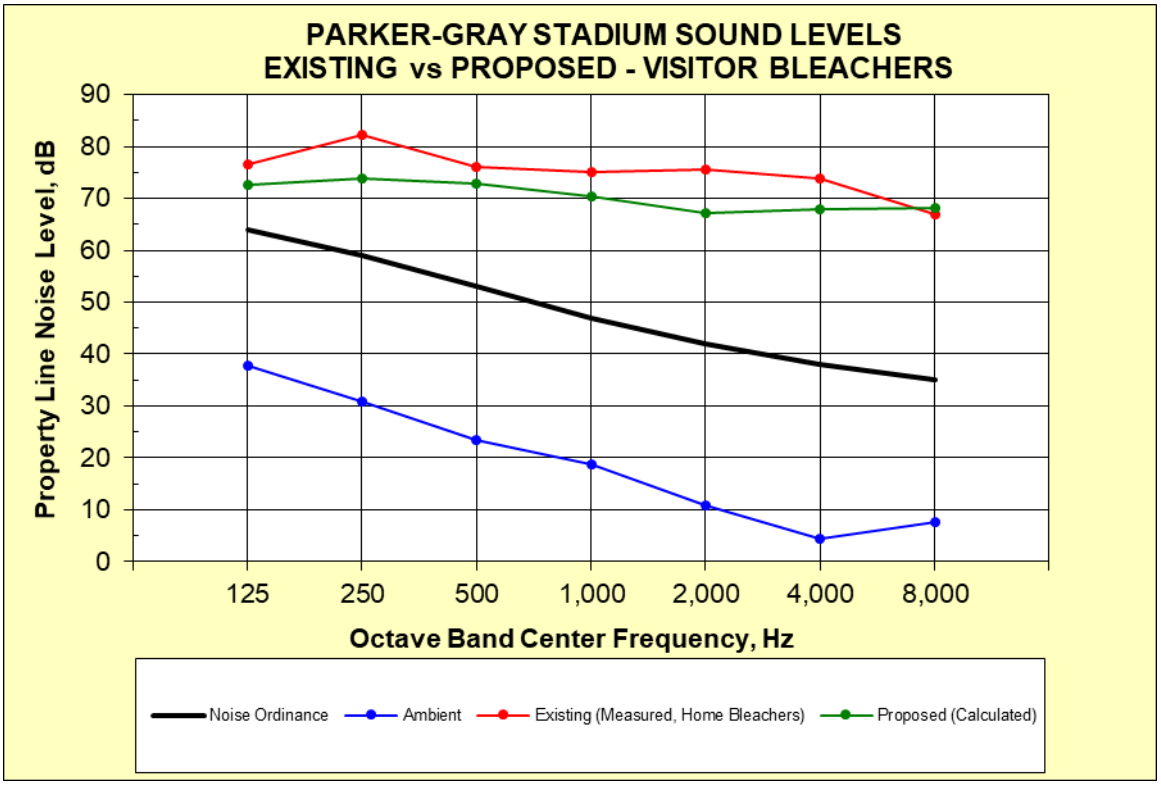


Figure B2. Existing (measured) vs. proposed (calculated) loudspeaker system sound levels – Visitor Bleachers

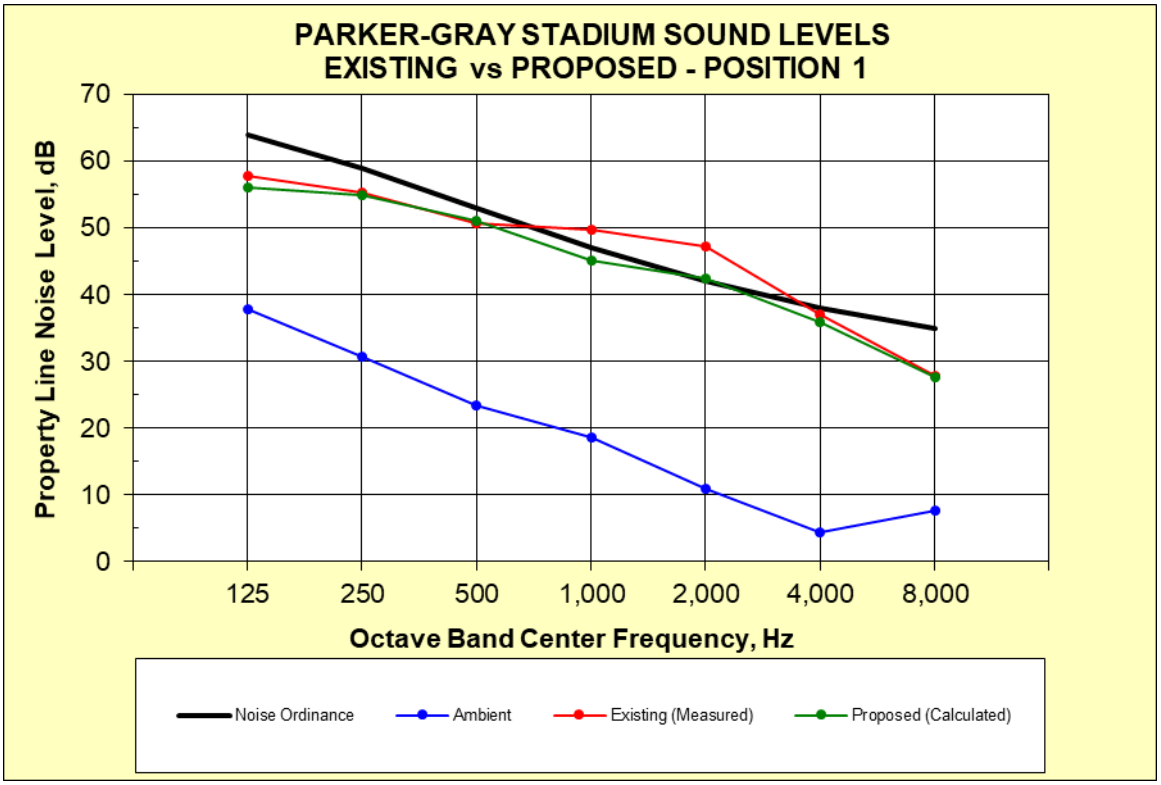


Figure B3. Existing (measured) vs. proposed (calculated) loudspeaker system sound levels – Position 1

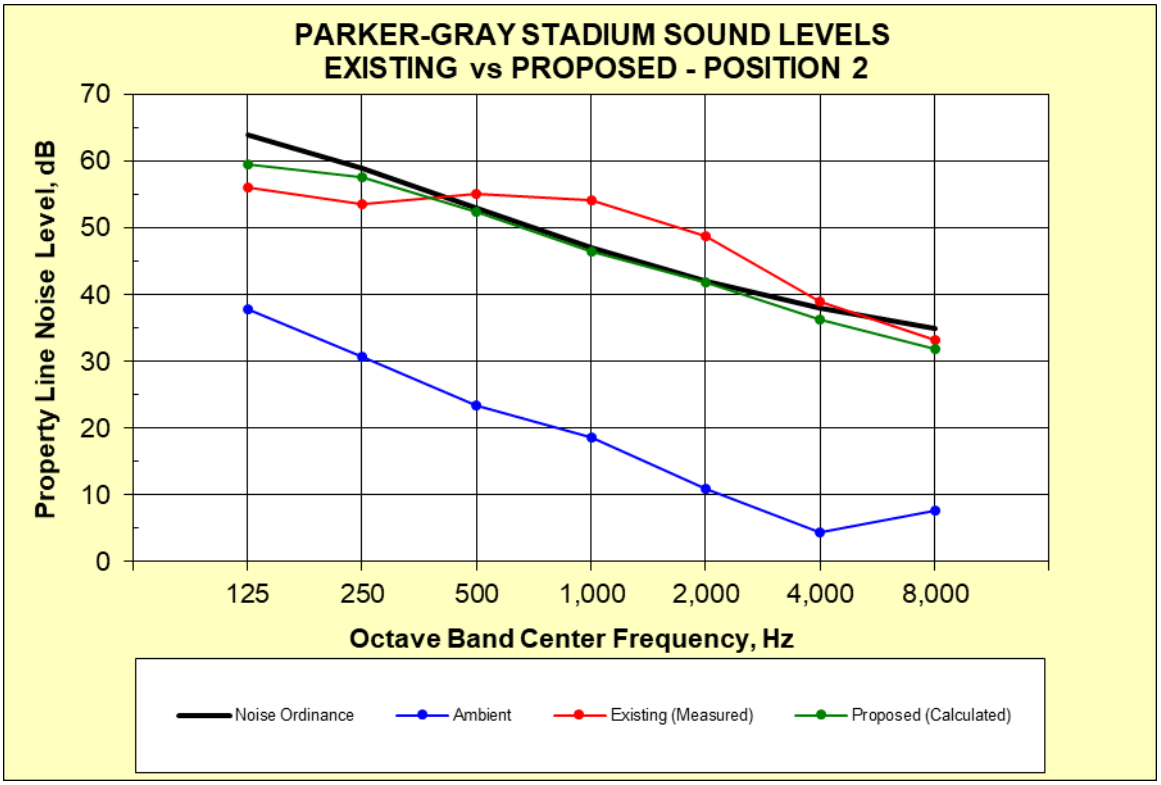


Figure B4. Existing (measured) vs. proposed (calculated) loudspeaker system sound levels – Position 2

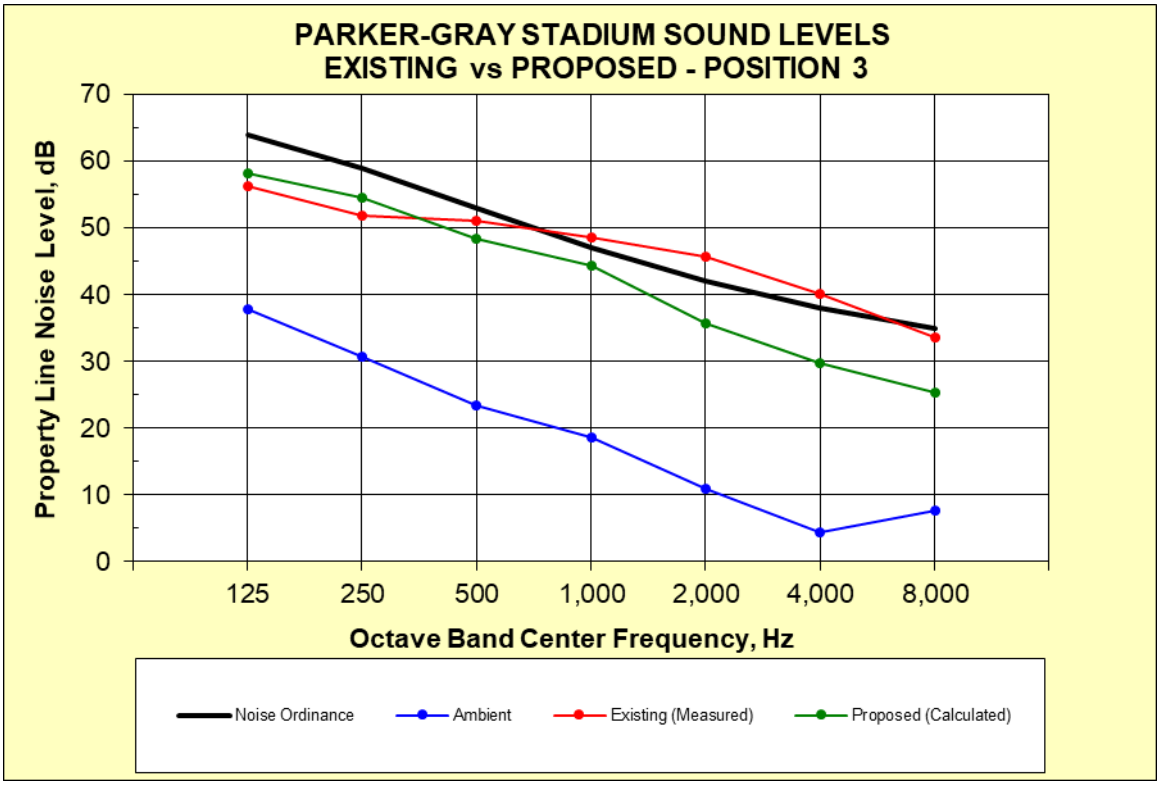


Figure B5. Existing (measured) vs. proposed (calculated) loudspeaker system sound levels – Position 3

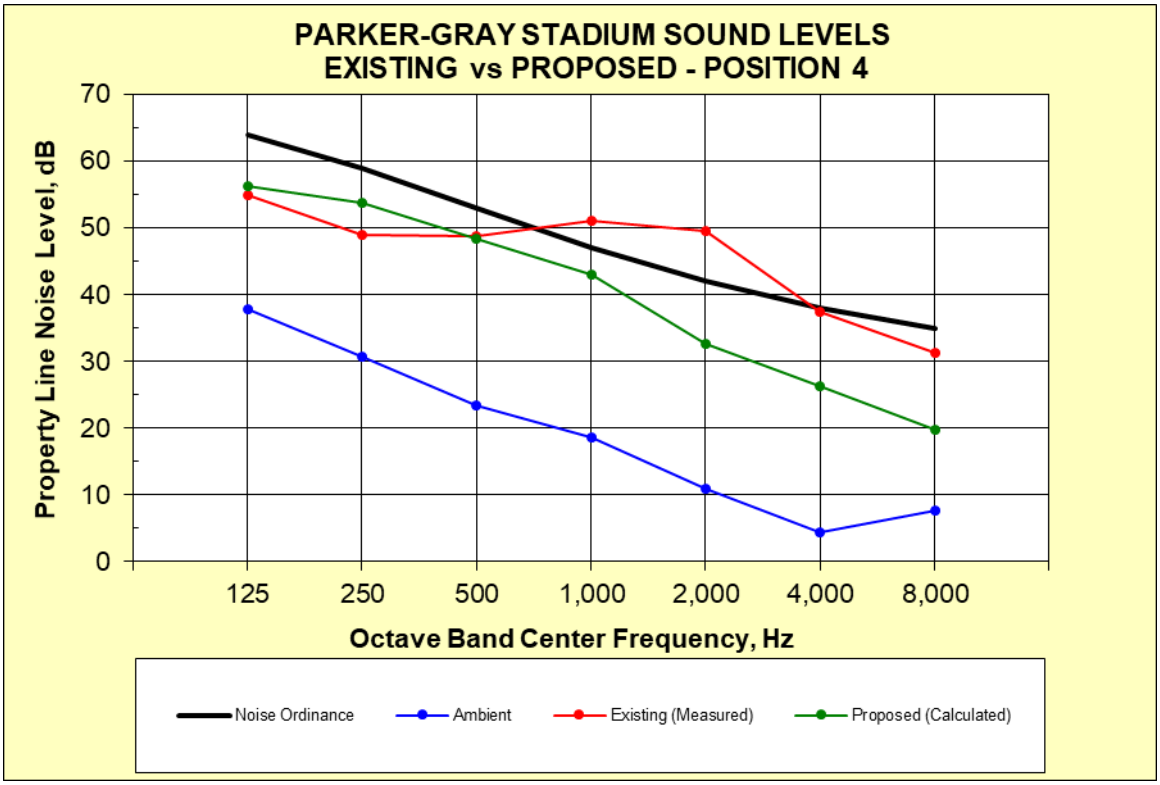


Figure B6. Existing (measured) vs. proposed (calculated) loudspeaker system sound levels – Position 4

