

State of Hawai'i
Department of Accounting and General Services

DRAFT

**ENVIRONMENTAL ASSESSMENT FOR
WHOLE STADIUM IMPROVEMENT
ALOHA STADIUM, HONOLULU, HAWAI'I
TAX MAP KEY (1) 9-9-003:061**

Prepared for:

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LIST OF ACRONYMS

AAQS	Ambient Air Quality Standards, Clean Air Act
AQCR	Air Quality Control Region
BMP	Best Management Practices
BWS	Board of Water Supply, City and County of Honolulu
CO	Carbon Monoxide
DAGS	Department of Accounting and General Services, State of Hawaii
DBEDT	Department of Business, Economic Development, and Tourism
DLNR	Department of Land and Natural Resources, State of Hawaii
DOH	Department of Health, State of Hawaii
DPW	Department of Public Works
EA	Environmental Assessment
EPCRA	Emergency Planning and Community Right-to-Know Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FWS	Fish and Wildlife Service, U.S. Department of Interior
HAR	Hawaii Administrative Rules
HRS	Hawaii Revised Statutes
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFL	National Football League
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
OEQC	Office of Environmental Quality Control, State of Hawaii
OHA	Office of Hawaiian Affairs, State of Hawaii
PM ₁₀	Particulate Matter less than 10 microns
PUCDP	Primary Urban Center Development Plan, City & County of Honolulu
SHPD	State Historic Preservation Division
SWPPP	Storm Water Pollution Prevention Plan
TPY	Tons Per Year
UIC	Underground Injection Control
USEPA	U.S. Environmental Protection Agency
WJE	Wiss, Janney, Elstner Associates, Inc.

1.0 INTRODUCTION

The Department of Accounting and General Services (DAGS) proposes a number of improvements to Aloha Stadium, herein termed *Whole Stadium Improvement*. The proposed Whole Stadium Improvement project consists of: roof replacement; various stadium enhancement; and repairs/improvements. Alternatives to roof replacement and stadium enhancements are also considered in this Draft Environmental Assessment (EA).

The project would involve the use of State of Hawai'i funds and lands and, as a result, triggers the environmental review requirements under Chapter 343, Hawai'i Revised Statutes, known as the "Hawai'i Environmental Policy Act." The authority to determine whether an Environmental Impact Statement is required is the State of Hawai'i, Department of Accounting and General Services.

Hawai'i Environmental Policy Act was enacted by the Hawai'i State Legislature to require State and County agencies to consider the environmental impacts of various actions as part of the decision-making process. Agencies are required to conduct an investigation and evaluation of alternatives as part of the environmental impact analysis process, prior to making decisions that may impact the environment. The implementing regulations are contained in Title 11, Chapter 200, Hawai'i Administrative Rules.

1.1 Purpose and Need

The purpose of the project is to mitigate the current stadium condition to improve public safety and aesthetics and increase its useful life by at least 30 years. A condition survey was performed in 2005 by Wiss, Janney, Elstner Associates, Inc. (WJE), which found a number of deficiencies. Critical among the findings was that sections of the galvanized steel roof are in the advanced stages of corrosion, placing the safety of the public at risk due to the potential for structural failure. This situation necessitates replacement of the high roof structure.

The WJE survey also revealed other major elements of the stadium that require immediate attention or repair. These include corrosion protection systems for exposed steel elements, including the curved pedestrian bridge deflections. The survey noted water damage to the seating bowl and concourses, severely deteriorated concrete-and-metal deck, inadequate safety guardrails and passenger elevators, an inadequate fire alarm system, inadequate restrooms, and poor parking lot pavement. Repair, addition, and enhancements to these elements will improve public safety, aesthetics, and longevity of the stadium. The WJE survey also considered options to enhance the spectator attractiveness of Aloha Stadium (WJE 2005c). DAGS may choose to act upon a set of these described in Section 2.2 of this document, including the conversion of particular areas to luxury suites and club boxes. These modifications will enhance the spectator experience to a level on par with other venues of its size and hence its revenue producing potential, thereby offsetting future maintenance costs.

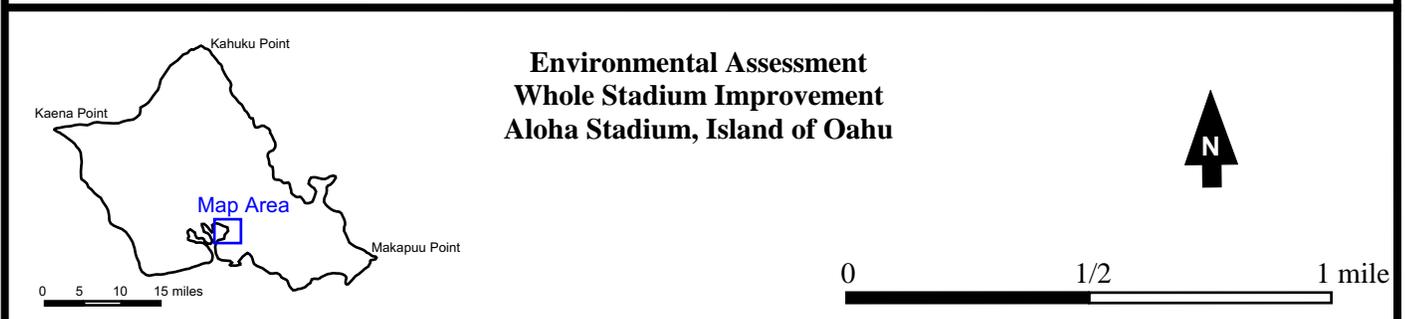
Table 1. Project Summary

Project Name:	Whole Stadium Improvement, Aloha Stadium
Proposing Agency:	Department of Accounting and General Services State of Hawai‘i P.O. Box 119, Honolulu, Hawai‘i 96810-0119 Contact: Ms. Chris Kinimaka
Consultant:	Myounghee Noh & Associates, L.L.C. 99-1046 Iwaena Street, 210A, Aiea, Hawai‘i 96701 Contact: Ms. Myounghee Noh
Project Description:	Roof replacement; Stadium Enhancement (addition of suites and amenities); Other Improvements (signage, seating, repairs, recoating, ADA improvements)
Project Location:	99-500 Salt Lake Boulevard, Honolulu, Hawai‘i (Figure 1)
Tax Map Key:	(1) 9-9-003:061 (87.879 acres)
Existing Use:	Sports events, music festivals, swap meets, auto shows, and carnivals
Land Ownership:	State of Hawai‘i
State Land Use Designation:	Urban
City & County Zoning:	R-5 Residential
Community / Development Plan:	Institutional
Special Management Area:	None
Historic Sites Present:	None
Anticipated Determination:	Finding of No Significant Impact (FONSI)
Consulted Parties During Pre-Assessment:	<p><u>Federal Agencies</u> Department of Agriculture, Natural Resources Conservation Services Regulatory Branch, Department of the Army, U.S. Army Engineer District, Honolulu Department of Interior, Fish and Wildlife Service, Pacific Islands Ecoregion Department of Interior, Water Resources Division, U.S. Geological Survey Department of Transportation, Federal Highway Administration, Hawaii Division U.S. Federal Aviation Administration</p> <p><u>State Agencies</u> Department of Accounting and General Services Aloha Stadium Department of Agriculture</p>

<p>Consulted Parties During Pre- Assessment (cont'd):</p>	<p>Department of Business, Economic Development, and Tourism (DBEDT) Department of Hawaiian Home Lands, Planning Office Department of Health, Environmental Planning Office Department of Land and Natural Resources, Land Division, Oahu District Branch Department of Land and Natural Resources, State Historic Preservation Division Department of Transportation Office of Planning, DBEDT Land Use Commission, DBEDT Office of Hawaiian Affairs</p> <p><u>City & County Agencies</u> Board of Water Supply Department of Community Services Department of Design and Construction Department of Environmental Services Department of Facility Maintenance Department of Parks and Recreation Department of Planning and Permitting Department of Transportation Services Fire Department Police Department</p> <p><u>Others</u> Aiea Library Aiea Neighborhood Board Hawaiian Electric Company Centerplate (swap meet and vendors)</p>
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Figure 1. Site Location



**Environmental Assessment
Whole Stadium Improvement
Aloha Stadium, Island of Oahu**



0 1/2 1 mile

1.2 Project Background

Aloha Stadium (project site) is the sole venue of its size in the State of Hawai‘i. Seating 50,000 people with 424 wheelchair seats on the lower level, Aloha Stadium supports many events, including University of Hawai‘i Football, the National Football League’s Pro Bowl, the NCAA’s Hula Bowl, music concerts, swap meets, auto shows, and carnivals (State of Hawai‘i 2007). It is owned by the State of Hawai‘i and is managed by State of Hawai‘i DAGS and Stadium Authority. Aloha Stadium occupies a lot of 87.879 acres. Aloha Stadium was designed by Charles Luckman Associates and was built by Hawaiian Dredging and Construction Company, opened in 1975, and was the first of its kind anywhere in the world when it was built, because of its ability to change configurations to accommodate different sporting events (Hawai‘i Stadium Authority 1975).

The entirety of each of the four moveable seating sections and the tier seating areas of the stationary seating sections are constructed with structural steel, in particular, a weathering type of structural steel. This steel was purported to be resistant to corrosion after an initial, dense, stable rust layer develops on the surface. This dense, stable layer of rust is often called a “protective patina” in the technical and marketing literature for this type of steel. However, it was later discovered that weathering steel is sensitive to salt-laden air environments. In such environments, the protective patina does not stabilize but instead continues to corrode. The weathering steel at Aloha Stadium therefore has required remedial attention. Extensive surface preparation, an application of a protective coating system, and replacement in kind of major portions of the stadium were performed to address the corrosion problems. The corrosion abatement project commenced in about 1985 and was completed in 1995 with a cost of \$80 million (WJE 2005a).

Aloha Stadium Planning Study Final Report

In 2005, DAGS commissioned a planning study to assist the State of Hawai‘i in the development of a long-range plan for the future of Aloha Stadium, with particular attention on weighing the option of renovations to extend the Stadium’s useful life versus the option of replacement with a new stadium. This planning study included the following components:

- Structural condition survey, focusing on the protective coatings system
- Architectural condition survey, examining features throughout the stadium
- Stadium enhancement and stadium replacement conceptual options
- Financial analyses, including estimating of costs for various options

Wiss, Janney, Elstner Associates, Inc. (WJE), HOK Sport, Barrett Sports Group, Architects Hawai‘i, PCL Construction Group, and Continental Mechanical performed this study, completed in 2005.