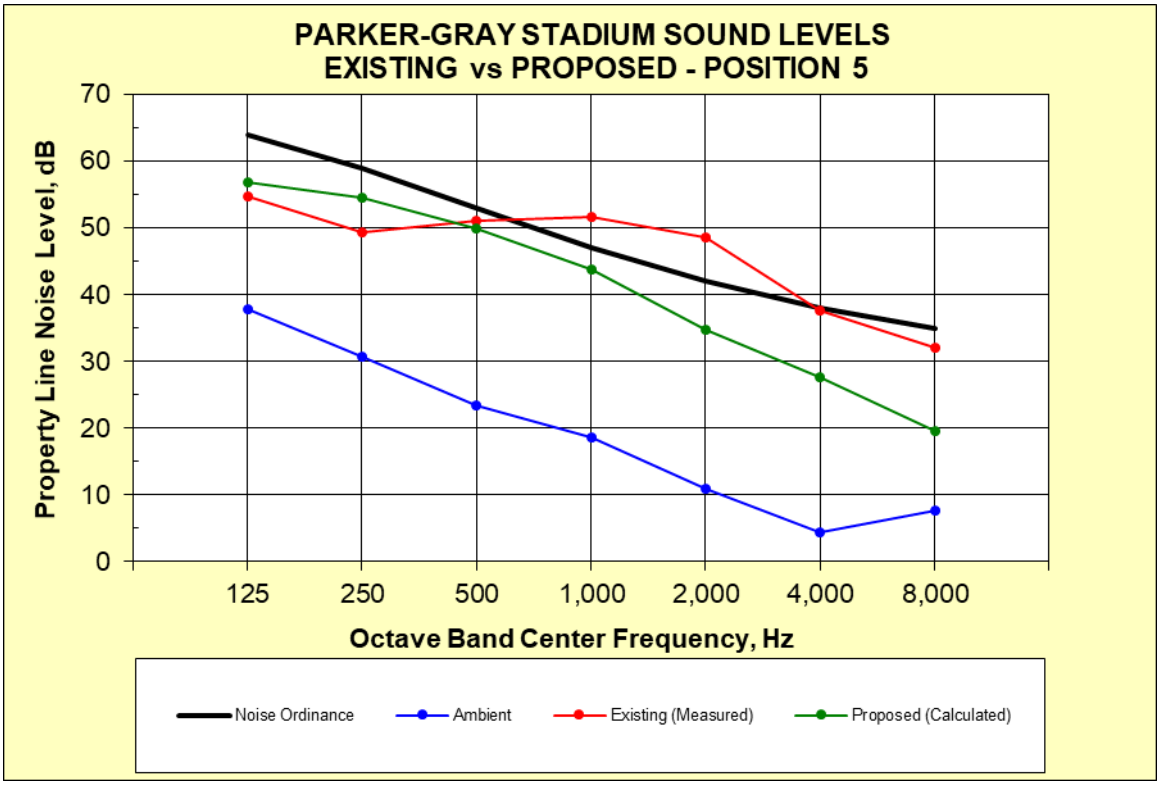


Figure B7. Existing (measured) vs. proposed (calculated) loudspeaker system sound levels – Position 5

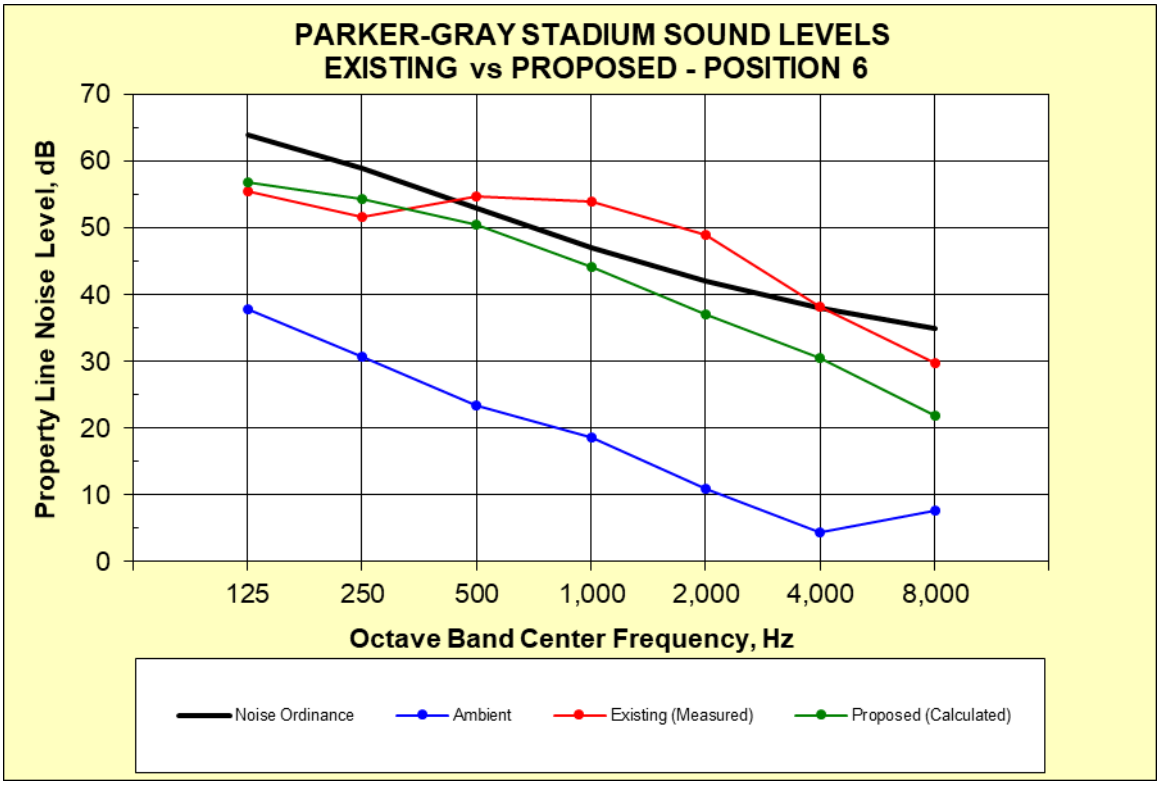


Figure B8. Existing (measured) vs. proposed (calculated) loudspeaker system sound levels – Position 6

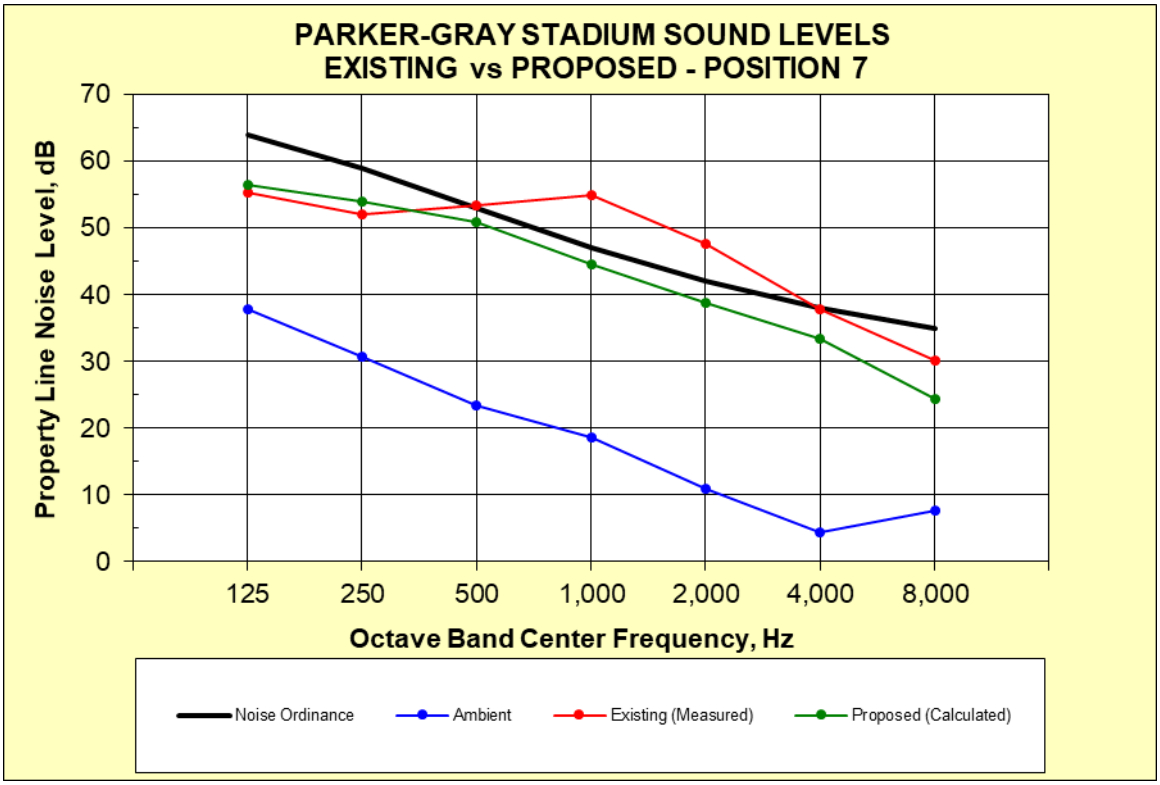


Figure B9. Existing (measured) vs. proposed (calculated) loudspeaker system sound levels – Position 7

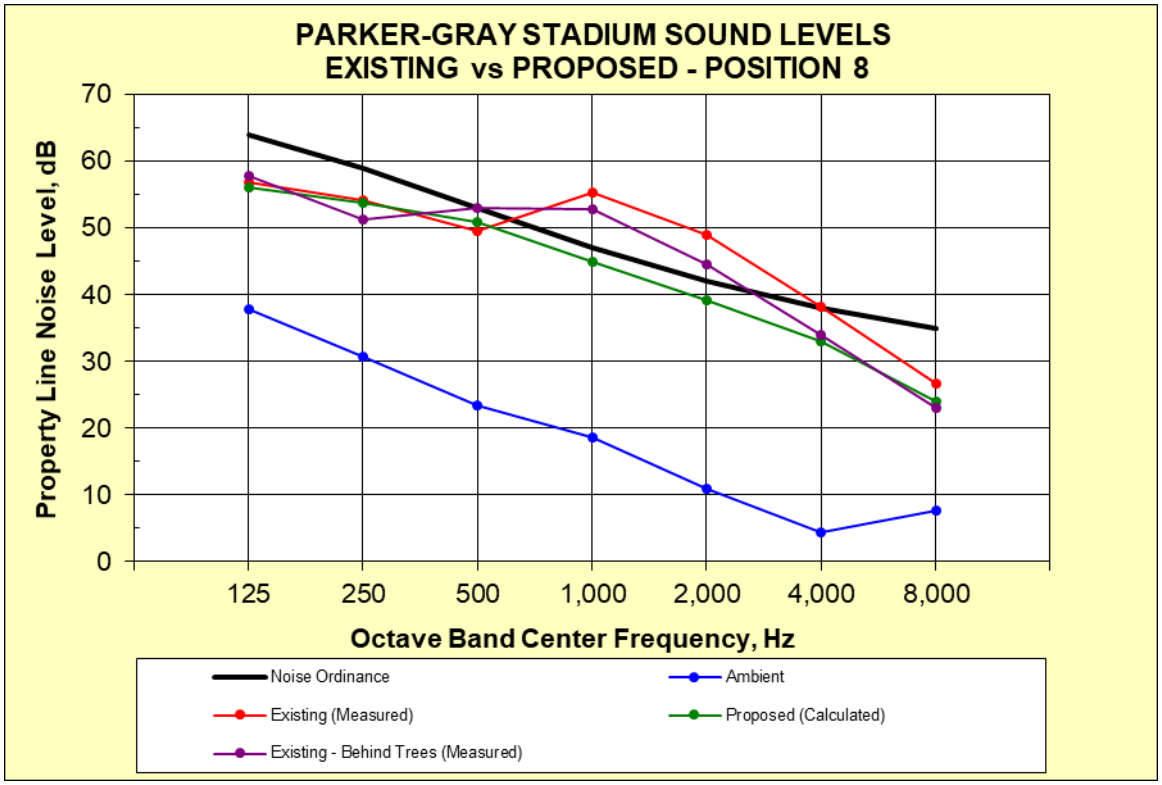


Figure B10. Existing (measured) vs. proposed (calculated) loudspeaker system sound levels – Position 8

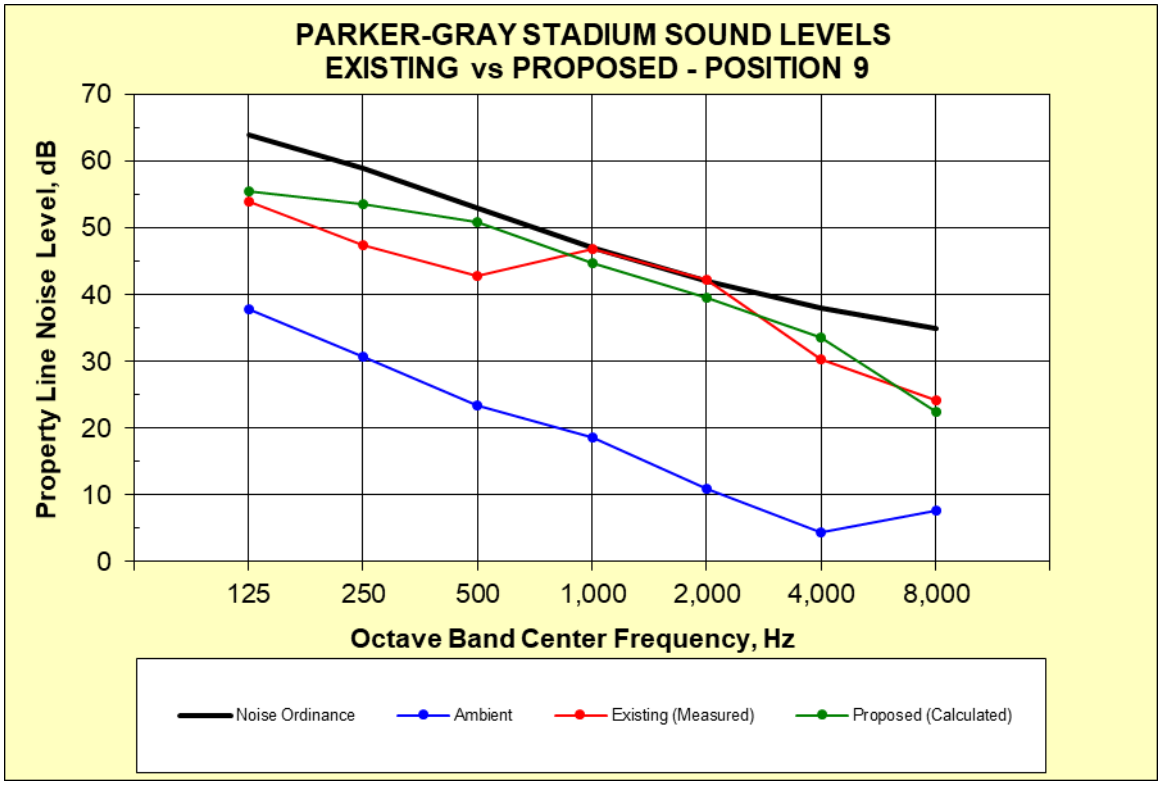


Figure B11. Existing (measured) vs. proposed (calculated) loudspeaker system sound levels – Position 9