WJE identified a number of deficiencies with varying degrees of urgency, importance, and cost, and recommended items requiring immediate attention, including the following (WJE 2005b):

- Corrosion protection systems for exposed steel elements are overdue for major maintenance throughout the stadium largely due to the fact that the weathering steel did not perform as per the original design intent. Significant corrosion has occurred above and beyond the protective patina layer formation. These systems are in need of immediate repair to avert recurrence of serious structural damage.
- The curved pedestrian bridges suffer from excessive deflections due to pedestrian loading. Preliminary structural analyses to determine the significance of these deflections indicate overstresses on the order of 20% to 30% when evaluated to building code standards. The deflections and overstress should be immediately addressed.
- Entire main roof canopy metal deck is in need of replacement. Serious localized deterioration is evident. Temporary stabilization and spot repair at local damage is warranted until replacement occurs.
- Waterproofing membrane for seating bowl and concourses is in need of immediate replacement to reduce water damage into occupied areas below and to prevent corrosion of structural elements.
- Seating needs replacement throughout the entire stadium seating bowl.
- Scoreboard cooling system is undersized and needs to be replaced to maintain functionality of scoreboard.
- Piping insulation and other water damaged finishes at the event level, primarily in the locker rooms, need replacement.

WJE also identified a number of additional items requiring attention to protect public safety and also address non-compliant code conditions, as well as to avoid escalating maintenance costs including (WJE 2005b):

- Additional toilets are needed to meet current code requirements and stadium design “best practices.” Women’s toilets are currently severely under serviced.
- The concrete-and-metal deck at the upper and lower concourses is severely deteriorated at numerous areas throughout the stadium. Localized repairs or replacement are needed at these deteriorated areas.
- Guardrails need to be raised in numerous locations to meet current code requirements and provide a safer environment. Most obvious deficiencies are open stairs connecting loge level (press box level) to the upper concourse and bowl rails in front of aisles. Additional stiffening of bowl and concourse guardrails is also recommended to address the public’s negative safety perception regarding structural safety/stability.

- Passenger elevators do not exist and should be added to provide access to all levels for disabled patrons to comply with current ADA provisions and, secondarily, to better accommodate the elderly.
- The asphalt parking lot is primarily original paving with extensive cracking. It needs resurfacing to avoid further deterioration leading to more expensive future repairs or total replacement.
- The field lighting and its associated transformers and lighting control system are nearing their useful life and experiencing operational difficulties.
- The fire alarm system should to be upgraded to meet current life safety and ADA requirements.

WJE concluded that the useful life of Aloha Stadium can be preserved and extended substantially if the necessary remedial measures are implemented over the course of its immediate and long term future. In addition to maintaining the status quo of Aloha Stadium, WJE also recommended modifying the existing stadium to enhance the game day experience for fans and increase revenues, including (WJE 2005a):

- Eliminate baseball events and lock the stadium into its football configuration. Not only to avoid approximately \$10 million in transport replacement costs, but also this configuration is typically more appealing to other events such as soccer and concerts and will allow enhancements that will potentially increase revenues and enhance game day experience.

Aloha Stadium Roof Deck Replacement Final Assessment Report

In 2007, SSFM International, Inc., assessed various options for roof replacement as follows:

- No roof deck
- Replace roof deck with non-structural material, polycarbonate and tensile fabric membrane
- Replace roof deck with structural material, aluminum and stainless steel

While the no-roof option was the most financially feasible, it was not considered due to its “incomplete” appearance. Further, the “no roof deck” option included entire removal of the roof structural framing and evaluating alternate locations for the speakers and lights.

The replacement of roof with polycarbonate, tensile fabric membrane, or galvanized steel was eliminated as these were non-viable options (higher costs); the use of aluminum was considered since it is currently in use at the stadium, most economical, and signs of corrosion are minimal compared to the galvanized steel portions. Color renderings of roof and interior and exterior bracings are provided in Appendix A. This may present the

best opportunity to change the present “rust bucket” brown stadium color to a more attractive color, such as green.

1.3 Proposing Agency and Approving Agency

The State of Hawai‘i Department of Accounting and General Services (DAGS) serves as the Proposing Agency for this project. Myounghee Noh & Associates serves as consultant for this EA.

1.4 Land Use Classifications and Designations

Under Chapter 205, Hawaii Revised Statutes (HRS), all lands in the State of Hawai‘i are classified into four major land use districts (State Land Use Districts) which are the Urban, Rural, Agricultural, and Conservation districts (State of Hawai‘i 2000). The boundaries of these districts are shown on maps referred to as State Land Use District Boundary Maps. On the Island of Oahu, lands are predominantly designated as Urban, Agricultural, or Conservation districts. For each land use district classifications, there are defined uses or activities permitted which are described under 205-2 HRS, and regulated by the State Land Use Commission (Figure 2).

The State Land Use District for Aloha Stadium is Urban; City Zoning is R-5 Residential. The City Zoning for the neighboring parcels are: largely R-5 Residential to the east, north, west and southwest; a small P-2 General Preservation District area to the north; F-1 Federal and Military Preservation District to the west along the Aiea Bay shore; B-1 Neighborhood Business District (Kmart and Sack-N-Save Foods area) and B-2 Community Business District to the south (Ice Palace area); A-1 Low Density Apartment District to the southeast (Figure 3).

Aloha Stadium is in the “Primary Urban Center” planning region, a large and diverse mix of neighborhoods, businesses, industries, health & education centers, extending from the downtown Honolulu to Pearl City to the west and Waiialae-Kahala to the east. The local landmark is not located in a Special Management Area. According to the Community Development Plan for the Primary Urban Center, the stadium parcel is designated as institutional (Figure 4). The subject property occupies 87.879 acres (3,828,009 square feet), and the property class is Apartment (Honolulu Property Tax 2007).

1.5 Public and Government Agency Involvement

All persons and organizations with potential interest in the proposed project are encouraged to participate in the planning process. This Draft EA is circulated for a 30-day public comment period, which commences once notice is published in the Office of Environmental Quality Control’s *Environmental Notice*. Following the public review, comments will be evaluated, responded to, and incorporated where appropriate into the Final EA. If it is determined that the project will not have significant impacts, the State of Hawai‘i DAGS will issue a Finding of No Significant Impact (FONSI).



Figure 2. State Land Use Districts

- | | | | |
|---|--------------|---|---|
|  | Agriculture |  | Urban |
|  | Conservation |  | Rural (No occurrence in vicinity shown) |



Data Source: State Land Use Commission, 2006



City Zones

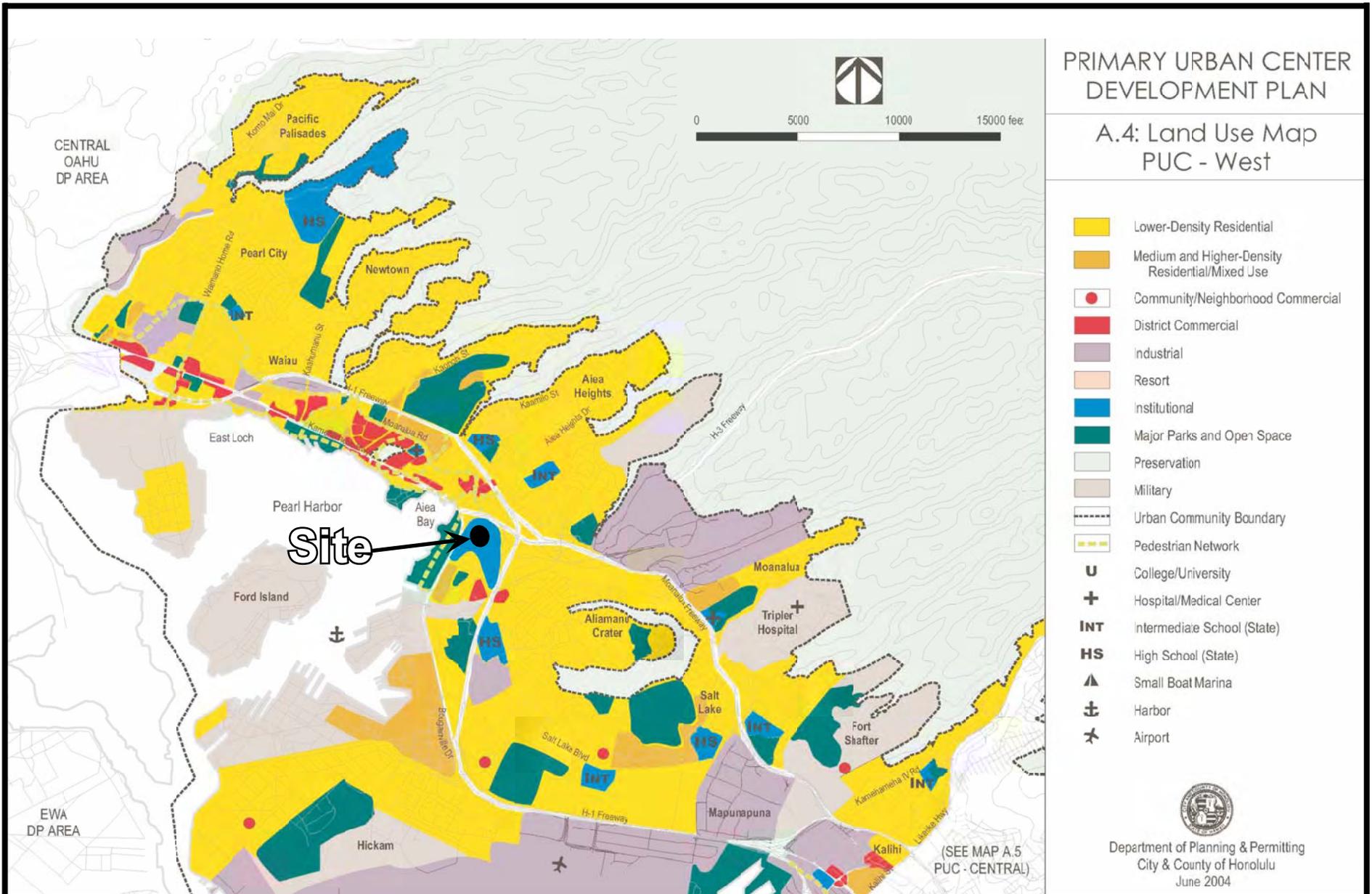
- A-1 Apartment
- A-2 Apartment
- B-1 Neighborhood Business
- B-2 Community Business
- F-1 Military and Federal

Figure 3. City Zoning map

- I-2 Intensive
- P-2 General
- R-3.5 Residential
- R-5 Residential
- R-7.5 Residential



Data Source: Honolulu Land Information System, 2006



Source: <http://honoluluodpp.org/planning/Puc/PucWest.pdf>

Figure 4. Primary Urban Center Development Plan

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Aloha Stadium, Island of Oahu**



2.0 PROJECT DESCRIPTION

2.1 Project Location and Vicinity



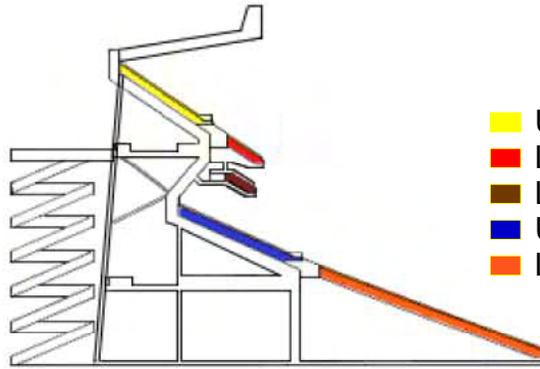
Figure 5. A Front View of Aloha Stadium Facing North

Aloha Stadium is located on the central portion of the Island of Oahu in the Salt Lake District at 99-500 Salt Lake Boulevard, Honolulu (Figure 6). Aloha Stadium is located approximately 35 feet above mean sea level, about 0.25 miles from the Aiea Bay portion of Pearl Harbor, the nearest large water body. The Stadium exists near large residential subdivisions and is also located adjacent to the largest highway interchange in the State of Hawai'i, the Halawa Interchange, where H-1, H-3, H201/78 (Moanalua Freeway) and other roadways meet, such as 99 (Kamehameha Highway). H-1 runs past the stadium to the mauka side, stretching from the Honolulu Airport direction (south) to the Ewa direction (west). Kamehameha Highway follows the shoreline west of the stadium. Figure 6 shows the project site location and its vicinity.