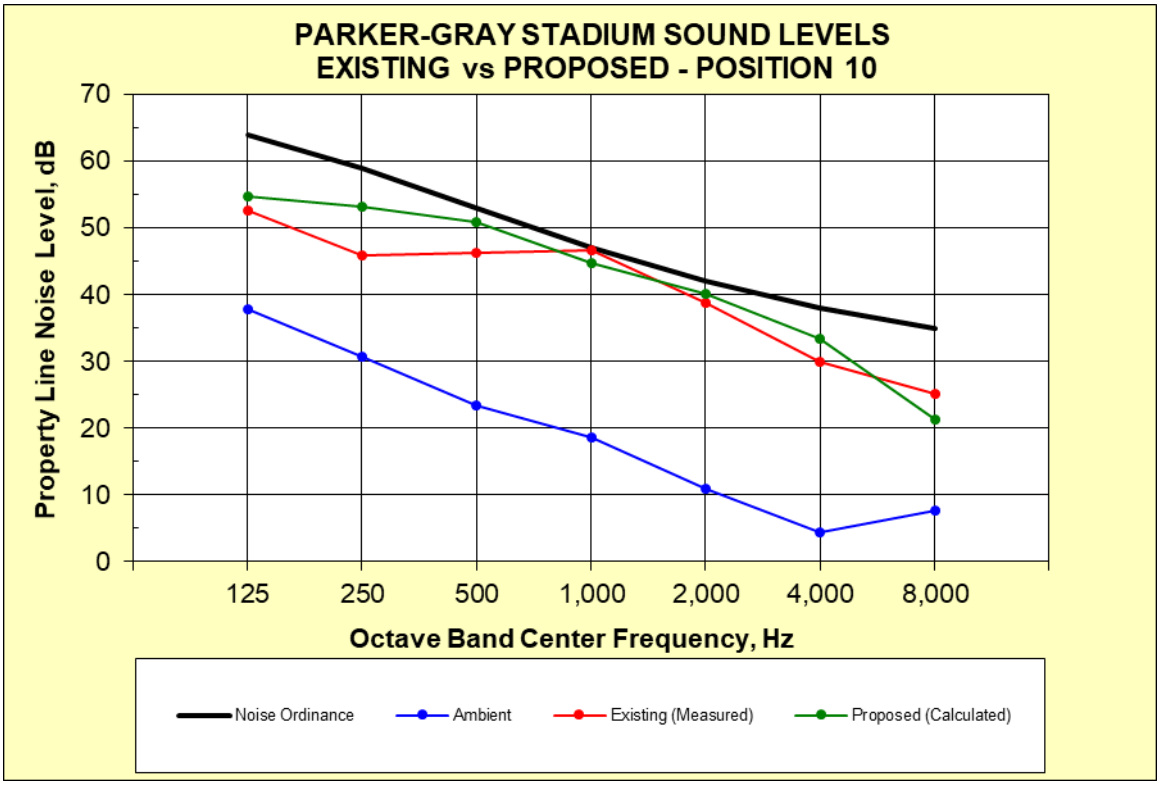


Figure B12. Existing (measured) vs. proposed (calculated) loudspeaker system sound levels – Position 10

Appendix C
Proposed Loudspeaker Model

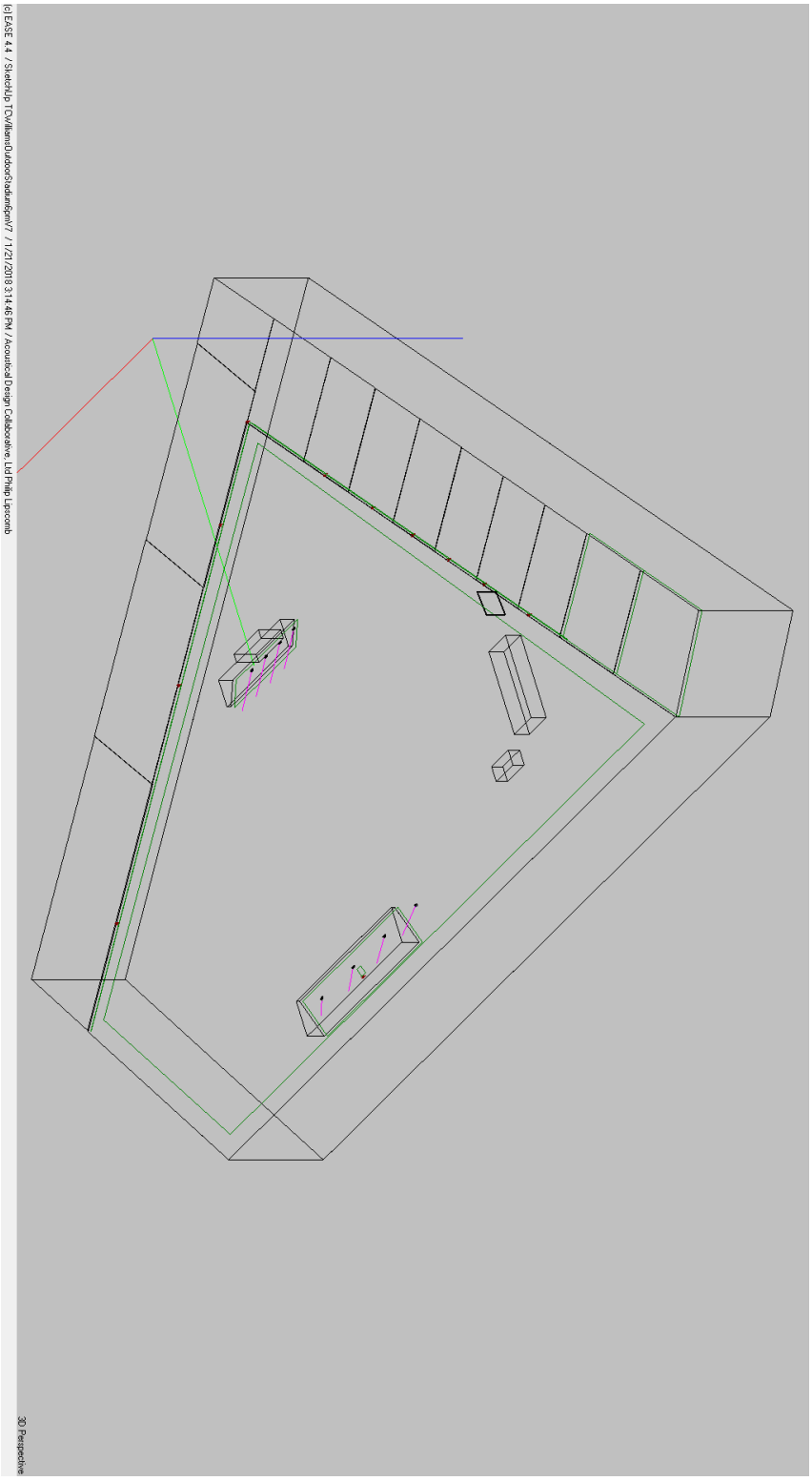


Figure C1. Computer Model of the Stadium with Proposed Loudspeaker System – Isometric View (rotated to fit)

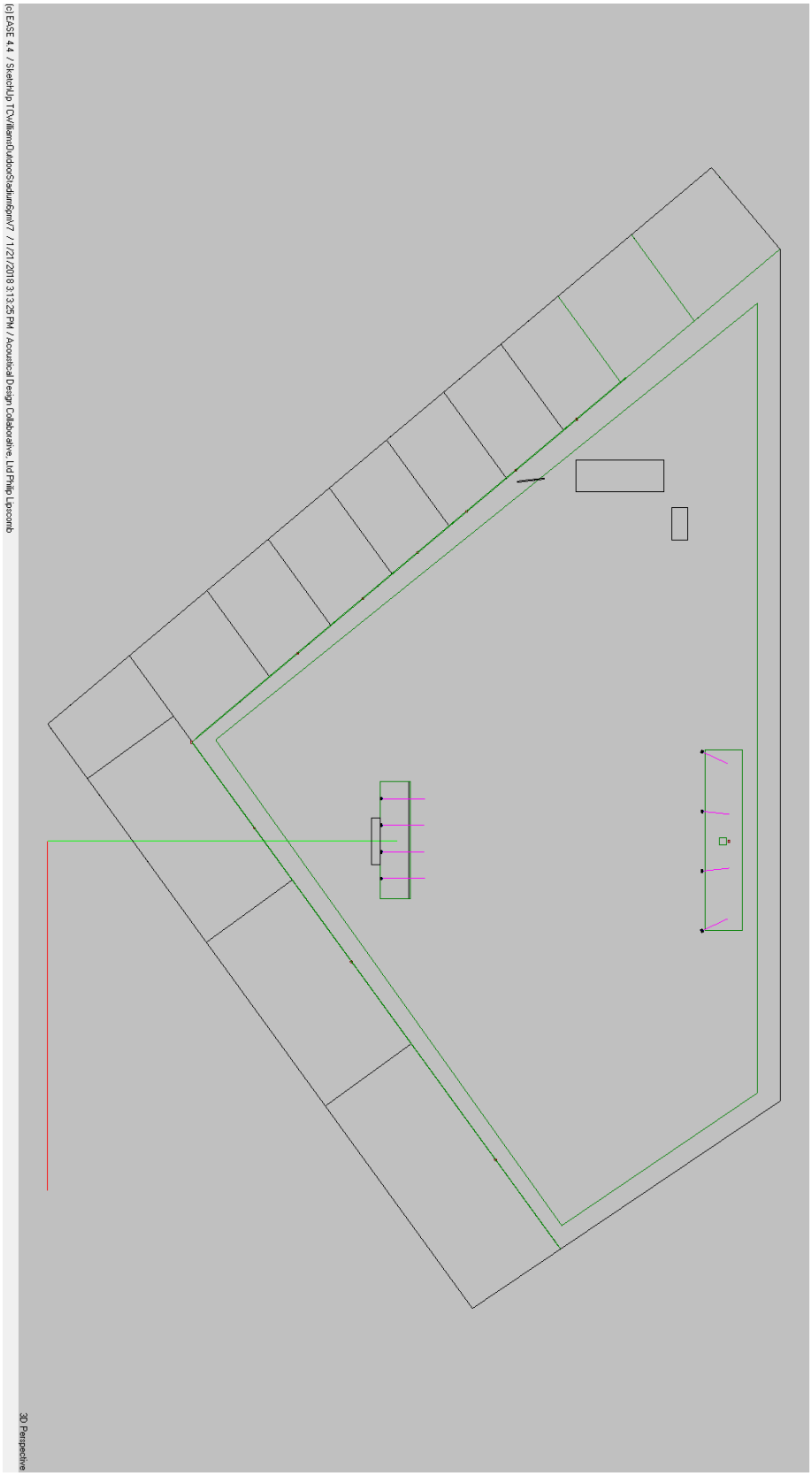


Figure C2. Computer Model of the Stadium with Proposed Loudspeaker System – Plan View (rotated to fit)