The facility contains 50,000 seats primarily for the viewing of athletic events. The field-level seating at the two stationary seating sections is supported by a reinforced concrete structure. The four moveable seating sections and the tier seating of the stationary sections are depicted in Figure 7.



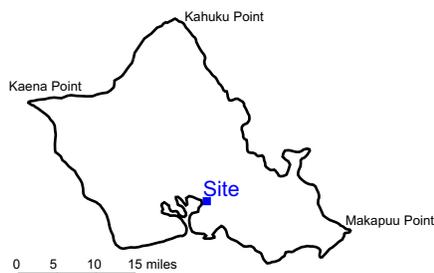
Figure 6. Vicinity Map



- Upper Grandstand
- Lower Grandstand
- Loge - Press Box Level
- Upper Field
- Lower Field



Figure 7. Aloha Stadium Tier Seatings & Football Configuration



**Environmental Assessment
Whole Stadium Improvement
Aloha Stadium, Island of Oahu**



**Myounghee Noh &
Associates, L.L.C.**

2.2 PROPOSED ACTION

The following proposed improvement options are the results of a needs-assessment performed as part of the 2005 WJE survey.

2.2.1 Roof Replacement

This “replace in-kind” option would address the immediate concerns with the corroded components of roof, identified in the WJE’s 2005 conditions survey (WJE 2005b). This option would keep the existing steel structural frame and replace the existing metal deck panels and gutters, including the metal decking enclosing the light enclosure, with a baked fluorocarbon finished aluminum deck. The aluminum deck would appear identical to the existing roof (SSFM International 2007). Furthermore, this may be an opportunity to change the present “rust bucket” brown stadium color to a different color, such as green (Appendix A).

The corroded surfaces of the existing steel frames which support the roof and the light canopy will be surface-cleaned and recoated. The aluminum roof panels will be coated with a high performance coating to prevent galvanic corrosion and to match the existing or the new color. There will be no major changes to the lighting configurations and sound system (SSFM International 2007).

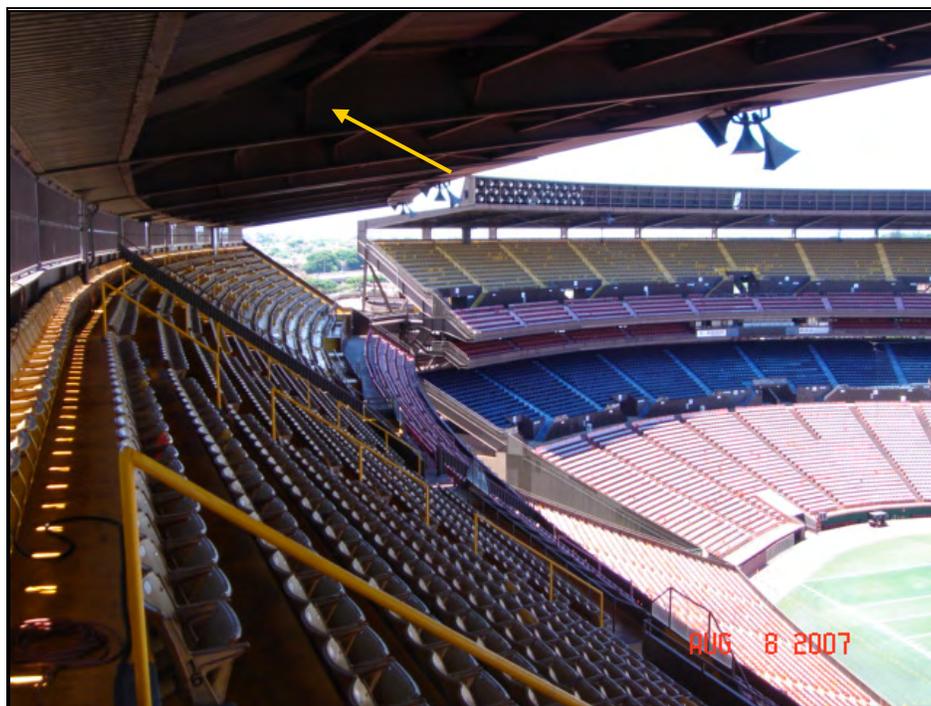


Figure 8. A View of the Roof Recommended to be Replaced (arrow)

2.2.2 Stadium Enhancement Options

Lower Bowl Fifty Yardline Suite Addition

This option adds a total of 12 suites between the two sideline main stairs at the back of the lower bowl. Approximately 308 existing seats at the back of the upper bowl would be eliminated to accommodate a new raised floor that provides unobstructed views for suite patrons. Exclusive access would be provided to the suites via new passenger elevators that would serve the exterior suite corridor as well as providing disabled access to the other seating levels.

The suites feature two rows of upgraded 24 inch-wide padded stadium chairs with one row of bar stools behind a drink rail, private toilets, refrigerator, ice maker, and counter space for serving catered food and beverages. A hospitality area would include lounge seating. Four suites would hold 18 stadium seats and 9 barstools, four sites would hold 18 stadium seats and 8 barstools, while four smaller suites would hold 6 stadium seats and 3 barstools.

The midfield location of the suites is optimum, and the distance from the field is very favorable. The upper bowl would provide constant shade without restricting views. The clearance under the cantilevered overhang is greater than many new National Football League (NFL) stadiums allowing good sightlines to the field and play action. Suite fronts would be open to the seating bowl during events to maintain connection to the action while cool conditioned air could be provided to further enhance the suite environment. Television monitors would be added at the underside of the bowl to allow viewing of replays due to the limited views of the video boards from the suites, which is a common condition in many modern stadiums.

Sideline Club Lounge and Amenities Addition

The Loge Level (press box level) is perceived and ticketed as Aloha Stadium's premium level. However, no permanent concessions or toilets are located on this level. Loge patrons must squeeze through a narrow cross aisle that is further congested with concession carts to access stairways to the upper concourse to access amenities. This premium seating condition is significantly substandard compared to most major collegiate and NFL stadiums today (WJE 2005c).

This option would address this deficiency on the sideline by extending the cross aisle towards the stadium's exterior while working within the constraints of the stadium's existing diagonal structural frame. The current condition of the press box appears that the existing structural frame could support the added floor loading with little to no supplemental support (WJE 2005c).

This option incorporates several features that improve the amenity package for sideline club patrons, thus adding value to their tickets. First, as part of the seat replacement program, padded seats with cup holders replace the existing seats while maintaining their

quantity. Television monitors would be hung from the seating deck above to broadcast video replays. Upgraded toilets and concession stands would be added at lower ratios, allowing fewer people utilizing each fixture or point of sale. Enclosed lounge areas with tables, chairs, and lounge seating would provide an upscale hospitality area in an air conditioned environment that is more consistent with current standards for club patrons.

South Endzone Baseball Press Box Super Suite Conversion

This option would convert the existing baseball press box into a super suite. It currently is used for this purpose in an ad hoc and less efficient manner during the NFL Pro Bowl. The conversion would result in a unique upscale environment for approximately 270 premium seats. It is anticipated that tickets would be sold to small and large groups on both a season and game by game basis. This flexibility would offer stadium users a variety of ticketing options from which to choose. The hospitality area includes upscale toilets and lounge seating. It features a bar area serving food and drinks. Access would be provided via new passenger elevators implemented with other recommended stadium improvements.

Loge Level Corner and Sideline Clubs Addition

This option would infill each corner with an enclosed club lounge featuring indoor club seats behind operable glazing and an expanded upper concourse party deck with outdoor general admission seats. The enclosed club lounge features upscale concession service and a bar area along upgraded toilets arranged around an open and flexible hospitality space. The hospitality area would be designed to host meetings and other events on non game days and would take advantage of the views to the playing field and surrounding environment. If desired, the club seats could be located outside the conditioned enclosure as a continuation of the existing loge seating.

By spreading the cost burden of the enhancements across the entire loge level population, the loge level corner club addition would become more economically feasible. The greater impact of implementing both options will also provide an opportunity to remake the image of the loge level, thus generating more appeal for sponsorship and advertising.

2.2.3 Other Improvement Options

Other improvement options would include a large variety of other actions as follows:

Improvement of internal and external signage. Various signage, including parking, entrance/exit, and gate signs, and their support frames were found to be rusted, stained, and/or in inconsistent image. Regular scheduled maintenance for signs and support structures and uniforming all signs was recommended (WJE 2005b; 9-16).

Replacement of seating. In addition to poor conditions of the coating system on treads and risers, worn-out paint on seats, corrosion of seat standards (supporting bases), and/or loss of spring action of seats was observed. Replacement and repairs of the seating throughout the stadium were recommended (WJE 2005b: 32-35, 42, 44, 47).

Replacement or repair of corroded drainpipes, plumbing and HVAC insulation. Various drain pipes and plumbing lines showed signs of corrosion and accumulation of debris (WJE 2005b, pp. 36-37, 42, 46-47). Surface repairs, replacement of drain bodies, and cleanup of trash and debris from existing drains was recommended. The fiberglass insulation on hot/chilled water and condensate drains throughout the stadium showed water stains along with visible mold and mildew. Replacement of insulation for the chilled water pipes, condensate drains, and hot water pipes was recommended (WJE 2005b: 98).

Repair cracks in concrete slab. The 1995 survey revealed areas of concrete slabs and elements with signs of leakage, shear crack, delaminated surface, and/or spalling. These areas of deterioration included previous repair patches and sealants that have since failed. Repairs of cracks, spalling, delaminated surface, and/or failed sealant repairs were recommended (WJE 2005b: Part II 9-10, 39)

Structural and nonstructural repairs and coatings. Deteriorated coating systems were observed on the structural members, the primary raker girders, including lower elbows, support columns, transverse beams, and plate girders at the rear of the seating section, and stairwells. Large-scale sandblasting/painting or localized paint repairs were recommended (WJE 2005b: Part II 30-31, 33, 35, 39, 42, 46, 70, 81).

Bridge stiffening. The bridges were reported to be sensitive to pedestrian induced vibrations and deflections. The deflection seemed exaggerated by the nature of two curved girders of unequal lengths. In 1993, stiffening measures to control deflection were installed, but these were subsequently removed after the hydraulic lifting system could not support the additional weight of the stiffening elements. Further analysis, including the effects of lateral flange bending, and at least temporary stabilization of the bridges was recommended (WJE 2005b: Part II 73, Part III 11-12).

Recoating of stair railings and correct heights. Deteriorated coating conditions and inadequate (some did not meet the guardrail code requirements) height and length of stair railings were found during the 2005 survey. Recoating of railing and correction of the railing height and length was recommended (WJE 2005b: 43-44, 83).

Resurfacing of walkways and stairs. Failure of the coating system was reported as the biggest issue on walkways and stairs. Chipped or damaged coating system was also observed in a few isolated locations. Removal of the existing coating system and replacing with an elastomeric waterproof traffic coating system throughout the stadium was recommended (WJE 2005b: 42, 54, 81).

Addition of elevators. While the existing elevators are in good working order, the use of the two freight elevators by passengers on game day does not project a positive image for passenger use. Addition of one bank of two passenger elevators to each quadrant serving the Loge Level at a minimum and, preferably, the Main and Upper Concourses for disabled patrons and premium seating patron access was recommended (WJE 2005b: 86).

ADA improvements. The current seating space, circulation/access ways, ticket windows, and Main Box Office windows do not meet the ADA requirements. Additional ADA seating at box seating areas and various improvements were recommended. Minor improvements, such as adding additional railings and signage which could help some of the current conditions, were recommended (WJE 2005b: 94-96).

Parking lot improvements. Various asphalt cracks, peeling paint, and inadequate level of vehicle intrusion protection (concrete bollards) were observed. Improvements recommended were, but not limited to: resurfacing of pavement; regularly scheduled maintenance for parking overhangs, parking lot entrance buildings, and light poles; repainting, refurbishment, or addition of vehicle intrusion bollards or concrete planters; larger concrete bollards at entry points (WJE 2005b: 6-9, 17-19, 22-23).

Recoating of utilities and other nonstructural steel components. Throughout the stadium, localized failures in the coating system were reported. Some plumbing pipes showed signs of exterior rusting (WJE 2005b: 100), and many fire sprinkler heads were seen with paint on them (WJE 2005b: 101). Additionally, corrosion of stainless steel screw fasteners used with aluminum roof panels was observed, and at some locations, the fasteners had fractured due to corrosion. The 2005 report noted that, while there are risks associated with overcoating, further delay of maintenance painting could result in greater difficulty, time, and expense to remediate as the coating system continues to deteriorate further (WJE 2005b: Part II 16).

Miscellaneous improvements on light fixtures, water fountains, concession stands, seating aisles, concourses, toilets, other items.

2.3 ESTIMATED COSTS

Shown in Table 2 is a summary of costs that has been developed for the various options and assumes a favorable market climate and sufficient competition in the solicitation process (note that these costs are for comparison purposes).

Table 2. Summary of Costs

Roof Demolition and Replacement	2005 dollars	2007 dollars* (1.061659)
Demolish Roof	\$764,000	\$811,107
No Action	\$5,000,000	\$5,308,295
Other no-roof options		
Poles in the empty corner wedges	\$11,000,000	\$11,678,249
Suspended catwalk	\$20,000,000	\$21,233,180
High poles behind stands	\$13,000,000	\$13,801,567
Replace with Structural Material		
Aluminum	\$8,000,000	\$8,493,272
Stainless Steel	\$9,000,000	\$9,554,931
Replace with Non-Structural Material		
Polycarbonate	\$12,000,000	\$12,739,908
Tensile Fabric Membrane	\$15,000,000	\$15,924,885
Stadium Enhancements		
Lower Bowl Fifty Yardline Suite Addition	\$1,750,000	\$1,857,903
Sideline Club Lounge and Amenities Addition	\$4,000,000	\$4,246,636
South Endzone Baseball Press Box Super Suite Conversion	\$325,000	\$345,039
Loge Level Corner and Sideline Clubs Addition	\$18,000,000	\$19,109,862
Other Improvement Options		
Internal and external signage	\$220,000	\$233,565
Replacement of seating	\$5,000,000	\$5,308,295
Replacement/repair corroded drainpipes, plumbing, & HVAC insulation	\$972,600	\$1,032,570
Repair cracks in concrete slab	\$451,250	\$479,074
Structural and nonstructural repairs and coatings	\$27,462,640	\$29,155,959
Bridge stiffening	\$1,384,000	\$1,469,336
Recoating of stair railings and correct heights	\$312,000	\$331,238
Resurfacing of walkways and stairs	\$12,777,000	\$13,564,817
Addition of elevators	\$2,000,000	\$2,123,318
ADA improvements	\$140,000	\$148,632
Parking lot improvements	\$9,240,120	\$9,809,857
Recoating utilities & other nonstructural steel components	\$8,500,000	\$9,024,102
Misc. improvements (light fixtures, water fountains, concession stands, seating aisles, concourses, toilets, etc.)	\$12,208,750	\$12,961,529

*Consumer Price Index inflation calculator <<http://stats.bls.gov/cpi/>>

2.4 ALTERNATIVES

2.4.1 No Action Alternative

The No Action alternative represents a base-line condition against which the proposed project is evaluated. Under this alternative, the proposed roof improvements and stadium enhancements would not occur, and the stadium would remain in its current condition.

The WJE survey found inadequacies that may present safety hazards, including (WJE 2005b):

- Exposed steel elements are “overdue for major maintenance throughout the stadium. These systems are in need of immediate repair to avert recurrence of serious structural damage.”
- “The curved pedestrian bridges suffer from excessive deflections due to pedestrian loading.” These deflections are in excess of building code standards.
- Waterproofing membranes are in need of repair, and water intrusion may have allowed corrosion of structural elements.
- Guardrails do not meet code requirements and may present safety hazards.

DAGS therefore considers the No Action Alternative to be highly undesirable because it may result in unacceptable hazards to public safety, possibly preventing use of the facility in the future, and would require more costly repairs in the future. These safety elements present the greatest material reason DAGS finds the No Action Alternative unacceptable. However, the WJE survey also identified a wealth of other inadequacies that, taken as a whole, describe Aloha Stadium as in dire need of either improvement or replacement.

2.4.2 New Stadium Alternative

A New Stadium Alternative was evaluated by WJE to compare Aloha Stadium’s initial and 20 year maintenance program costs against the proposed necessary initial repairs/improvements and 20 year maintenance program costs for the existing stadium. Although a detailed revenue analysis was not conducted, a high-level financial analysis comparing the new stadium option against the capital improvement of the existing stadium was performed. Potential enhancements to Aloha Stadium were not factored into the cost comparison because they are assumed to be self-funded through their associated increased revenues.

A critical study assumption is the use of the existing site to build a replacement stadium. This assumption was made after determination that it is feasible to construct a new stadium on the site while maintaining the operation of Aloha Stadium. The thrice weekly swap meet could also continue by utilizing a different event layout. This approach reduces the number of variables factored into the comparison and results in significant reductions in cost and other challenges associated with the acquisition of a now unidentified parcel and development in or near Honolulu.

For purposes of this study, a new stadium was assumed to consist of 50,000 total seats, 20 private suites and 2,500 club seats with associated premium lounge space. The type of construction is assumed to be of more durable, longer lasting materials and building systems than the existing stadium and other recently built, but smaller collegiate stadiums. The estimated costs for demolition of the existing Aloha Stadium and for parking replacement are included in the anticipated cost range for a new stadium. The cost figures include a 20% soft cost component, 5% less than the renovation options (WJE 2005a). The range of costs is shown in Table 3:

Table 3. New Stadium Project Cost

Range of Total Project Cost	2005 dollars (WJE 2005a)	2007 dollars* (1.061659)
Low	\$225,000,000	\$238,873,275
Middle	\$252,500,000	\$268,068,898
High	\$280,000,000	\$297,264,520

*Consumer Price Index inflation calculator <<http://stats.bls.gov/cpi/>>

The table below illustrates an estimate of the present (2005) dollar value comparison of the initial Aloha Stadium capital improvement program cost with the mid range cost of a new stadium and their respective 20 year maintenance costs.

Table 4. New Stadium vs. Existing Stadium

	Aloha Stadium Capital Improvement	New Stadium	Difference
Estimated Cost	\$99,200,000	\$252,500,000	\$153,300,000
Present Value of Maintenance	\$57,200,000	\$25,800,000	(\$31,400,000)
Estimated Total Cost	\$156,400,000	\$278,300,000	\$121,900,000
Financing Assumptions: 20 yr, 5.0% tax-exempt interest			
Estimated Annual Debt service	\$12,549,941	\$22,331,512	\$9,781,571
Incremental Revenue Required to Fund Difference			\$9,781,571

Source: WJE 2005a

On site parking would be reduced by about 1,500 spaces during the two football seasons played while the new stadium is under construction. This parking would be replaced after the demolition of Aloha Stadium and could potentially be available at the time of opening the new stadium. Use of nearby underutilized State-owned land for development of new parking should be explored to mitigate the loss of parking during construction and provide added parking for the public and additional revenues following construction.

DAGS considers renovation of Aloha Stadium to be the preferred alternative to construction of a new stadium due to the relatively smaller financial burden this alternative would place on the public.

2.5 REQUIRED PERMITS

The following permits listed would be required for this project:

State of Hawai'i Permits

1. Construction Noise Permit
2. National Pollutant Discharge Elimination System (NPDES) Permit

City and County of Honolulu Permits

1. Waiver for off-street parking and maximum building density requirements
2. Building permits

Federal Permits

None required

3.0 AFFECTED ENVIRONMENT, ENVIRONMENTAL IMPACTS, AND MITIGATION MEASURES

3.1 CLIMATE, TOPOGRAPHY, AND SOILS

Existing Conditions

The climate at Aloha Stadium is semi-tropical with average temperatures in the 70s. The prevailing winds vary from 10 to 20 miles per hour and originate from the northeast. The annual precipitation for this area is about 30 inches (Wilson Okamoto and Associates 1988).

The project area topography is generally flat with no steep slopes (i.e. greater than 20%), primarily because the Stadium site was extensively graded during construction. The concrete channelized Halawa Stream crosses a portion of the property (Figure 6).

The Pearl Harbor geologic formation is a plateau created by advancing lava from the Ko'olau Mountain Range which buried lavas from the older Waianae Range. The area has a complex geologic history, profoundly affected by fluctuating sea levels. During periods of higher sea levels and as the island sank, the entire area was submerged and silt from surrounding hills accumulated in the broad embayment. There are no known lava tubes or caves within the project area.