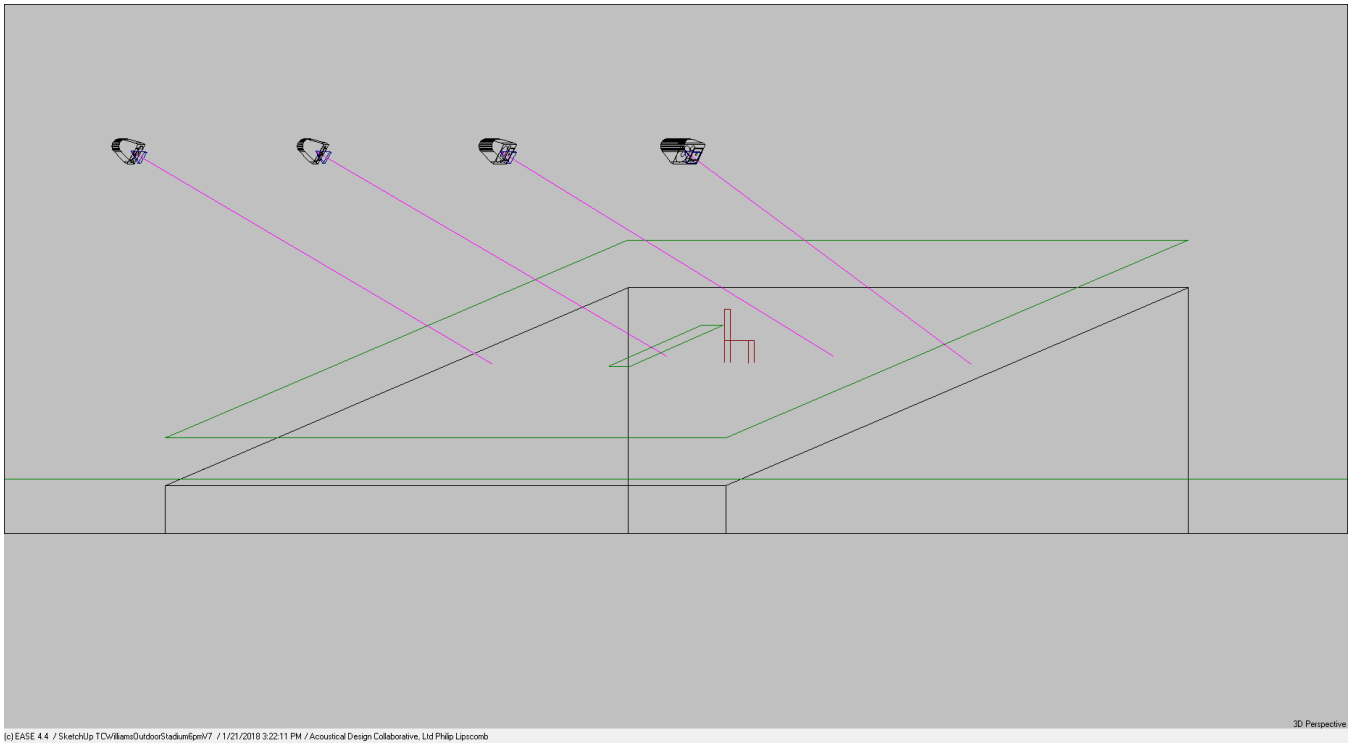


Figure C3. Computer Model of the Proposed Loudspeaker System – Home Bleachers

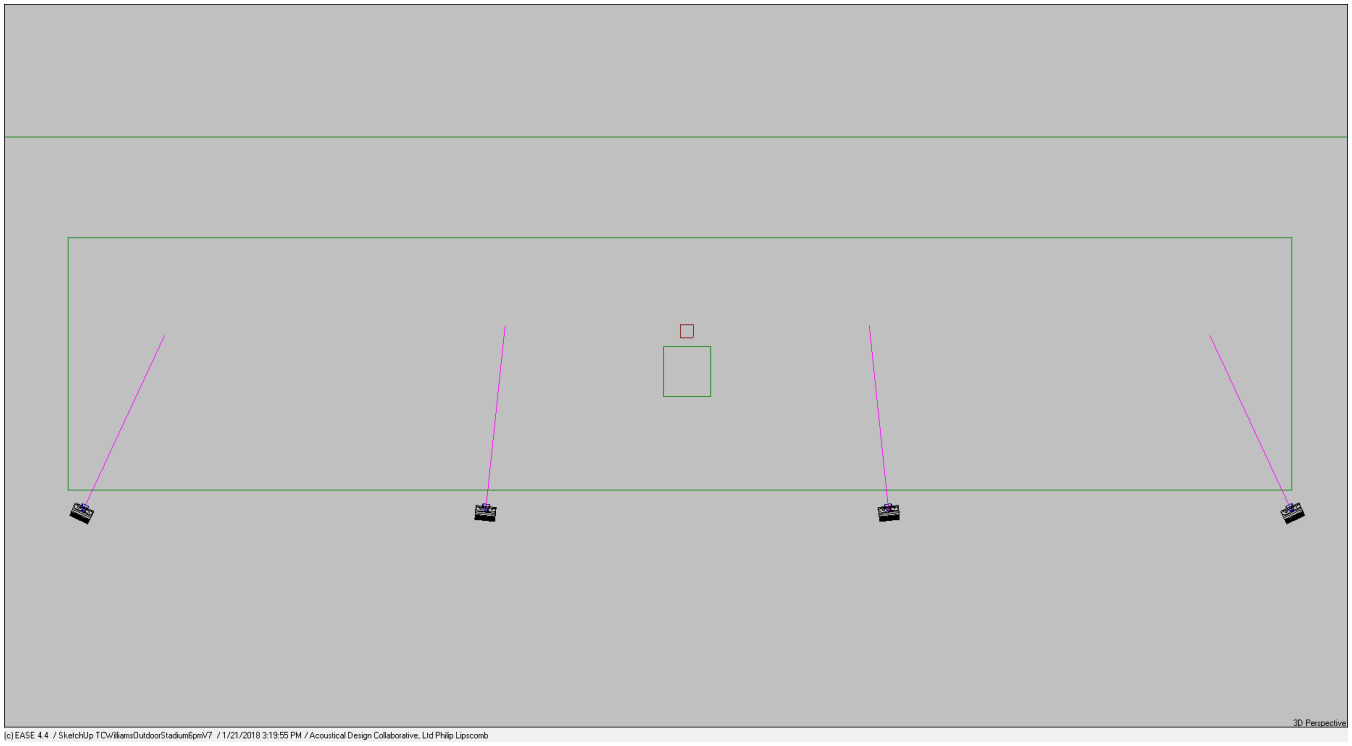


Figure C4. Computer Model of the Proposed Loudspeaker System – Home Bleachers (Plan)

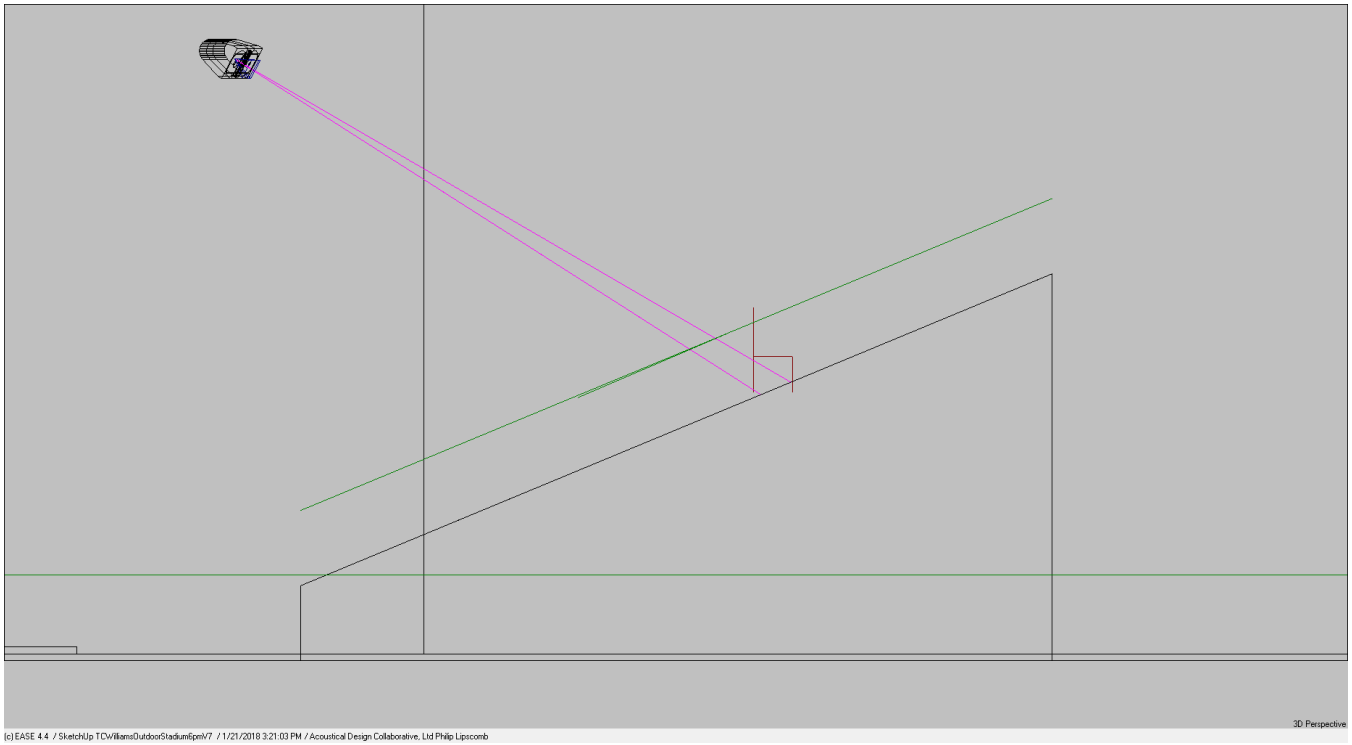


Figure C5. Computer Model of the Proposed Loudspeaker System – Home Bleachers (Section)

Figure C6. Computer Model of the Proposed Loudspeaker System – Visitor Bleachers

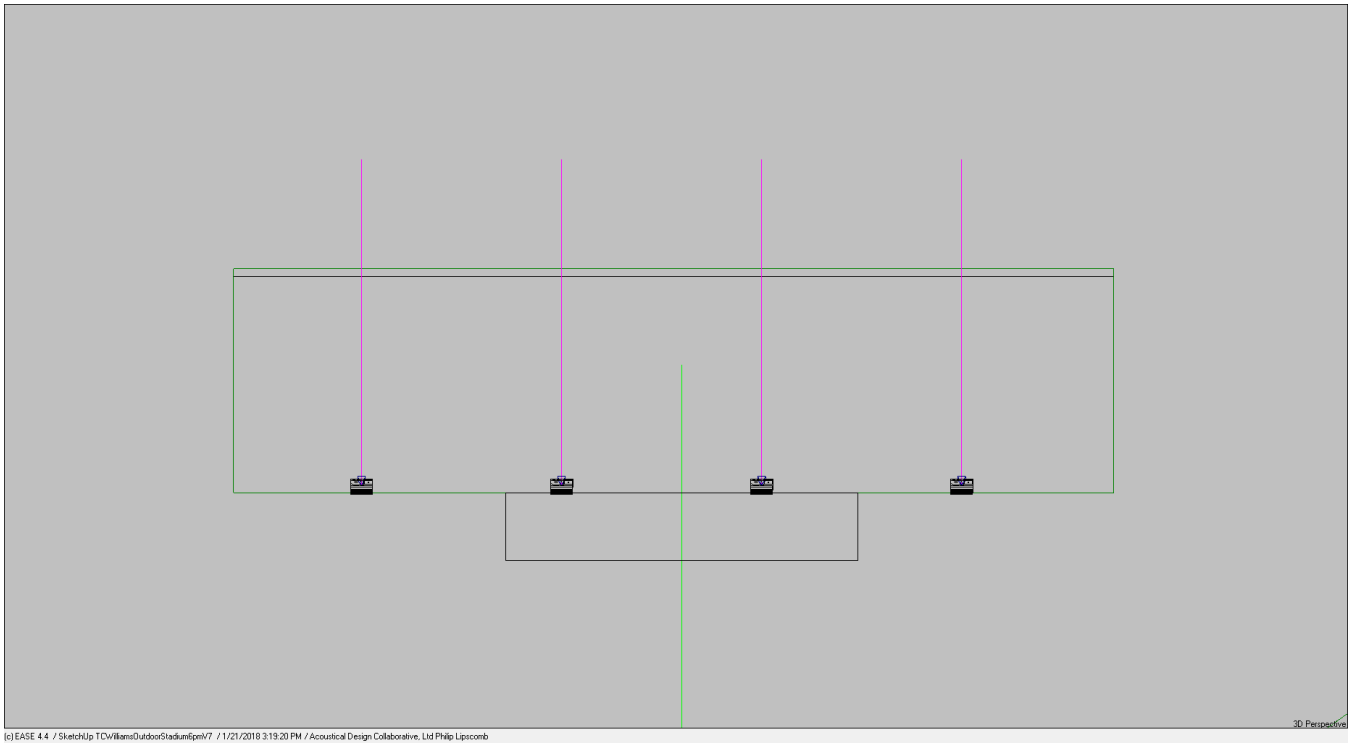


Figure C7. Computer Model of the Proposed Loudspeaker System – Visitor Bleachers (Plan)

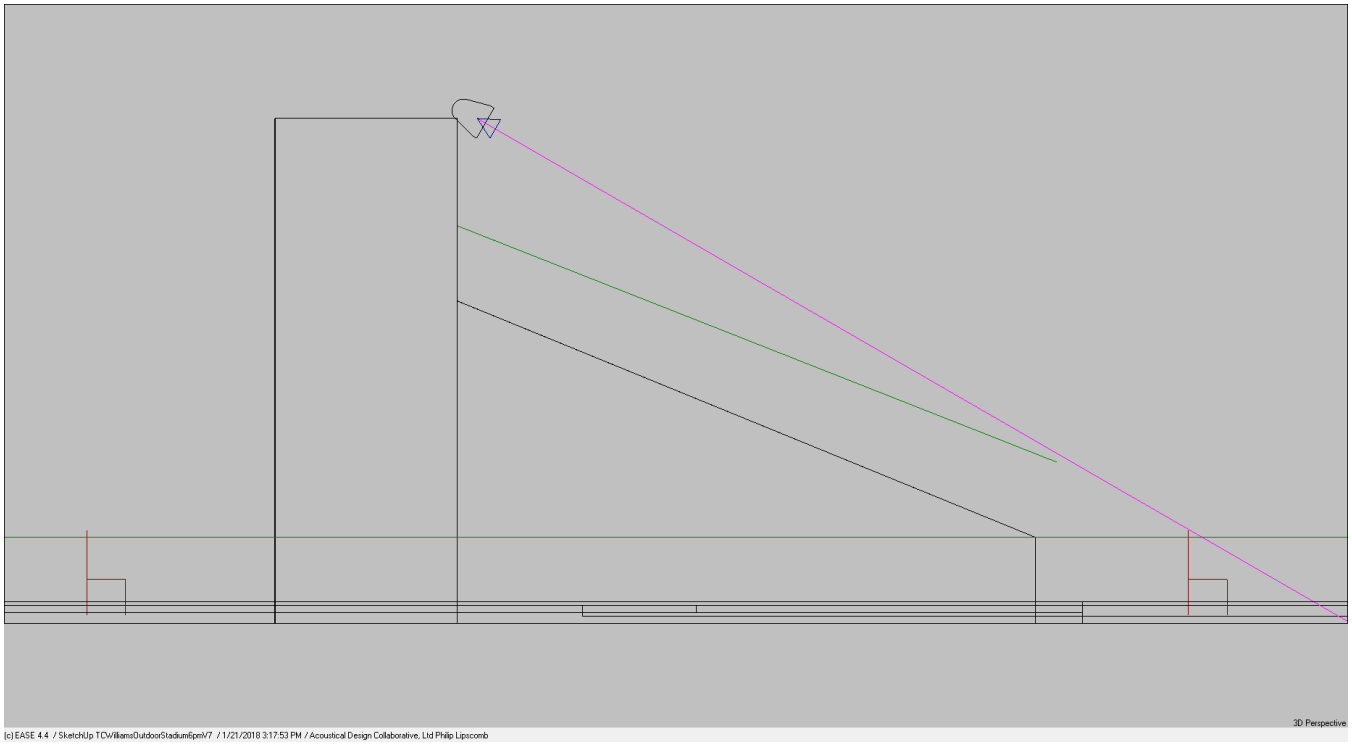


Figure C8. Computer Model of the Proposed Loudspeaker System – Visitor Bleachers (Section)

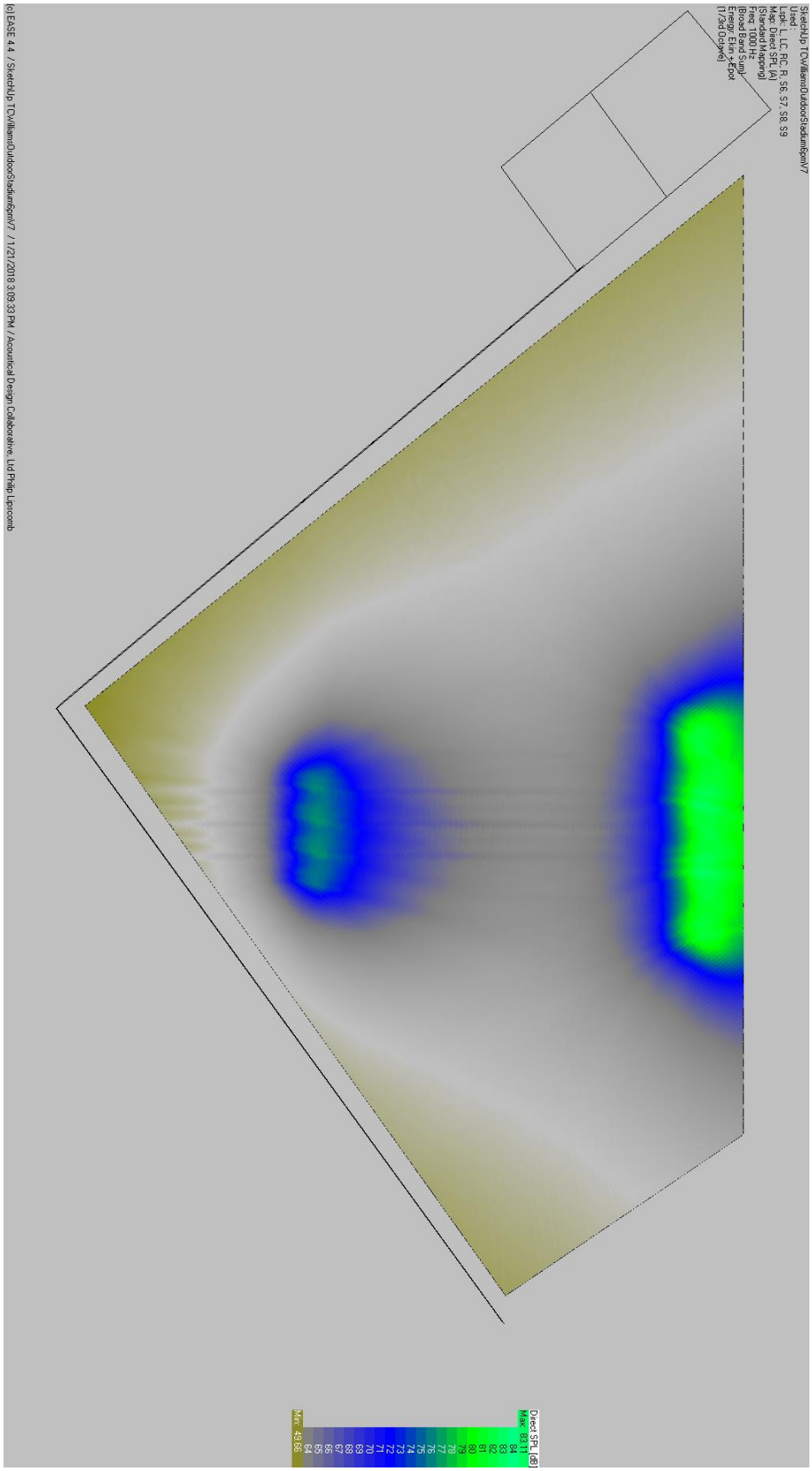


Figure C9. A-Weighted Sound Level (Field) (rotated to fit)