Aloha Stadium is situated on land consisting of Waipahu Silty Clay (WzA), Makalapa Clay (MdB), and Honouliuli Clay (HxA). The following descriptions of the land and soils types are from the Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai (Soil Conservation Service 1973):

- **Waipahu Silty Clay (WzA), 6 to 12% slopes** This series consists of well-drained soils on marine terraces on the island of Oahu. These soils developed in old alluvium derived from basic igneous rock. They are nearly level to moderately sloping. Elevations range from nearly sea level to 125 feet. Runoff is medium and the erosion hazard is moderate. This soil is used for sugarcane and home sites.
- **Makalapa Clay (MdB), 2 to 6% slopes** This series consists of well-drained soils on uplands on the island of Oahu, near Salt Lake Crater, Diamond Head, and the Mokapu Peninsula. These soils formed in volcanic tuff. They are gently sloping to moderately steep. Elevations range from 20 to 200 feet. This soil is gently sloping. Included in mapping were small areas of Mamala soils and small areas of saline soils within Salt Lake Crater and Diamond Head. Permeability is slow. Runoff is slow, and the erosion hazard is slight. The available water capacity is about 1.4 inches per foot of soil. Roots penetrate to the volcanic tuff. Workability is difficult because the clay is very sticky and very plastic. The shrink-swell potential is high. This soil is used for urban development and pasture.
- **Honouliuli Clay (HxA), 0 to 2% slopes** This series consists of well-drained soils on coastal plains on the Island of Oahu in the Ewa area. These soils developed in alluvium derived from basic igneous material. They are nearly level and gently sloping. Elevations range from 15 to 125 feet. Permeability is moderately slow. Runoff is slow, and the erosion hazard is no more than slight. The available water capacity is about 1.8 inches per foot of soil. In places roots penetrate to a depth of 5 feet or more. Workability is slightly difficult because of the very sticky and very plastic clay. The shrink-swell potential is high. This soil is used for sugarcane, truck crops, and pasture.

Impacts and Proposed Mitigation

The proposed project is anticipated to have no impacts on topography or soils as there is no grading, ground disturbance, or related construction activities.

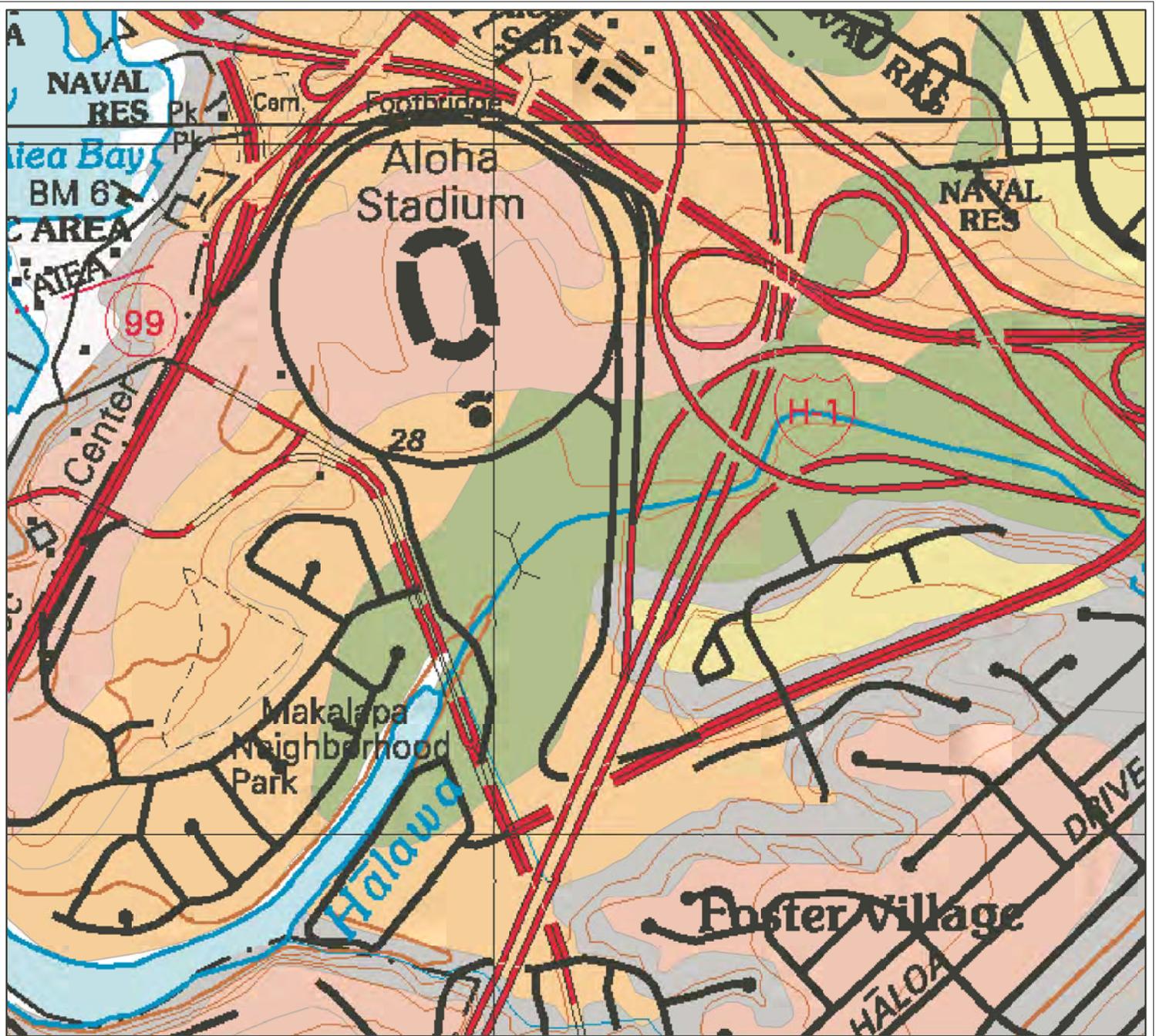


Figure 9. Soil Types

-  Inceptisols (*HnB, Ph, WzA, WzB, WzC*)
-  Mollisols (*EaB, KIA, KlBc*)
-  Oxisols (*LaA, LaB, LaC*)
-  Vertisols (*HxA, KtC, KTKE, MdB*)

-  Fill Land
-  Rock Land



Data Source: U.S. Dept. of Agriculture, Natural Resources Conservation Service, 2001

3.2 NATURAL HAZARDS

Existing Conditions

Earthquake Hazards

Although difficult to predict, an earthquake of sufficient magnitude causing structural or other property damage may occur in the future. However, except for the Island of Hawai'i, the Hawaiian Islands are not situated in a high seismic area subject to numerous earthquakes (Macdonald et al. 1983). Most of the earthquakes that have occurred in the past have been volcanic earthquakes causing relatively little or no damage.

Earthquakes in the Hawaiian Islands are primarily associated with volcanic eruptions from the inflation or shrinkage of magma reservoirs beneath which segments of the volcano shift (Macdonald et al., 1983). Oahu is periodically subject to episodes of seismic activity of varying intensity. Available historical data indicates that the number of major earthquakes occurring on Oahu have generally been fewer and of lower magnitude than those on other islands such as Hawai'i (DBEDT 2001; Furumoto, et al. 1973). However, earthquakes cannot be avoided or predicted with any degree of certainty, and an earthquake of sufficient magnitude (greater than 4 on the Richter Scale) may cause damage to the stadium. In terms of seismic risk, the entire Island of Oahu is rated Zone 2A Seismic Probability Rating (*Uniform Building Code, 1997 Edition*, Figure 16-2) on an increasing scale of risk from 0 to 4. By comparison the Island of Hawai'i is rated Zone 4 Seismic Probability Rating, implying a peak acceleration probably of more than twice that of Zone 2 areas. The project site does not appear to be subject to subsidence, landslides or other forms of mass wasting.

Hurricane Hazards

The three major elements that make a hurricane hazardous are strong winds and gusts; large waves and storm surge; heavy rainfall [Federal Emergency Management Agency (FEMA) 1993]. A hazard mitigation report prepared by the Federal Emergency Management Agency after Hurricane Iniki in 1992 determined that nine hurricanes approached within 300 nautical miles (about one day's travel time) of the Hawaiian Islands' coastlines between 1970 and 1992 (FEMA 1993). Most hurricanes affecting the islands have focused on Kauai. Based upon a tracking of hurricanes since 1950, there appears to be no geographical or meteorological reasons why hurricanes miss other islands and tend to steer toward Kauai (FEMA 1993).

A hurricane of significant strength and high winds passing close to the island could cause damages to the facilities at Aloha Stadium. However, the building is constructed of material minimizing its susceptibility to structural damage. The risk of potential damage from high winds should be minimal.

Tsunami Inundation and Flooding

Aloha Stadium falls within Zone D as designated on the Flood Insurance Rate Map (FIRM) Community Panel Number 0335F (2007) prepared by the Federal Emergency Management Agency (FEMA 1980).

The Zone D designation is used for areas where there are possible but undetermined flood hazards. In areas designated as Zone D, no analysis of flood hazards has been conducted. Mandatory flood insurance purchase requirements do not apply, but coverage is available. The flood insurance rates for properties in Zone D are commensurate with the uncertainty of the flood risk (FEMA 1980).

Any major tsunami can potentially subject the Pearl Harbor coastline to severe damage and may also damage the stadium as well as other structures in the area.

NOAA's Center for Tsunami Research recently conducted an analysis of the effects of distant (i.e., non-local) historic tsunami, as well as a "worst-case" scenario tsunami, upon Pearl Harbor, and the effects a proposed NOAA facility to be located on Ford Island in the center of Pearl Harbor (Tang et. al 2006). This analysis found no evidence for damaging tsunami within Pearl Harbor, while areas on the south shore of Oahu experienced relatively large run-ups. This assessment suggests that Aloha Stadium's risk for tsunami inundation is relatively low, compared to shoreline areas of Oahu. While risk may be minimal, this risk would be mitigated through strict adherence to flood zone and building code requirements.

Impacts and Proposed Mitigation

In general, geologic conditions, tsunami inundation, flooding and other natural hazards do not appear at this time to impose any overriding constraints on the project, and no mitigation measures are expected to be required. Project design takes soil properties into account. All facilities will be built in conformance with the Uniform Building Code's seismic standards, as well as all applicable standards of the City and County of Honolulu and the State of Hawai'i.

3.3 AIR QUALITY

Existing Conditions

Air quality in Hawai'i is generally characterized as relatively clean and low in pollution. Northeast tradewinds that are predominant throughout the year typically carry emissions and other air pollutants from inland areas out toward the ocean. Air quality in the project area is generally dominated by emissions from traffic using the numerous highways and roadways in the area.

Sensitive receptors to air quality impacts exist nearby in the form of residences and a school; these are located to the north and south of the stadium parking lot. To the south,

the nearest residence is located approximately 300 feet from the southern edge of the Stadium parking lot in the Makalaoa neighborhood along Ohenana Loop, and to the north about 600 feet from the northern edge of the Stadium parking lot, across SR 99 (Kamehameha Highway). Aiea Elementary School is located about 500 feet north from the northern periphery of the Stadium parking lot. These sensitive receptors are also located in close proximity to highways and other roadways with high levels of use.