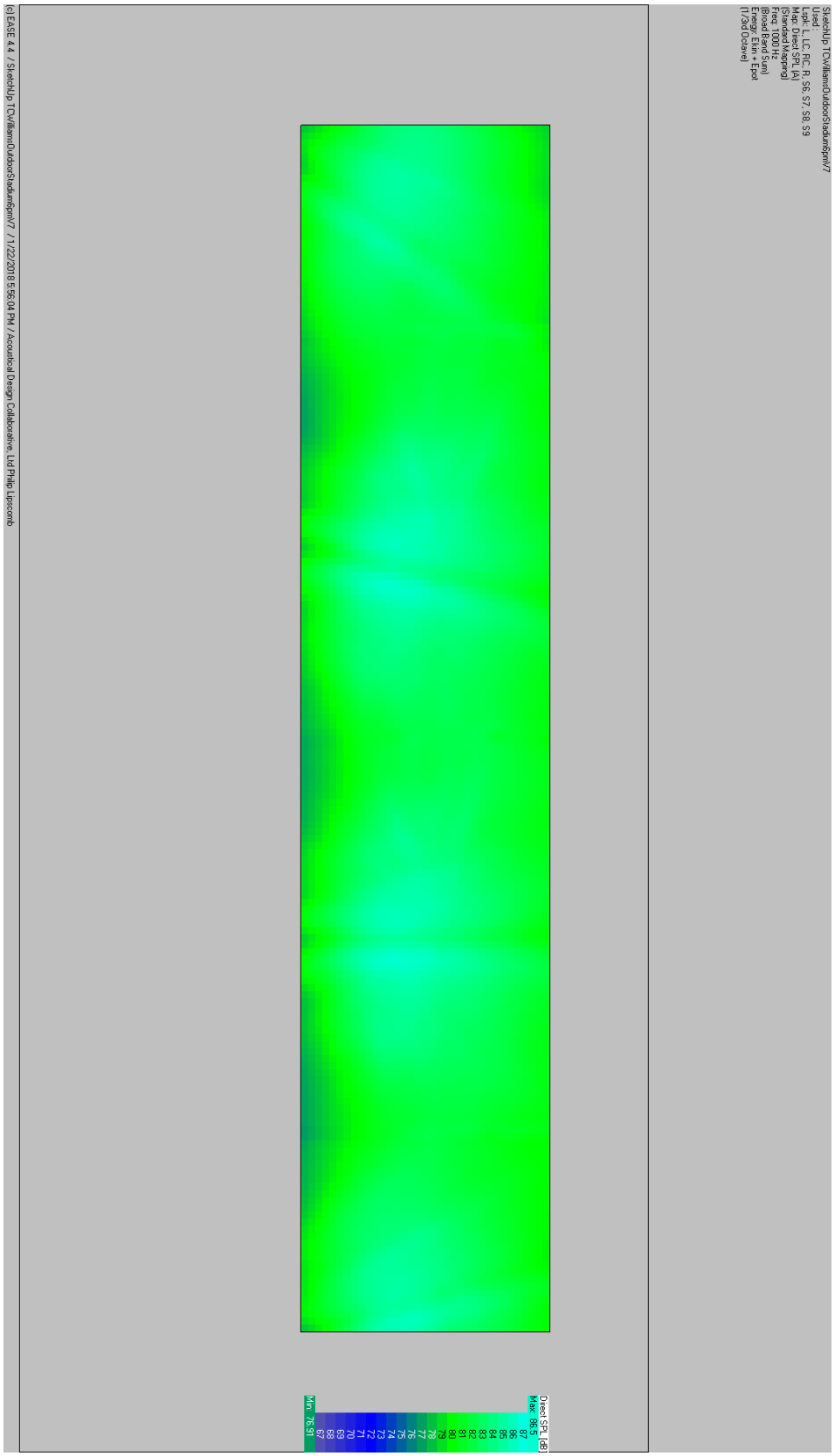


Figure C10. A-Weighted Sound Level (Home Bleachers) (rotated to fit)

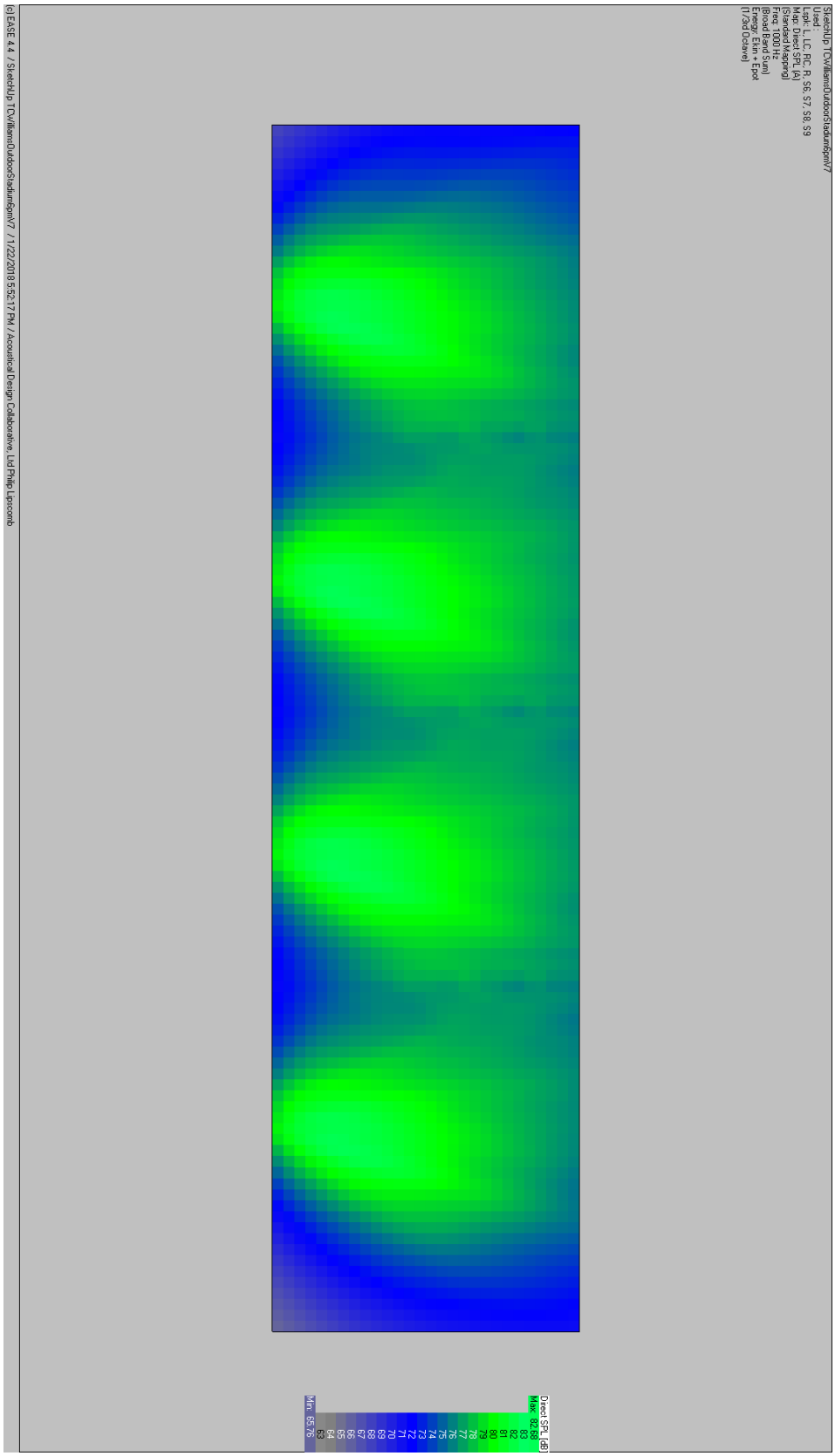


Figure C11. A-Weighted Sound Level (Visitor Bleachers) (rotated to fit)

WX-1526

WET X FULL-RANGE TWO-WAY
15-INCH LOUDSPEAKER (120° X 60°)

TECHNICAL SPECIFICATIONS

SYSTEM

Loudspeaker Type:	Full-range, two-way, weather-resistant
Operating Range:	40 Hz to 22 kHz (-10 dB)
Frequency Response:	50 Hz to 18 kHz (-3 dB)
Max Input Ratings:	600W RMS, 1200W Program 69 volts RMS, 138 volts momentary peak
Maximum Output:	127 dB SPL / 133 dB SPL (peak)
Sensitivity (1W / 1m) **Free Space SPL:**	99 dB (63 Hz - 16 kHz 1/3 octave bands) 98 dB (250 Hz - 4 kHz speech range)
Nominal Impedance:	8 ohms, 6.3 ohms @ 9 kHz minimum
Coverage Pattern:	120° H x 60° V
Axial Q / DI:	7.67 / 8.85, 2 kHz to 16 kHz
Crossover Frequency:	1.5 kHz
Recommended High Pass:	50 Hz 24 dB / Octave

TRANSDUCERS

LOW FREQUENCY	
Driver:	1 x 15" cone, 3" voice coil, weather-treated
Sensitivity (1W / 1m):	96 dB (60 Hz - 1.1 kHz)
Power Capacity (Cont/Peak):	600W / 2400W
Nominal Impedance:	8 ohms
HIGH FREQUENCY	
Driver:	1 x 2.87" voice coil / 1.4" exit
Sensitivity (1W / 1m):	106 dB (1 kHz - 20 kHz)
Power Capacity (Cont/Peak):	90W / 360W
Nominal Impedance:	8 ohms

PHYSICAL

Input Connection:	12' (4m) SJOW #16-gauge cable with stripped ends
Enclosure:	Trapezoidal fiberglass outer shell and face lined and reinforced with 18mm (7-layer) marine grade plywood
Finish:	Black or White gel coat fiberglass
Mounting/Rigging Provisions:	Two 1/2"-13 rigging points; 304SS zinc-rich dual-layer powder-coated bracket included; Integral 1/2"-13 safety cable mounting point
Grille:	3-Layer Weather-Stop™ backing, 304SS zinc-rich dual-layer powder-coated
Environmental:	IP56 per IEC 529
Dimensions – H x W x D: **(horizontal orientation)**	19.5" x 33.63" x 20.5" (495.3 x 854.1 x 520.7 mm)
Loudspeaker / Unit Weight:	115 lbs (52.3 kg) / 133 lbs (60.3 kg) with bracket
Shipping Weight:	162 lbs (73.5 kg)

CONFIGURE-TO-ORDER (CTO) OPTIONS

Custom Colors:	Custom color exterior-grade paint finish, RAL or custom color matching available
Extra Hang Points:	2 or 3 additional per side (several options available)
Bi-amp:	Includes 4-conductor, 4-color SJOW cable
Transformer:	70V: 400W / 200W / 100W 100V: 400W / 200W
Cable:	Custom length

NOTE: All wattage figures are calculated using the rated impedance.

Available in Black or White (standard)

APPLICATIONS

- Theme and Amusement Parks
- Outdoor Entertainment Centers
- Cruise Ships
- Multipurpose outdoor and indoor venues
- Stadiums
- Music Pavilions
- Musical Fountains
- Water Parks

FEATURES

- 120° x 60° rotatable horn pattern
- Large format waveguide delivers excellent pattern control
- 1.4" (36mm) exit / 2.87" (72.2mm) VC HF transducer
- 15" (381mm) / 3" VC LF weather-treated transducer
- Passive operating mode standard
- All-weather, multi-layer glass composite shell over 18mm 7-layer marine grade plywood interior
- Dual-layer powder-coated 304 stainless steel mounting bracket included
- Stainless steel hardware
- Available with optional built-in 400W transformer for 70V / 100V applications

DESCRIPTION

The WX-1526 is a premium quality, large format, full-range loudspeaker system. The driver complement consists of a 15" (381mm) high power low frequency driver and a 1.4" (36mm) exit / 2.87" (72.9mm) edgewound voice coil compression driver. The large format rotatable horn flare delivers well controlled 120° x 60° dispersion, and utilizes high order crossovers to minimize band overlap.

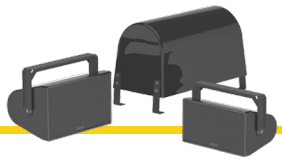
The WX-1526 is used in passive operating mode. The passive mode is designed to deliver outstanding performance without the use of a processor. A custom bi-amp option can allow greater system flexibility allowing a compatible processor to enhance the LF response.

The WET X Series is designed to provide high quality music and voice reproduction in applications requiring extreme weather-resistance. The WET X enclosure features unmatched durability and ruggedness and is engineered for use in permanent installations.

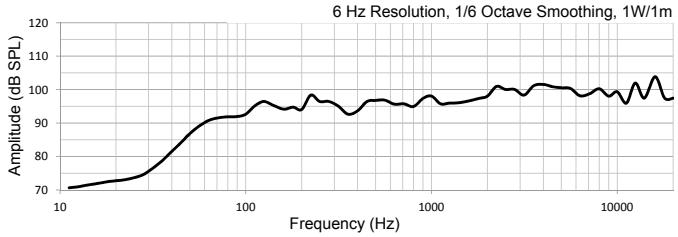
The loudspeaker enclosure and faceplate are constructed of multi-layer glass composite lined with 18mm (7-layer) marine grade plywood, resulting in extreme structural strength. All exposed hardware is stainless steel or powder-coated aluminum extrusion. A weather-resistant 304SS, dual-layer powder-coated horizontal bracket is included for mounting.

WX-1526

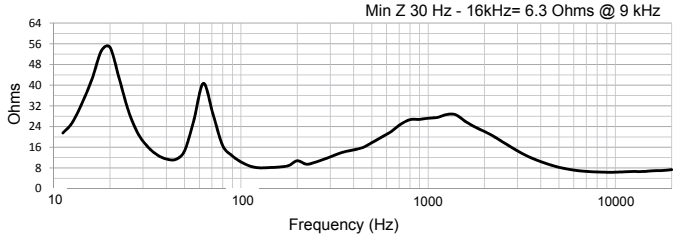
WET X FULL-RANGE TWO-WAY
15-INCH LOUDSPEAKER (120° X 60°)



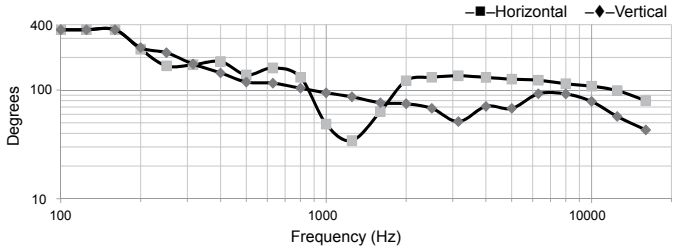
FREQUENCY RESPONSE



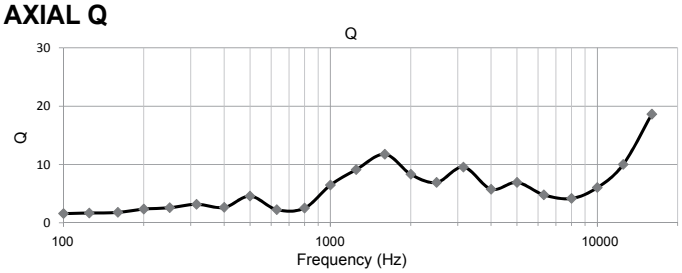
IMPEDANCE



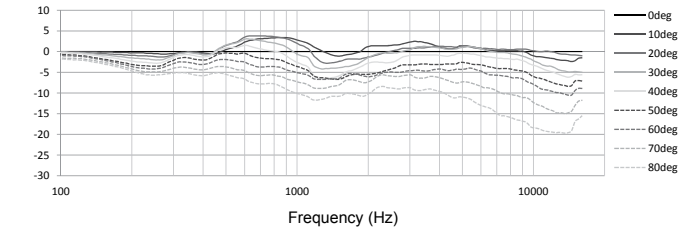
BEAMWIDTH



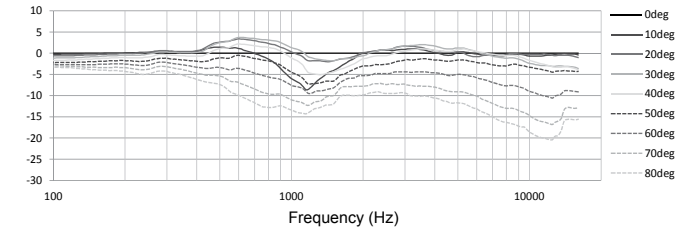
AXIAL Q



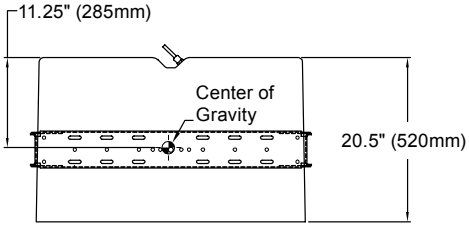
HORIZONTAL OFF-AXIS FREQUENCY RESPONSE LEFT



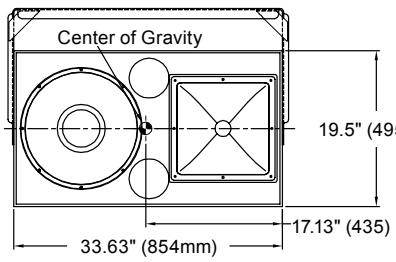
HORIZONTAL OFF-AXIS FREQUENCY RESPONSE RIGHT



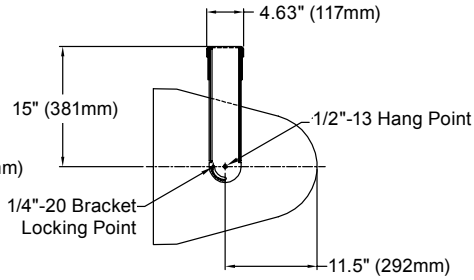
DIMENSIONS



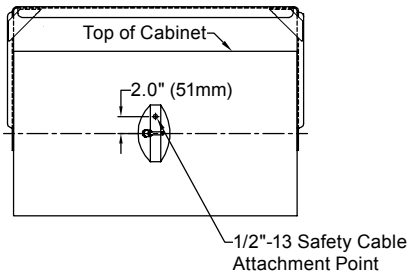
TOP / BRACKET



FRONT

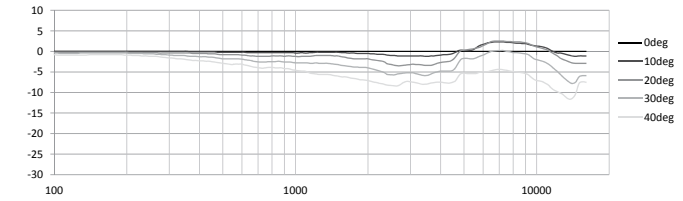


SIDES



BACK

VERTICAL UP/DOWN OFF-AXIS FREQUENCY RESPONSE



ARCHITECTURAL SPECIFICATIONS

The loudspeaker system shall be a two-way, full-range bass reflex trapezoid-shaped design with one 15 in. (381 mm) LF driver and one 1.4 in. exit HF driver with a titanium diaphragm mounted to a 120° x 60° HF fiberglass horn. Drivers shall be connected to an integral crossover with a crossover frequency of 1.5 kHz. The input connection shall be one 12' (4m) SJOW #16-gauge cable with stripped ends. The loudspeaker enclosure shall be a multi-layer glass composite with a 16-gauge perforated stainless steel grille backed by open cell foam and a high density polyester mesh cloth. There shall be two 1/2"-13 rigging points. 95% of the shell interior shall be lined with wood, with 18mm 7-layer cross-laminated marine grade plywood on all interior flat surfaces. All wood shall be sealed with fiberglass resin. The system shall have a frequency response of 50 Hz to 18 kHz (-3 dB SPL), an input capability of 69V RMS, 99 dB sensitivity at 1W / 1m at 8 ohms nominal impedance. The nominal dispersion shall be 120° H x 60° V from 2 kHz to 16 kHz. The loudspeaker shall be 19.5" (495.3 mm) H x 33.63" (854.1 mm) W (front) x 20.5" (520.7 mm) deep and shall weigh 115 lbs (52.3 kg).

CAUTION: *Installation of loudspeakers should only be performed by trained and qualified personnel. It is strongly recommended that a licensed and certified professional structural engineer approve the mounting design.*

WX-1596 WET X FULL-RANGE TWO-WAY 15-INCH LOUDSPEAKER (90° X 60°)

TECHNICAL SPECIFICATIONS

SYSTEM

Loudspeaker Type:	Full-range, two-way, weather-resistant
Operating Range:	40 Hz to 22 kHz (-10 dB)
Frequency Response:	50 Hz to 18 kHz (-3 dB)
Max Input Ratings:	600W RMS, 1200W Program 69 volts RMS, 138 volts momentary peak
Maximum Output:	126 dB SPL / 132 dB SPL (peak)
Sensitivity (1W / 1m) **Free Space SPL:**	98 dB (63 Hz - 16 kHz 1/3 octave bands) 98 dB (250 Hz - 4 kHz speech range)
Nominal Impedance:	8 ohms, 8.2 ohms @ 140 Hz minimum
Coverage Pattern:	90° H x 60° V
Axial Q / DI:	11.15 / 10.47, 2 kHz to 16 kHz
Crossover Frequency:	1.5 kHz
Recommended High Pass:	50 Hz 24 dB / Octave

TRANSDUCERS

LOW FREQUENCY	
Driver:	1 x 15" cone, 3" voice coil, weather-treated
Sensitivity (1W / 1m):	96 dB (60 Hz - 1.1 kHz)
Power Capacity (Cont/Peak):	600W / 2400W
Nominal Impedance:	8 ohms
HIGH FREQUENCY	
Driver:	1 x 2.87" voice coil / 1.4" exit
Sensitivity (1W / 1m):	107 dB (1 kHz - 20 kHz)
Power Capacity (Cont/Peak):	90W / 360W
Nominal Impedance:	8 ohms

PHYSICAL

Input Connection:	12' (4m) SJOW #16-gauge cable with stripped ends
Enclosure:	Trapezoidal fiberglass outer shell and face lined and reinforced with 18mm (7-layer) marine grade plywood
Finish:	Black or White gel coat fiberglass
Mounting/Rigging Provisions:	Two 1/2"-13 rigging points; 304SS zinc-rich dual-layer powder-coated bracket included; Integral 1/2"-13 safety cable mounting point
Grille:	3-Layer Weather-Stop™ backing, 304SS zinc-rich dual-layer powder-coated
Environmental:	IP56 per IEC 529
Dimensions – H x W x D: **(horizontal orientation)**	19.5" x 33.63" x 20.5" (495.3 x 854.1 x 520.7 mm)
Loudspeaker / Unit Weight:	115 lbs (52.3 kg) / 133 lbs (60.3 kg) with bracket
Shipping Weight:	162 lbs (73.5 kg)

CONFIGURE-TO-ORDER (CTO) OPTIONS

Custom Colors:	Custom color exterior-grade paint finish, RAL or custom color matching available
Extra Hang Points:	2 or 3 additional per side (several options available)
Bi-amp:	Includes 4-conductor, 4-color SJOW cable
Transformer:	70V: 400W / 200W / 100W 100V: 400W / 200W
Cable:	Custom length

NOTE: All wattage figures are calculated using the rated impedance.

Available in Black or White (standard)

APPLICATIONS

- Theme and Amusement Parks
- Outdoor Entertainment Centers
- Cruise Ships
- Multipurpose outdoor and indoor venues
- Stadiums
- Music Pavilions
- Musical Fountains
- Water Parks

FEATURES

- 90° x 60° rotatable horn pattern
- Large format waveguide delivers excellent pattern control
- 1.4" (36mm) exit / 2.87" (72.2mm) VC HF transducer
- 15" (381mm) / 3" VC LF weather-treated transducer
- Passive operating mode standard
- All-weather, multi-layer glass composite shell over 18mm 7-layer marine grade plywood interior
- Dual-layer powder-coated 304 stainless steel mounting bracket included
- Stainless steel hardware
- Available with optional built-in 400W transformer for 70V / 100V applications

DESCRIPTION

The WX-1596 is a premium quality, large format, full-range loudspeaker system. The driver complement consists of a 15" (381mm) high power low frequency driver and a 1.4" (36mm) exit / 2.87" (72.9mm) edgewound voice coil compression driver. The large format rotatable horn flare delivers well controlled 90° x 60° dispersion, and utilizes high order crossovers to minimize band overlap.

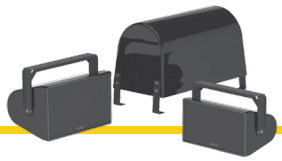
The WX-1596 is used in passive operating mode. The passive mode is designed to deliver outstanding performance without the use of a processor. A custom bi-amp option can allow greater system flexibility allowing a compatible processor to enhance the LF response.

The WET X Series is designed to provide high quality music and voice reproduction in applications requiring extreme weather-resistance. The WET X enclosure features unmatched durability and ruggedness and is engineered for use in permanent installations.

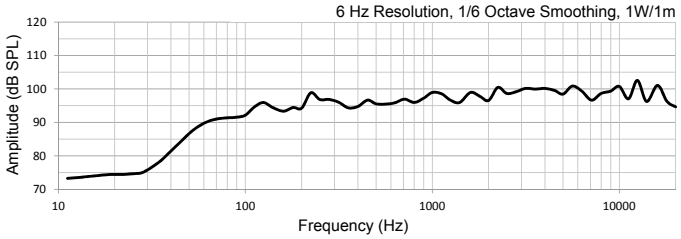
The loudspeaker enclosure and faceplate are constructed of multi-layer glass composite lined with 18mm (7-layer) marine grade plywood, resulting in extreme structural strength. All exposed hardware is stainless steel or powder-coated aluminum extrusion. A weather-resistant 304SS, dual-layer powder-coated horizontal bracket is included for mounting.

WX-1596

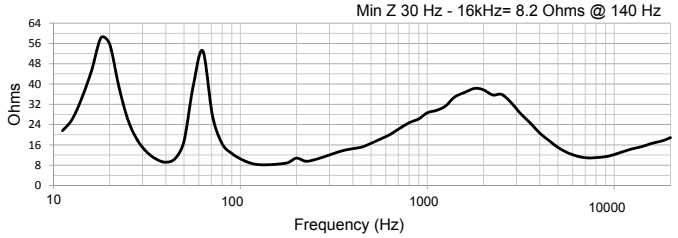
WET X FULL-RANGE TWO-WAY
15-INCH LOUDSPEAKER (90° X 60°)