Under the Clean Air Act, Ambient Air Quality Standards (AAQS), also known as “criteria” standards, have been established by both Federal and State governments that limit ambient concentrations of particulate matter less than 10 microns (PM₁₀), sulfur dioxide, nitrogen dioxide, carbon monoxide (CO), ozone, and lead. In addition, a State standard has been established for hydrogen sulfide. Short-term standards (24-hour periods or less) were established for pollutants with acute health effects and may not be exceeded more than once a year. Long-term standards (annual periods) were established for pollutants with chronic health effects and may never be exceeded. State AAQS are more stringent than the comparable national limits (NAAQS) except for the standards for sulfur dioxide, particulate matter, and lead, which are set at the same levels. A summary of both State and National AAQS is presented below.

Table 5. State and National AAQS

Pollutant	Sampling Period	NAAQS Primary	NAAQS Secondary	State Standards
Particulate Matter Less Than 10 Microns (PM ₁₀) (µg/m ³)	Annual	50	50	50
	24-Hour	150	150	150
Sulfur Dioxide (µg/m ³)	Annual	80	n/a	80
	24-Hour	365	n/a	365
Nitrogen Dioxide (µg/m ³)	Annual	100	100	70
Carbon Monoxide (mg/m ³)	8-Hour	10	10	5
	1-Hour	40	40	10
Ozone (µg/m ³)	1-Hour	235	235	n/a
Hydrogen Sulfide (µg/m ³)	1-Hour	n/a	n/a	35
Lead (µg/m ³)	Quarter	1.5	1.5	1.5

µg/m³ – micrograms per cubic meter; mg/m³ – milligrams per cubic meter

Hawai‘i’s standards are not divided into primary and secondary standards as are the National standards. Primary standards are intended to protect public health with an adequate margin of safety while secondary standards are intended to protect public welfare through the prevention of damage to soils, water, vegetation, man-made materials, animals, wildlife, visibility, climate, and economic values.

Based on measured ambient criteria pollutant data, the USEPA designates areas of the U.S. as having air quality equal to or better than the NAAQS (attainment) or worse than the NAAQS (nonattainment). Upon achieving attainment, areas are considered to be in

maintenance status for a period of 10 or more years. The State of Hawai'i Department of Health (DOH) has monitoring stations on the Island of Oahu; however, none of them are located in the Pearl Harbor or Salt Lake area, the closest is on Sand Island. Based upon the DOH's 2007 air data for the Island of Oahu, there were no occurrences of PM₁₀ greater than the National or State Standards. Honolulu County, according to 40 CFR 81.76, is designated as part of the State of Hawai'i Air Quality Control Region (AQCR). A review of federally published attainment status for AQCRs indicated that the Hawai'i AQCR is designated as attainment (i.e., meeting national standards) for all criteria pollutants.

Title V of the Clean Air Act Amendments of 1990 also requires states to issue Federal Operating Permits for major stationary sources. Under the Hawai'i Administrative Rules (HAR §11-60.1-1) a major stationary source is defined as a source that emits equal to or more than 100 tons per year (TPY) of any one criteria air pollutant, 10 TPY of a hazardous air pollutant, or 25 TPY of any combination of hazardous air pollutants. The purpose of the permitting rule is to establish regulatory control over large, industrial activities and to monitor their impact upon air quality.

Potential Impacts and Mitigation Measures

Impacts on ambient air quality associated with this project would primarily be limited to short-term construction activities. Construction activities with potential air quality impacts include vehicle emissions, repaving of the parking area, removal of corroded surfaces via actions such as abrasive blasting, and painting. Construction activities, without mitigation, have the potential to produce localized and temporary fugitive dust and particulate emissions as well as emissions of other criteria and hazardous air pollutants that could potentially impact public health; construction may be on a 24 hour, 7 day a week schedule.

In order to mitigate potential air quality impacts to public health, and to determine permitting requirements, the contractor will be required to prepare an Air Quality Mitigation Plan. This plan will assess total criteria and hazardous air pollutant emissions from all construction and renovation activities, and will also include specific best management practices (BMP) in order to mitigate potential public health risks. This plan should assess total criteria and hazardous pollutant emissions from all renovation and construction activities using the emission factors from the U.S. Environmental Protection Agency's (EPA's) NONROAD2005 and MOBILE6.2 models (USEPA 2006a, 2006b) in order to determine if the project is considered major under Hawai'i regulations (HAR §11-60.1-33) and requires permitting.

Dust control measures as part of the Air Quality Mitigation Plan will be prepared and implemented by the contractor for construction activities with potential to generate air quality impacts. Fugitive dust emissions may be produced by paving and by abrasive blasting activities, for example. The State of Hawai'i Air Pollution Control Regulations HAR §11-60.1-33 – Fugitive Dust, prohibit visible emissions of fugitive dust from construction activities at the property line (State of Hawai'i Department of Health 2003).

Painting and abrasive blasting activities, for instance, would also be subject to the visible emission guidelines of HAR §11-60.1-32, whereby no emissions of opacity greater than 20% may be released. The Air Quality Mitigation Plan prepared by the contractor will detail controls to prevent the release of visible emissions and possible hazardous air pollutants. This plan should include, but not be limited to, a number of BMPs, such as those described in AP 42, Chapter 13 (USEPA 1995).

Abrasive blasting may also release particulates and hazardous air pollutants from the subject material that may have been used during construction and maintenance of Aloha Stadium. Therefore, before any construction work begins, surveys must be conducted by EPA certified inspectors to determine the presence and possible extent of lead-based paint and asbestos containing materials. The survey should also include inspections for other RCRA regulated materials including, but not limited to, polychlorinated biphenyls, and mercury containing materials. The Air Quality Mitigation plan will consider the results of these surveys in emission estimates.

If sufficient quantities of regulated materials are determined to exist in areas where work is to be performed, the materials should first be removed by EPA certified abatement contractors. Public notification requirements under the National Emission Standards for Hazardous Air Pollutants (NESHAP) and under the Emergency Planning and Community Right-to-Know Act (EPCRA) may also apply.

After improvements to the stadium are made, there will be an anticipated increase in traffic to and from the stadium (see Section 3.10.2). This will create an incremental increase of pollutants from vehicles; however, the air pollutant levels are expected to remain within the State and National AAQS. Once completed, there would essentially be no activities occurring within the stadium that would generate significant amounts of air pollutants exceeding State or National standards.

3.4 NOISE

Existing Conditions, Impacts and Mitigation Measures

Existing noise levels at Aloha Stadium are dominated by scheduled Stadium uses, and by vehicle and aircraft noise during other periods.

Sensitive receptors to noise impacts exist nearby in the form of residences and a school; these are located to the north and south of the stadium parking lot. To the south, the nearest residence is located approximately 300 feet from the southern edge of the Stadium parking lot in the Makalaoa neighborhood along Ohenana Loop, and to the north about 600 feet from the northern edge of the Stadium parking lot, across SR 99 (Kamehameha Highway). Aiea Elementary School is located about 500 feet north from the northern periphery of the Stadium parking lot. These sensitive receptors are also located in close proximity to highways and other roadways with high levels of use.

Potential noise impacts associated with this project would mainly be associated with short-term construction activities; construction may be on a 24 hour, 7 day a week schedule. Noise from construction activities are regulated under Title 11, Chapter 46 (Community Noise Control), HAR. Under these regulations, Aloha Stadium is situated within a Class A district. Therefore, the maximum permissible sound levels for construction activities is 60 dBA during daytime (7:00 a.m. to 10:00 p.m.) hours and 50 dBA during nighttime hours (10:00 p.m. to 7:00 a.m.). These levels may not be exceeded at or beyond the property line for more than 10 percent of any continuous 20-minute period.

Construction-related activities will temporarily increase ambient noise levels within the vicinity of the work area. Potential noise sources will include construction vehicles and other power equipment. Measures to control construction noise include the use of mufflers on power equipment and vehicles. Construction activities are expected to be limited to regular workday hours (7:00 a.m. to 3:30 p.m., Monday through Friday). All construction-related vehicles traveling on the roadways must also meet the vehicle noise level requirements set by the State of Hawaii Department of Health.

If the option, Loge Level Corner and Sideline Clubs Addition, is implemented, the stadium will have an additional capacity of 900 attendees. This will create an incremental increase of noise during scheduled events; however, noise levels are expected to be within the acceptable range.

3.5 VISUAL RESOURCES

Existing Conditions and Impacts

There are no unique natural or topographical features, landmarks, or other land forms of significant or important visual character known to be present on the project site or in the immediate vicinity of Aloha Stadium. Although residential areas in mauka directions from Aloha Stadium generally have expansive views that include the Stadium, these makai views also include other industrial and highly urbanized areas, including, for example, Honolulu International Airport and surrounding industrial areas, highways, and Pearl Harbor. The project area is a mix of residential, industrial, and military uses, and is not generally known for its scenic value. The stadium itself is a local landmark, and its appearance is familiar to residents and regular visitors. Figure 10 shows Aloha Stadium from a Halawa residential area located approximately two miles to the northeast.

Given any of the roof modification options, the roof will be altered visually, but the overall appearance of the Stadium will change negligibly, as any modifications or new materials used will be of similar structure, new attractive color, texture, and form. Removal of the roof would minimally decrease the overall apparent cross-section of Aloha Stadium. The proposed infill enhancements will change the structural appearance of the stadium, but these changes are negligible considered against the overall structure and appearance of the Stadium. Therefore, no adverse impacts to visual resources are anticipated and the change in overall appearance of Aloha Stadium will be negligible.

Many of the minor improvements, such as repaving of the parking lot, improvements to signage, etc. will give the Aloha Stadium exterior an improved appearance. DAGS is considering improvements to landscaping the Stadium site and parking areas, with particular attention paid to native plant species and plant species of cultural importance, as this would enhance the overall attractiveness of the facility.



Figure 10. Aloha Stadium and Its Surrounding Area

3.6 HISTORIC, CULTURAL AND ARCHAEOLOGICAL RESOURCES

Existing Conditions

In order to document the presence of any historic properties and traditional cultural properties that might exist within the project area and to assess both the significance of and impact to any such resources as a result of the project, published information or personal and institutional knowledge on the area was sought. During the pre-assessment phase, the Office of Hawaiian Affairs (OHA) was consulted which recommended a Cultural Impact Assessment, including information related to the practices and beliefs of the Native Hawaiians who once inhabited this area. OHA also recommended community involvement in this assessment.