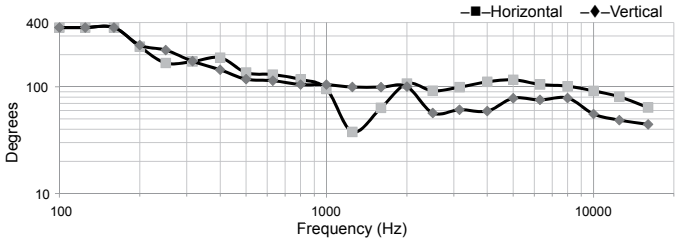
FREQUENCY RESPONSE



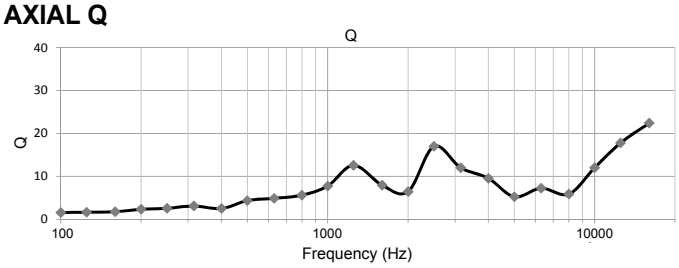
IMPEDANCE



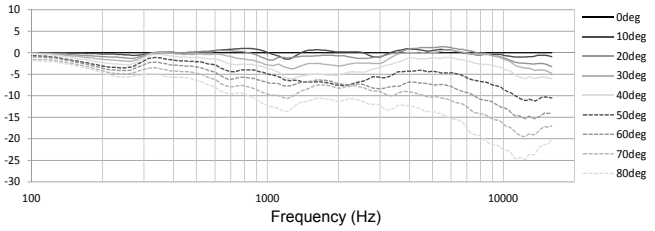
BEAMWIDTH



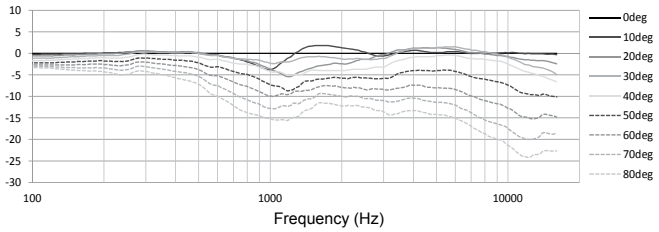
AXIAL Q



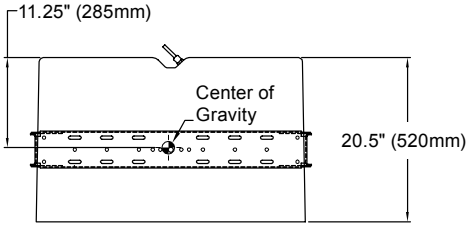
HORIZONTAL OFF-AXIS FREQUENCY RESPONSE LEFT



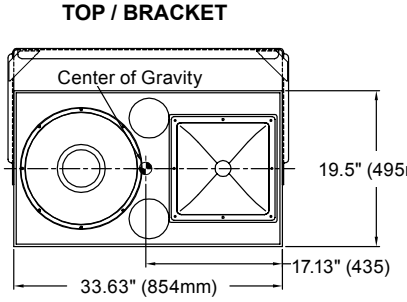
HORIZONTAL OFF-AXIS FREQUENCY RESPONSE RIGHT



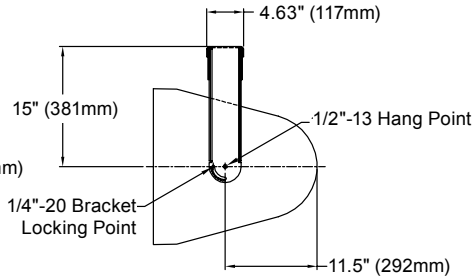
DIMENSIONS



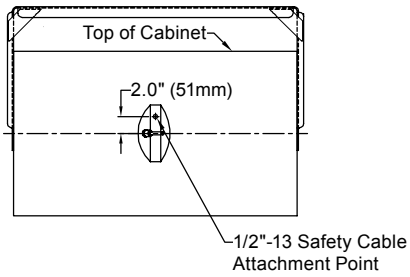
TOP / BRACKET



FRONT

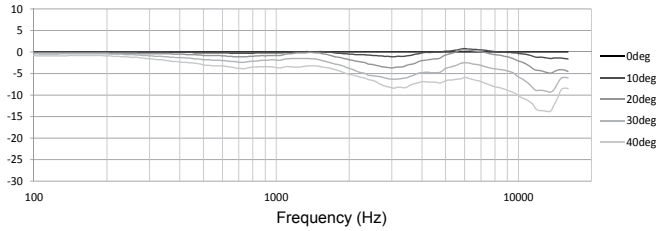


SIDES



BACK

VERTICAL UP/DOWN OFF-AXIS FREQUENCY RESPONSE



ARCHITECTURAL SPECIFICATIONS

The loudspeaker system shall be a two-way, full-range bass reflex trapezoid-shaped design with one 15 in. (381 mm) LF driver and one 1.4 in. exit HF driver with a titanium diaphragm mounted to a 90° x 60° HF fiberglass horn. Drivers shall be connected to an integral crossover with a crossover frequency of 1.5 kHz. The input connection shall be one 12' (4m) SJOW #16-gauge cable with stripped ends. The loudspeaker enclosure shall be a multi-layer glass composite with a 16-gauge perforated stainless steel grille backed by open cell foam and a high density polyester mesh cloth. There shall be two 1/2"-13 rigging points. 95% of the shell interior shall be lined with wood, with 18mm 7-layer cross-laminated marine grade plywood on all interior flat surfaces. All wood shall be sealed with fiberglass resin. The system shall have a frequency response of 50 Hz to 18 kHz (-3 dB SPL), an input capability of 69V RMS, 98 dB sensitivity at 1W / 1m at 8 ohms nominal impedance. The nominal dispersion shall be 90° H x 60° V from 2 kHz to 16 kHz. The loudspeaker shall be 19.5" (495.3 mm) H x 33.63" (854.1 mm) W (front) x 20.5" (520.7 mm) deep and shall weigh 115 lbs (52.3 kg).

CAUTION: *Installation of loudspeakers should only be performed by trained and qualified personnel. It is strongly recommended that a licensed and certified professional structural engineer approve the mounting design.*

WX-1564 WET X FULL-RANGE TWO-WAY 15-INCH LOUDSPEAKER (60° X 40°)

TECHNICAL SPECIFICATIONS

SYSTEM

Loudspeaker Type:	Full-range, two-way, weather-resistant
Operating Range:	40 Hz to 22 kHz (-10 dB)
Frequency Response:	50 Hz to 18 kHz (-3 dB)
Max Input Ratings:	600W RMS, 1200W Program 69 volts RMS, 138 volts momentary peak
Maximum Output:	126 dB SPL / 132 dB SPL (peak)
Sensitivity (1W / 1m) **Free Space SPL:**	98 dB (63 Hz - 16 kHz 1/3 octave bands) 98 dB (250 Hz - 4 kHz speech range)
Nominal Impedance:	8 ohms, 8.3 ohms @ 130 Hz minimum
Coverage Pattern:	60° H x 40° V
Axial Q / DI:	21.12 / 13.25, 2 kHz to 16 kHz
Crossover Frequency:	1.5 kHz
Recommended High Pass:	50 Hz 24 dB / Octave

TRANSDUCERS

LOW FREQUENCY	
Driver:	1 x 15" cone, 3" voice coil, weather-treated
Sensitivity (1W / 1m):	96 dB (60 Hz - 1.1 kHz)
Power Capacity (Cont/Peak):	600W / 2400W
Nominal Impedance:	8 ohms
HIGH FREQUENCY	
Driver:	1 x 2.87" voice coil / 1.4" exit
Sensitivity (1W / 1m):	110 dB (1 kHz - 20 kHz)
Power Capacity (Cont/Peak):	90W / 360W
Nominal Impedance:	8 ohms

PHYSICAL

Input Connection:	12' (4m) SJOW #16-gauge cable with stripped ends
Enclosure:	Trapezoidal fiberglass outer shell and face lined and reinforced with 18mm (7-layer) marine grade plywood
Finish:	Black or White gel coat fiberglass
Mounting/Rigging Provisions:	Two 1/2"-13 rigging points; 304SS zinc-rich dual-layer powder-coated bracket included; Integral 1/2"-13 safety cable mounting point
Grille:	3-Layer Weather-Stop™ backing, 304SS zinc-rich dual-layer powder-coated
Environmental:	IP56 per IEC 529
Dimensions – H x W x D: **(horizontal orientation)**	19.5" x 33.63" x 20.5" (495.3 x 854.1 x 520.7 mm)
Loudspeaker / Unit Weight:	115 lbs (52.3 kg) / 133 lbs (60.3 kg) with bracket
Shipping Weight:	162 lbs (73.5 kg)

CONFIGURE-TO-ORDER (CTO) OPTIONS

Custom Colors:	Custom color exterior-grade paint finish, RAL or custom color matching available
Extra Hang Points:	2 or 3 additional per side (several options available)
Bi-amp:	Includes 4-conductor, 4-color SJOW cable
Transformer:	70V: 400W / 200W / 100W 100V: 400W / 200W
Cable:	Custom length

NOTE: All wattage figures are calculated using the rated impedance.

Available in Black or White (standard)

APPLICATIONS

- Theme and Amusement Parks
- Outdoor Entertainment Centers
- Cruise Ships
- Multipurpose outdoor and indoor venues
- Stadiums
- Music Pavilions
- Musical Fountains
- Water Parks

FEATURES

- 60° x 40° rotatable horn pattern
- Large format waveguide delivers excellent pattern control
- 1.4" (36mm) exit / 2.87" (72.2mm) VC HF transducer
- 15" (381mm) / 3" VC LF weather-treated transducer
- Passive operating mode standard
- All-weather, multi-layer glass composite shell over 18mm 7-layer marine grade plywood interior
- Dual-layer powder-coated 304 stainless steel mounting bracket included
- Stainless steel hardware
- Available with optional built-in 400W transformer for 70V / 100V applications

DESCRIPTION

The WX-1564 is a premium quality, large format, full-range loudspeaker system. The driver complement consists of a 15" (381mm) high power low frequency driver and a 1.4" (36mm) exit / 2.87" (72.9mm) edgewound voice coil compression driver. The large format rotatable horn flare delivers well controlled 60° x 40° dispersion, and utilizes high order crossovers to minimize band overlap.

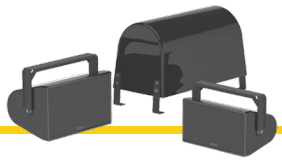
The WX-1564 is used in passive operating mode. The passive mode is designed to deliver outstanding performance without the use of a processor. A custom bi-amp option can allow greater system flexibility allowing a compatible processor to enhance the LF response.

The WET X Series is designed to provide high quality music and voice reproduction in applications requiring extreme weather-resistance. The WET X enclosure features unmatched durability and ruggedness and is engineered for use in permanent installations.

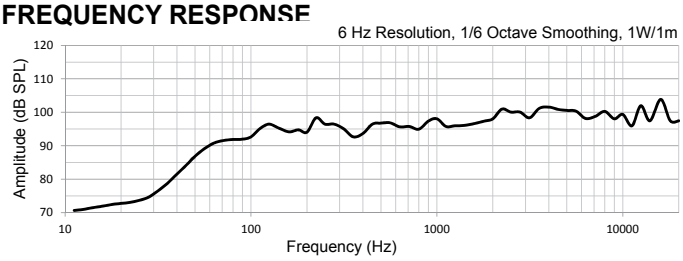
The loudspeaker enclosure and faceplate are constructed of multi-layer glass composite lined with 18mm (7-layer) marine grade plywood, resulting in extreme structural strength. All exposed hardware is stainless steel or powder-coated aluminum extrusion. A weather-resistant 304SS, dual-layer powder-coated horizontal bracket is included for mounting.

WX-1564

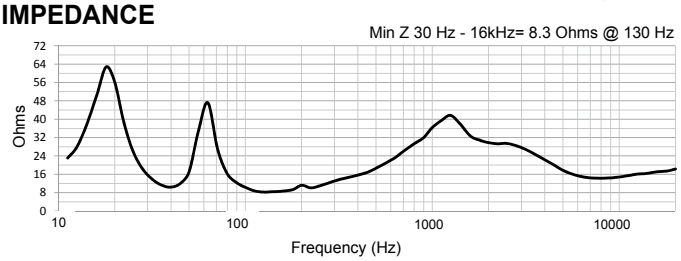
WET X FULL-RANGE TWO-WAY
15-INCH LOUDSPEAKER (60° X 40°)



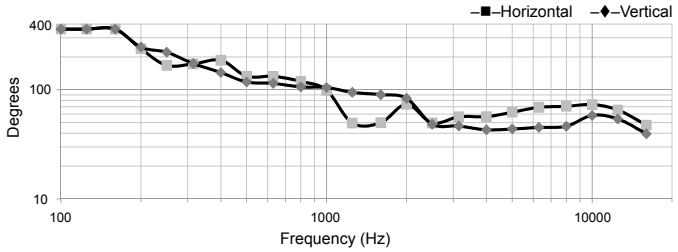
FREQUENCY RESPONSE



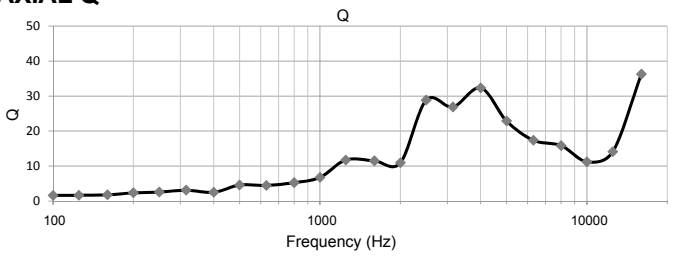
IMPEDANCE



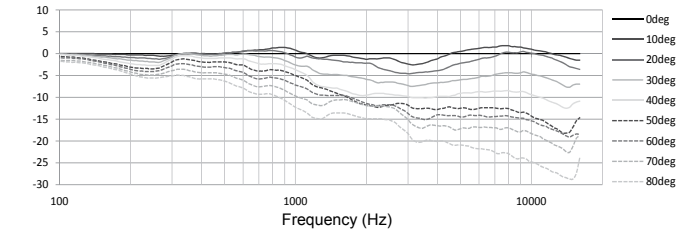
BEAMWIDTH



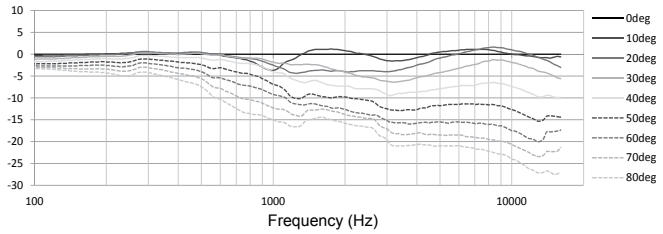
AXIAL Q



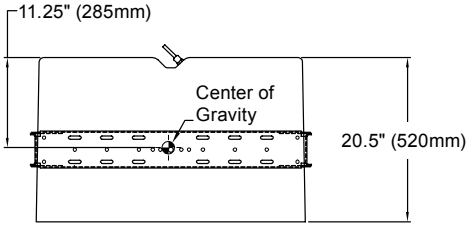
HORIZONTAL OFF-AXIS FREQUENCY RESPONSE LEFT



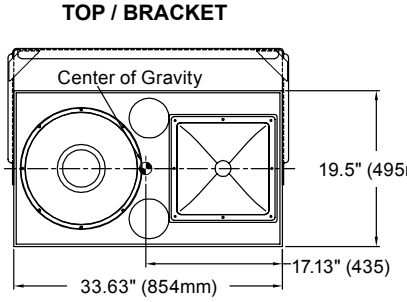
HORIZONTAL OFF-AXIS FREQUENCY RESPONSE RIGHT



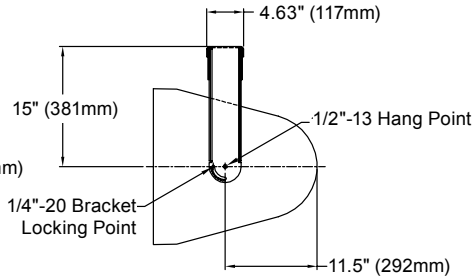
DIMENSIONS



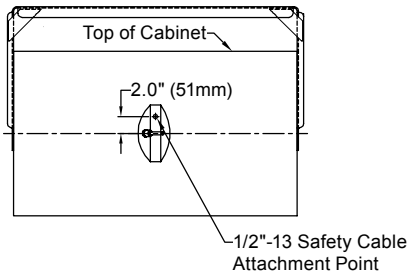
TOP / BRACKET



FRONT

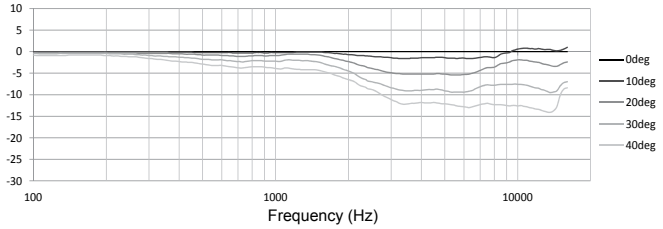


SIDES



BACK

VERTICAL UP/DOWN OFF-AXIS FREQUENCY RESPONSE



ARCHITECTURAL SPECIFICATIONS

The loudspeaker system shall be a two-way, full-range bass reflex trapezoid-shaped design with one 15 in. (381 mm) LF driver and one 1.4 in. exit HF driver with a titanium diaphragm mounted to a 60° x 40° HF fiberglass horn. Drivers shall be connected to an integral crossover with a crossover frequency of 1.5 kHz. The input connection shall be one 12' (4m) SJOW #16-gauge cable with stripped ends. The loudspeaker enclosure shall be a multi-layer glass composite with a 16-gauge perforated stainless steel grille backed by open cell foam and a high density polyester mesh cloth. There shall be two 1/2"-13 rigging points. 95% of the shell interior shall be lined with wood, with 18mm 7-layer cross-laminated marine grade plywood on all interior flat surfaces. All wood shall be sealed with fiberglass resin. The system shall have a frequency response of 50 Hz to 18 kHz (-3 dB SPL), an input capability of 69V RMS, 98 dB sensitivity at 1W / 1m at 8 ohms nominal impedance. The nominal dispersion shall be 60° H x 40° V from 2 kHz to 16 kHz. The loudspeaker shall be 19.5" (495.3 mm) H x 33.63" (854.1 mm) W (front) x 20.5" (520.7 mm) deep and shall weigh 115 lbs (52.3 kg).