Of essential utility in this effort was the work *Na Māka o Hālawā, a History of Hālawā Ahupua‘a, O‘ahu* (Klieger 1995) and personal knowledge provided by Mr. Shad Kane (OHA recommended consultation with Mr. Kane). The following paragraphs summarize the findings:

The project site is located within the ahupua‘a of Hālawā (*lit.* curve) very near the boundary of the ahupua‘a of ‘Aiea. Hālawā stretches from the shoreline to the top of the Ko‘olau Mountains and, as such, provided a full complement of resources necessary for traditional Native Hawaiian civilization. During the pre-historic period, settlement patterns in Hālawā ahupua‘a likely reflected the variety of food production and resource extraction activities that generally varied with elevation. For example, mauka (mountain-ward) areas would have been typically used for hunting and harvesting of forest products, streams would have been used to irrigate kalo lo‘i (taro patches), and makai (ocean-ward) areas for fishing, aquaculture and gathering of materials from the ocean.

In the land redistribution, or māhele land redistribution in 1848, only 19 native Hawaiian commoners were awarded kuleana land claims as residents of Hālawā ahupua‘a, while the remaining Hālawā lands were held by royal beneficiaries of King Kamehameha I. These kuleana land claims were located along Hālawā Stream to the south of the project site and were used for kalo production, fish ponds, and habitation (Klieger 1995: 54). Coulter (1933) suggests that the coastal Pearl Harbor population may have been around 2,500 people in 1850, with 100 to 200 people living in the Hālawā shoreline region, although depopulation apparently followed soon after; the 1855 tax assessment listed 32 households in Hālawā ahupua‘a, or about 128 individuals. This area near the mouth of Hālawā Stream was surveyed as part of the Hālawā interchange project by Cluff (1970) who recorded historic-era graves and a possible heiau. Using a number of maps as reference, Klieger (1995:61) mapped these land claims along with more recent features. Portions of several of these kuleana land claims, known specifically as the Kinilau and Kulina ‘ili, are mapped within the boundary of the Aloha Stadium Project Site.

After approximately 1850, the lands of Hālawā were increasingly used for pasturing cattle and rice production by Chinese immigrants, with sugarcane cultivation gaining dominance toward the turn of the 20th century, when it was grown throughout the lowlands of Hālawā, stimulated by the development of artesian wells. The Klieger map showed several sugarcane mill roads and railroad tracks crossing the Aloha Stadium site. The railroad tracks, constructed in 1901, lead to the “Old Mill [1874],” located approximately 1,000 feet west-southwest of the project site. This suggests that the project site was then used for sugarcane cultivation. Klieger (1995: 58) noted that, “Lane L. McCandless had the foresight to buy out many of the remaining kuleana Land Commission Awards in Kulina and Kunana ‘ili after 1880.” This may indicate that at this time the kuleana land claims located on the present-day Aloha Stadium site were under sugarcane or rice cultivation and perhaps also were not permanently occupied.

Three sites known in the project area were described by McAllister (1933) including a freshwater pond in Makalapa Crater, more than 0.5 mile south of the project site, and two fishponds located on the near shore of Pearl Harbor, with one of them, Kahakupohaku Fishpond, located on the southeast shore of ‘Aiea Bay, the portion of Pearl Harbor nearest Aloha Stadium. Physical remains of these fishponds were not subsequently recorded and a survey by Dye (2000) found no evidence for their survival, although a 1920s aerial photograph clearly shows them (Klieger 1995: 65). Additionally, two major heiau of lower Hālawā, Waipao Heiau and Waikahi Heiau, were destroyed during the development of field systems associated with sugarcane agriculture (Hartzell et al. 2003).

Lower Hālawā was developed concurrently with post-WWII urban and military development of Honolulu and Pearl Harbor. During World War II, the Navy built barracks on 80 acres of Hālawā land including the project site. After WWII this housing was known as Hālawā Veterans’ Homes, and was later converted to low-income housing by the Hawai‘i Housing Authority, with as many as 1,142 units supporting more than 4,000 individuals (Hawai‘i Housing Authority 1953). These were displaced by the Aloha Stadium Development, as was Hālawā Elementary School (Milz 1996). Klieger (1995: 5) noted “the establishment of Pearl Harbor Naval Base, Oahu Railway and Land Company, Honolulu Plantation Company, Hickam Air Force Base, Honolulu International Airport, and other projects have erased most of the physical evidence of Native Hawaiian Settlements in coastal Hālawā...”

This background literature search and a search of the State and Federal Registers of Historic Properties revealed that there are no known historic sites within the project area. A number of historic sites listed on the State and National Register of Historic Places are in the general vicinity of the project site (i.e. within several miles), mostly in and around Pearl Harbor. These include the U.S.S. Bowfin, Hickam Air Force Base, the Artillery District of Honolulu, CINCPAC Fleet Headquarters, the U.S.S. Missouri, Fort Kamehameha Housing, Pearl Harbor Naval Base, and ‘Oki‘okiolepe Pond. The nearest of these to the project site is CINCPAC Fleet Headquarters, located about 0.8 miles south of the project site within Makalapa Crater. In addition, the Honolulu Plantation Company ‘Aiea Sugar Mill (now demolished) and Honolulu Plantation Manager’s

Residence are also listed on the State Register of Historic Places, located more than 0.3 and 0.5 miles from the project site, respectively.

The project site is located a short distance (across Kamehameha Highway) from 'Aiea Bay State Recreational Area, located on the near shore of Pearl Harbor. Shoreline fishing is a traditional cultural activity that may still be practiced in accessible shoreline areas of Pearl Harbor such as this. However, other forms of traditional gathering, terrestrial as well as traditional marine recreational activities, are unlikely to occur in this area due to the high degree of urbanism and restrictions on use of Pearl Harbor waters.

Because the project site has been previously severely modified by agricultural activities, construction of Halawa Veterans' Homes, and Aloha Stadium itself, archaeological resources would not be expected to exist above ground surface. There are no Historic resources on or in the immediate vicinity of the project site listed in either the State or National Registers of Historic Properties. No archaeological or cultural resources are known to exist on the project site or immediate area of the stadium. Mr. Shad Kane wrote:

Aloha Noh,

I read the attachments and based on the information provided it appears that the work involved is just repairs and improvements to existing structures and features. I do not see any work beyond the immediate footprint of the existing structures therefore I see no significant cultural impact on the traditional and cultural practices associated with this pre-existing location.

The cultural stories of this area are associated with the many lo'i kalo and lo'i I'a (fish ponds). They are also associated with the trail that today we know as Moanalua Hwy – Kamehameha Hwy – Farrington Hwy.

They are many stories associated with Uhane (spirits) or sometimes referred to as night marchers on their quest from Kaupe'a (today known as Kapolei) to Leilono which is a short distance from where the stadium stands today. Kaupe'a (Kapolei) anciently is the place of wandering spirits. In order to redeem themselves they needed seek the "Ulu o Leiwalu" tree at Leilono.

The "Battle of Kuki'iahu" occurred a short distance from where the stadium now stands. A Chief by the name of Kaeokulani and his wife and his warriors died in their last stand against Kalanikupule. Kalanikupule had the support of 2 English ships one captained by an English Captain Brown. His ship's name was the HMS Jackal. This was the first time an English ship ventured across the shallow shoals of the entrance to Pearl. All of these historical events took place in the area surrounding the stadium. There are many more colorful stories and pieces of ancient Hawaiian history associated with this area. Although the cultural landscape has been altered these stories will live on forever.

Mahalo, Shad

Potential Impacts and Mitigation Measures

Cultural Resources

Based upon the apparent lack of existing resources and uses, the exercise of native Hawaiian rights related to gathering, access or other customary activities will not be affected, and there will be no adverse effect upon cultural practices or beliefs.

Archaeological and Historic Resources

The project site is located in the general vicinity (i.e., within several miles) of a number of sites listed on the State and Federal Registers of Historic Properties. Any potential construction-phase impacts to these sites will be mitigated by means discussed elsewhere in the document. There are no long-term impacts to these sites expected by the project.

The State Historic Preservation Division (SHPD) has issued a determination of no effect on historic properties for the project, dated June 5, 2007, and is included in Appendix B. Although no effects on historic properties are expected from the project due to the site's previous extensive modification, the presence of cultural resources and archaeological sites previously noted in the project area indicates that there is some potential for subsurface cultural materials, including human remains, to be present, and hence potentially encountered during construction.

In the unlikely event that archaeological resources, Hawaiian cultural sites, or human remains are encountered during construction activities, all work in the immediate area of discovery would be immediately halted and the DLNR-SHPD notified as outlined in Hawai'i Administrative Rules 13§13-275-12. The treatment of any human remains encountered would be determined, and conducted in accordance with the applicable requirements of Chapter 6E, HRS, and Chapter 13-300, HAR. Furthermore, as a precautionary measure, construction personnel on site would be informed of the possibility of inadvertent cultural finds, and would be made aware of the appropriate notification measures to follow.

3.7 BIOLOGICAL RESOURCES

3.7.1 Botanical Resources

Existing Conditions and Potential Impacts

Existing vegetation is composed of non-native, landscaped species, and non-native weed species in non-landscaped areas, including Monkeypod trees (*Pithecellobium saman*, *Samanea saman*) located in the parking lot islands (Figure 11).

The project area is not known to include State or Federal endangered species, nor are there any natural or historic wetlands within the project site. The United States

Department of Interior Fish and Wildlife Service was consulted prior to the preparation of this document but had no information to provide regarding botanical resources on the project site.

The project is not expected to have an impact on any botanical resources in the area. Resurfacing of the parking lot may disturb the root systems of some of the Monkeypod trees. DAGS is considering improvements to landscaping the Stadium site and parking areas, with particular attention paid to native plant species and plant species of cultural importance, as this would enhance the overall attractiveness of the facility.



Figure 11. Monkeypod Trees Found at Aloha Stadium

3.7.2 Faunal Resources

Existing Conditions

There is not a large population of animal species found. There are no known endangered, threatened, proposed, or candidate fauna present on the subject site, nor are there any wetlands located in the vicinity. No State designated Natural Area Reserves, for the recovery of Hawaiian birds, are located within five miles (Fish and Wildlife Service 2003).

Species found on the subject site are pigeons, doves, and other small birds often found in urban areas on the island of Oahu.

Potential Impacts

Being located in a highly developed and urbanized area, Aloha Stadium does not provide a suitable habitat for native species, including endangered, threatened, proposed, or candidate species. The U.S. Department of Interior Fish and Wildlife Service (FWS) was consulted prior to the preparation of this document but had no information to provide regarding botanical resources on the project site. The nearest wildlife refuge is located in the Pearl Harbor National Wildlife Refuge in the West Loch area, over 5 miles west of the stadium (Figure 12). Therefore, the proposed project is not expected to have an adverse impact on any threatened or endangered animal species.



Figure 12. Pearl Harbor National Wildlife Refuge Location

3.8 HYDROGEOLOGICAL RESOURCES AND WATER QUALITY

Existing Conditions

The Southern Oahu Basal Aquifer is the island's principal freshwater aquifer, underlying all of southern Oahu. The Southern Oahu Basal Aquifer is a Ghyben-Herzberg lens, or basal aquifer, of freshwater which floats atop seawater. Thickest in the central part of Southern Oahu, it thins toward the coastline. For a homogeneous basal water-body in hydrostatic equilibrium, freshwater and the underlying seawater are separated by a relatively sharp interface. According to the classical Ghyben-Herzberg relation, the sharp

interface of a basal water-body will be found below mean sea level at a depth of about 40 times the hydraulic head.