CAUTION: *Installation of loudspeakers should only be performed by trained and qualified personnel. It is strongly recommended that a licensed and certified professional structural engineer approve the mounting design.*

Community Professional Loudspeakers, 333 East Fifth Street, Chester, PA 19013-4511 USA
Phone (610) 876-3400 · Fax (610) 874-0190 · info@communitypro.com · www.communitypro.com

APPLICATION

DEVELOPMENT SPECIAL USE PERMIT with SITE PLAN

NA — Filing Fee

October 2, 2018 — Planning Commission Hearing

October 13, 2018 — City Council

REQUIREMENTS FOR MAILING NOTICES:

Applicants must send written notice to all abutting property owners. See detailed instructions on "Notice Requirements."

Mail certified or registered notice of hearings between _____ and _____.

Return notice materials to Department of Planning and Zoning by _____.

INSTRUCTIONS
DEVELOPMENT SPECIAL USE PERMIT WITH SITE PLAN APPLICATION

APPLICATIONS FOR DEVELOPMENT SPECIAL USE PERMIT, WITH SITE PLAN. A Development Special Use Permit, with Site Plan, for new construction in the City of Alexandria is permitted in accordance with Sections 11-400 and 11-503 (A) (5) of the Alexandria Zoning Ordinance. Such Development Site Plan, with Special Use Permit, must be approved by the Alexandria Planning Commission and City Council after public hearings. Complete all parts of the application form using black ink or type. Sign the form, and include a daytime telephone number.

FILING FEE. Applicants must submit a filing fee with the application. Consult the latest fee schedule to determine fee amount. The fee schedule can be found at www.alexandriava.gov/planning

PROPERTY OWNER NOTIFICATION. Applicants must send written notice by certified mail to all adjoining and facing property owners at least 10 days prior to the Planning Commission public hearing and not more than 30 days prior to the City Council public hearing meeting. Applicants may use the notice forms supplied with the application forms. In the event the application is deferred, notification shall be given again. The following must be submitted to the Department of Planning and Zoning no later than five days prior to the meeting: (a) a copy of the notice letter sent, (b) a copy of the list of the names and addresses of persons to whom notice was sent, (c) a certification of notice statement that notice was sent to those required, (d) a copy of the date-stamped post office receipts.

Failure to send accurate or correct notices will result in deferral of the application to a later hearing date. Property ownership information is to be obtained from the City Office of Real Estate Assessments, Room 2600, City Hall, 301 King Street.

STAFF REPORT. A staff report and recommendation will be prepared and made available in the Department of Planning and Zoning office. The report is typically available 11 days prior to the PC public hearing.

For assistance with any of these procedures,
please call the Department of Planning & Zoning at 703.746.4666

APPLICATION

DEVELOPMENT SPECIAL USE PERMIT with SITE PLAN

DSUP # _____ **Project Name:** TC Williams HS - Parker Gray Stadium Renovation

PROPERTY LOCATION: 3330 King Street, Alexandria, VA 22302

TAX MAP REFERENCE: 032.04-09-08 **ZONE:** R 20

APPLICANT:

Name: Alexandria City Public Schools

Address: 1340 Braddock Place, Alexandria, VA 22314

PROPERTY OWNER:

Name: The Alexandria School Board

Address: 1340 Braddock Place, Alexandria, VA 22314

SUMMARY OF PROPOSAL ACPS is requesting approval of a Development Special Use Permit with which to renovate the existing Parker Gray Stadium and add stadium lighting.

MODIFICATIONS REQUESTED Modification to DSUP 2002-0044 to allow stadium lighting.

SUP's REQUESTED Amendment to Zoning Ordinance to allow field lights above 60 feet.

[ ] **THE UNDERSIGNED** hereby applies for Development Site Plan with Special Use Permit approval in accordance with the provisions of Section 11-400 of the Zoning Ordinance of the City of Alexandria, Virginia.

[ ] **THE UNDERSIGNED**, having obtained permission from the property owner, hereby grants permission to the City of Alexandria to post placard notice on the property for which this application is requested, pursuant to Article XI, Section 11-301 (B) of the 1992 Zoning Ordinance of the City of Alexandria, Virginia.

[ ] **THE UNDERSIGNED** also attests that all of the information herein provided and specifically including all surveys, drawings, etc., required of the applicant are true, correct and accurate to the best of his/her knowledge and belief.

Alexandria City Public Schools
Print Name of Applicant or Agent

1340 Braddock Place, Alexandria
Mailing/Street Address

Alexandria, VA 22314
City and State Zip Code

Signature

(703) 619-8038 (703) 619-8987
Telephone # Fax #

john.finnigan@acps.k12.va.us
Email address

7/17/18
Date

DO NOT WRITE IN THIS SPACE - OFFICE USE ONLY

Application Received: _____ Received Plans for Completeness: _____

Fee Paid and Date: _____ Received Plans for Preliminary: _____

ACTION - PLANNING COMMISSION: _____

ACTION - CITY COUNCIL: _____

Development SUP # _____

ALL APPLICANTS MUST COMPLETE THIS FORM.

Supplemental forms are required for child care facilities, restaurants, automobile oriented uses and freestanding signs requiring special use permit approval.

1. The applicant is: (check one)
   [X] the Owner [ ] Contract Purchaser [ ] Lessee or [ ] Other: _____ of the subject property.

State the name, address and percent of ownership of any person or entity owning an interest in the applicant, unless the entity is a corporation or partnership in which case identify each owner of more than three percent.

NA

If property owner or applicant is being represented by an authorized agent, such as an attorney, realtor, or other person for which there is some form of compensation, does this agent or the business in which the agent is employed have a business license to operate in the City of Alexandria, Virginia?

[ ] Yes. Provide proof of current City business license.
[X] No. The agent shall obtain a business license prior to filing application, if required by the City Code.

OWNERSHIP AND DISCLOSURE STATEMENT

Use additional sheets if necessary

1. Applicant. State the name, address and percent of ownership of any person or entity owning an interest in the applicant, unless the entity is a corporation or partnership, in which case identify each owner of more than three percent. The term ownership interest shall include any legal or equitable interest held at the time of the application in the real property which is the subject of the application.

Name	Address	Percent of Ownership
1. The Alexandria City School Board	1340 Braddock Place, Suite 610, Alexandria, VA 22314	100%
2.		
3.		

2. Property. State the name, address and percent of ownership of any person or entity owning an interest in the property located at _____(address), unless the entity is a corporation or partnership, in which case identify each owner of more than three percent. The term ownership interest shall include any legal or equitable interest held at the time of the application in the real property which is the subject of the application.

Name	Address	Percent of Ownership
1.		
2.		
3.		

3. BusinessorFinancialRelationships. Each person or entity listed above (1 and 2), with an ownership interest in the applicant or in the subject property is required to disclose any business or financial relationship, as defined by Section 11-350 of the Zoning Ordinance, existing at the time of this application, or within the12-month period prior to the submission of this application with any member of the Alexandria City Council, Planning Commission, Board of Zoning Appeals or either Boards of Architectural Review.

Name of person or entity	Relationship as defined by Section 11-350 of the Zoning Ordinance	Member of the Approving Body (i.e. City Council, Planning Commission, etc.)
1.		
2.		
3.		

NOTE: Business or financial relationships of the type described in Sec. 11-350 that arise after the filing of this application and before each public hearing must be disclosed prior to the public hearings.

As the applicant or the applicant's authorized agent, I hereby attest to the best of my ability that the information provided above is true and correct.

Date	Printed Name	Signature

Development SUP # _____

2. Narrative description. The applicant shall describe below the nature of the request in detail so that the Planning Commission and City Council can understand the nature of the operation and the use, including such items as the nature of the activity, the number and type of patrons, the number of employees, the hours, how parking is to be provided for employees and patrons, and whether the use will generate any noise. If not appropriate to the request, delete pages 6-9. (Attach additional sheets if necessary.)

The Alexandria City School Board ("ACSB") is requesting approval to demolish the existing track, synthetic turf field, press box and concession buildings at TC Williams Parker Gray Stadium at the rear of 3330 King Street to permit the renovation of the stadium. The renovation will include a new rubberized track with an 8th lane, a new synthetic turf field, new press box, new concession and restroom buildings. The renovation will also incorporate a new plaza area, a new ticket booth, relocated scoreboard and field lighting.

A high school is required to have 1 space per 10 students of design capacity (250 spaces). 428 spaces were recommended by a parking study. TC Williams currently has 444 parking spaces.

The required approvals are a Development Special Use Permit and modification to DSUP 2002-0044 to allow stadium lighting and an amendment to the Zoning Ordinance to allow the height of the light poles to be over 60 feet.

Development SUP # _____

3. How many patrons, clients, pupils and other such users do you expect? Specify time period (i.e., day, hour, or shift).

Patron / student numbers will vary depending on the activity / sport. Football games (possibly about 8 night games per year) typically bring in the largest numbers by far across uses and has a capacity near 500 patrons. Gym class during school hours. Practices after school.

4. How many employees, staff and other personnel do you expect? Specify time period (i.e. day, hour, or shift).

No additional staff are anticipated.

5. Describe the proposed hours and days of operation of the proposed use:

Day	Hours	Day	Hours
(M-Th)	7:30AM - 10PM		
(Friday)	7:30AM - 10PM or		30 minutes after game
(Sat)	8:00AM - 10PM or		30 minutes after game
(Sun)	8:00AM - 9PM		

NOTE: Proposed hours and days of operation are still being developed with community meetings.

6. Describe any potential noise emanating from the proposed use:

A. Describe the noise levels anticipated from all mechanical equipment and patrons.

Standard school stadium activity noise including field / game noise, spectator noise, band noise (certain games) and loudspeaker noise (certain games / events - will meet ordinance).

B. How will the noise from patrons be controlled?

Noise will be controlled by hours of operation and allowed uses.

7. Describe any potential odors emanating from the proposed use and plans to control them:

NA

Development SUP # _____

8. Provide information regarding trash and litter generated by the use:

A. What type of trash and garbage will be generated by the use?
Paper and food trash are expected.

B. How much trash and garbage will be generated by the use?
Average for a school with high school stadium with a seating capacity of around 1,000.

C. How often will trash be collected?
Daily by school's custodial staff and by City trash pick-up services from T&ES.

D. How will you prevent littering on the property, streets and nearby properties?
Sporting events, functions, gym class, practices, etc. will be supervised by ACPS staff.

9. Will any hazardous materials, as defined by the state or federal government, be handled, stored, or generated on the property?

[ ] Yes. [x] No.

If yes, provide the name, monthly quantity, and specific disposal method below:

10. Will any organic compounds (for example: paint, ink, lacquer thinner, or cleaning or degreasing solvent) be handled, stored, or generated on the property?

[ ] Yes. [x] No.

If yes, provide the name, monthly quantity, and specific disposal method below:

Development SUP # _____

11. What methods are proposed to ensure the safety of residents, employees and patrons?

Students / athletes / fans will be supervised by ACPS staff and security. ACPS will have staff security officers on site, patrolling the stadium to ensure the safety of patrons as well as nearby residents. Safety measures will be consistent with the ACPS safety/security standards and policies for all public school facilities. The site plan also incorporates site lighting and fencing. Security will also make patrol stops apart from sporting events as part of their routine patrolling of the school.

ALCOHOL SALES

12. Will the proposed use include the sale of beer, wine or mixed drinks?

[ ] Yes. [x] No.

If yes, describe alcohol sales below, including if the ABC license will include on-premises and/or off-premises sales. Existing uses must describe their existing alcohol sales and/or service and identify any proposed changes in that aspect of the operation.

PARKING AND ACCESS REQUIREMENTS

13. Provide information regarding the availability of off-street parking:

A. How many parking spaces are required for the proposed use pursuant to section 8-200 (A) of the zoning ordinance?

A high school is required to have 1 space per 10 students of design capacity (250 spaces). 428 spaces recommended by parking study. Currently 444 parking spaces.

B. How many parking spaces of each type are provided for the proposed use:

143 Standard spaces
290 Compact spaces
11 Handicapped accessible spaces
_____ Other

Development SUP # _____

C. Where is required parking located? (check one) [x] on-site [ ] off-site

If the required parking will be located off-site, where will it be located?

Pursuant to section 8-200 (C) of the zoning ordinance, commercial and industrial uses may provide off-site parking within 500 feet of the proposed use, provided that the off-site parking is located on land zoned for commercial or industrial uses. All other uses must provide parking on-site, except that off-street parking may be provided within 300 feet of the use with a special use permit.

D. If a reduction in the required parking is requested, pursuant to section 8-100 (A) (4) or (5) of the zoning ordinance, complete the Parking Reduction Supplemental Application.

14. Provide information regarding loading and unloading facilities for the use:

A. How many loading spaces are required for the use, per section 8-200 (B) of the zoning ordinance? None

B. How many loading spaces are available for the use? Three

C. Where are off-street loading facilities located?

Three loading spaces are available at the loading dock area on the south side of the school building.

D. During what hours of the day do you expect loading/unloading operations to occur?
Deliveries are expected to occur at the school between 7:00AM - 5:00PM.
Some small deliveries are anticipated a couple of hours prior to games / events.

E. How frequently are loading/unloading operations expected to occur, per day or per week, as appropriate?
The stadium will receive infrequent deliveries on an as needed basis prior to games / events; averaging less than once per week.

15. Is street access to the subject property adequate or are any street improvements, such as a new turning lane, necessary to minimize impacts on traffic flow?
Current street access is adequate, as is the internal roadway, bus and car drop-off loops.