Under natural conditions, however, a transition zone exists in which salinity decreases gradually from seawater to that of freshwater. The thickness of the transition zone depends on transport processes of salt advection and dispersion, which are caused by tidal fluctuation, atmospheric pressure variation, and recharge (Liu 2004-2005). It is recharged by rainfall in mauka areas of Honolulu and the Leeward Coast. The coastal parts of the island are covered by a caprock, a low permeability wedge composed of layers of marine and terrestrial sediments and clays as well as coral reef, organic debris, and volcanic deposits. The caprock provides a barrier that retards the seaward flow of groundwater. The caprock layer thins with distance from the shoreline and ends at varying distances inland, and the basalt layer is exposed or underlies surficial materials. As a consequence, inland areas of central Honolulu have the highest water tables in southern Oahu (Shirazi 2006).

HDOH has established an Underground Injection Control (UIC) line to serve as a boundary between drinking and non-drinking water portions of underlying aquifers. Areas above (mauka side of) the UIC line are within drinking-water portions of the aquifer, while areas below (makai side of) the UIC are within non-drinking water portions of the underlying aquifer (Mink and Lau 1987).

Aloha Stadium is located within the Waimalu Aquifer Sector (201). The entirety of the Aloha stadium area is located on this Waimalu hydrologic unit (30201), along with much of the other areas to the East of Pearl Harbor. The Aquifer type is Basal flank unconfined, meaning fresh water in contact with seawater where water table is upper surface of saturated aquifer, with horizontally extensive lavas (Lau 1990). Groundwater within this aquifer sector is currently used for drinking. The salinity of the drinking water is fresh, yet it has a high vulnerability to contamination.

Table 6. Aquifer Classification System

Aquifer Code	3020111
Island Code	3 – Oahu
Aquifer Sector	02 – Pearl Harbor
Aquifer System	01 – Waimalu
Aquifer Type, hydrogeology	1 – Basal
Aquifer Condition	1 – Unconfined
Aquifer Type, geology	1 – Flank
Status Code	11111
Development Stage	1 – Currently used
Utility	1 – Drinking
Salinity (in mg/L Cl)	1 – Fresh (<250)
Uniqueness	1 – Irreplaceable
Vulnerability to Contamination	1 – High

Potential Impacts and Proposed Mitigation

The project will not add to the area of impermeable surface in the region and is not expected to adversely affect drainage. Drainage improvements will ensure that all storm water runoff be contained on-site during construction.

In any project, uncontrolled excess sediment from soil erosion during and after excavation and construction has the potential to impact natural watercourses, water quality and flooding. Contaminants associated with heavy equipment and other sources during construction have the potential to impact surface water and groundwater if not mitigated effectively.

No grading or earthwork is anticipated; however, in the unlikely event it occurs, the contractor shall perform all earthwork and grading in conformance with Article 13, Revised Ordinances of City and County of Honolulu, General Provisions for Grading, Soil Erosion and Sediment Control. Because the project area is greater than one acre and has a potential for storm water runoff, a National Pollutant Discharge Elimination System (NPDES) permit must be obtained by the contractor before the project commences. This permit requires the completion of a Storm Water Pollution Prevention Plan (SWPPP). In order to properly manage storm water runoff, the SWPPP will describe the best management practices for the project. These BMPs may include, but will not be limited to, the following:

- Minimization of soil loss and erosion by revegetation and stabilization of slopes and disturbed areas of soil, possibly using hydromulch, geotextiles, or binding substances, as soon as possible after working;
- Minimization of sediment loss by emplacement of structural controls possibly including silt fences, gravel bags, sediment ponds, check dams, and other barriers in order to retard and prevent the loss of sediment from the site;
- Minimizing disturbance of soil during periods of heavy rain;
- Phasing of the project to disturb the minimum area of soil at a particular time;
- Application of protective covers to soil and material stockpiles;
- Construction and use of a stabilized construction vehicle entrance, with designated vehicle wash area that discharges to a sediment pond;
- Washing of vehicles in the designated wash area before they egress the project site;
- Use of drip pans beneath vehicles not in use in order to trap vehicle fluids;
- Routine maintenance of BMPs by adequately trained personnel;
- Significant leaks or spills, if they occur, shall be properly cleaned up and disposed of at an approved site.

The project will be regulated through review, revision and approval by the City and County of Honolulu’s Department of Public Works (DPW) to ensure compliance with standards related to storm water runoff containment.

3.9 SOCIO-ECONOMIC FACTORS

3.9.1 Economic Impact

Existing Conditions and Impacts

Construction for improving Aloha Stadium will incur a small positive economic impact due to the employment of construction related jobs needed to build and upgrade the stadium.

Production of Jobs

The estimated cost of improving the stadium is estimated at \$129,000,000 to keep the stadium running for 30 more years. Table 7 shows the estimated cost of upgrading the stadium.

Table 7. Four Year Plan for Needed Improvements (in thousands of dollars)

	Fiscal Year				Total
	2007	2008	2009	2010	
Planning		\$900			\$900
Design	\$1,000	\$1,000	\$1,350	\$2,700	\$6,050
Construction		\$10,530	\$24,500	\$58,734	\$93,764
Total	\$1,000	\$12,430	\$25,850	\$61,434	\$100,714

Source: Source: Department of Accounting and General Services

Direct construction-related jobs may consist of supervisors, mechanical engineers, on-site construction laborers, and architects. The job may be performed over a four-year period, which will employ workers for a fairly stable duration of time. This will also stimulate retail, and material distributors who supply the construction industry as well as local vendors. Due to the highly mobile character of the City and County of Honolulu’s population, it is unlikely that these jobs would affect any particular district or neighborhood.

Fiscal Factors

Fiscal impacts associated with the improving of Aloha Stadium may involve additional tax revenue to the State. General excise tax will be the primary tax revenue source for State government because of the cost of the project and construction materials. The \$129 million expected for the construction of improving the stadium would therefore generate tax revenue up to \$6,078,480 for the State.

In addition, the proposed improvements are anticipated to principally offset the cost of improvements, and also protect the value of the State's property, generate increased revenue streams by enhancing the experience for the patrons, increasing use, and improve the overall image of Aloha Stadium (WJE 2005d).

As City and County of Honolulu revenues are primarily limited to property tax, there will be minimal changes to these types of revenues. The proposed enhancements are also expected to have a positive economic impact by attracting more businesses.

3.9.2 Social Impact Factors

Existing Conditions and Impacts

The proposed renovation of Aloha Stadium is not expected to adversely affect nearby resident populations; however, the project is expected to increase visitor population to the stadium.

The construction employees will be hired locally, so there will be no increase in the demand for housing, community facilities, or schools. As a result, there should be no impact on the existing permanent resident population.

The project should not have an effect or alter the character of the surrounding community as the project essentially entails renovating and upgrading an existing structure. As the project will not change existing uses in the area or have a significant impact on surrounding land uses, no changes to the community would occur. The State will strive to keep as many of the stadium events undisturbed as possible and continue to be good, responsible, and considerate to those Stadium neighbors to the extent practicable.

3.10 PUBLIC FACILITIES AND SERVICES

3.10.1 Utilities and Public Services

Water

The potable water system currently servicing the Aloha Stadium consists of source wells in Waimalu. The City and County of Honolulu's Board of Water Supply (BWS) conveys potable water to users through a system of water mains that follow the major roads in the district. Aloha Stadium's source of water comes directly from the City potable water supply, and that the non-potable water supply does not get used because of the odor.

If the loge level/sideline club option is exercised, the stadium will have an additional capacity of 900 fans. This will increase the water usage at Aloha Stadium by as much as 2.6%, given average attendance of 34,615 people during the 2002-2004 seasons. However, this increase is not expected to have a significant impact on the BWS water system or source capacity.

Wastewater and Solid Waste

According to Stadium staff, the City and County of Honolulu provides basic sewer services for Aloha Stadium (Tong 2007).

If the loge level/sideline club option is exercised, the stadium will have an additional capacity of 900 fans. This will increase the sewer usage by as much as 2.6%, given average attendance of 34,615 people during the 2002-2004 seasons. However, this increase is not expected to have a significant impact on the City and County sewer system.

Coordination between the contractor and Aloha Stadium will be required to accommodate the increased volume of solid waste during construction activities.

Emergency Police, Fire, Medical Services

The nearest fire station, Aiea Fire Station, is nearly one half mile northeast from the site, located on Ulune Street. The construction is not expected to have a significant impact on the Fire Departments' ability to provide protection services to nearby communities. The construction will be designed to meet fire and building code requirements and should not require any additional work from the Fire Department.

Kapiolani Medical Center located at 98-1079 Moanalua Road is the closest medical facility to the project site. It is located 1.27 miles northwest of the site. Other facilities nearby include Integrated Renal Care, Kapiolani Health, and Kaiser Permanente Medical Group, all under two miles away from the project site. Additionally, two first-aid stations are on duty during scheduled Aloha Stadium events.

Given that the nearest medical facility is 1.27 miles away from the project site, there are no anticipated impacts on the medical facility or the activities occurring there during construction, nor thereafter.

The project proposed for Aloha Stadium should have minimal impacts on the functionality and operations of the police department. The project is not expected to affect the ability of the police department to provide adequate protection services to the surrounding communities. The nearest police station to the site is the Pearl City Police Station which is 3.21 miles northwest of the site.

It is not anticipated that police staff will be hired to direct traffic during construction, as the construction should be done on the site area which lies inside a large parking lot and relatively isolated. The contractor would be required to comply with noise regulations and any conditions regarding permitted construction activities to minimize any disruptions to nearby residents.

Therefore, this project is not expected to have a significant impact on the police department's ability to provide their protective services in the surrounding area during construction or thereafter.

Electrical and Communication Facilities

Electrical services are provided to Aloha Stadium via Hawaiian Electric Company's distribution lines. Telecommunication services are provided to Aloha Stadium by Hawaiian Telcom. Appropriate coordination with these utility companies would be required during the design and the construction of this project to minimize disruptions to their services or activities taking place.

Recreational Facilities

The stadium property was deeded to the State as long as the State used the stadium for recreational purposes. It was agreed that the stadium, if transferred, could only be given to another local government agency, maintaining the same recreational purpose (Russ Saito 2007). Nearby Parks include Halawa District Park, Makalapa Park, Aiea Field Recreation/Annex, and Napuanani Park.

Educational Facilities

The nearest educational centers from the site are Aiea Elementary School and St. Elizabeth School located approximately 0.2 miles north of the site. Aiea Intermediate School and Aiea High School are located within approximately 0.75 miles north of the site, and Makalapa Elementary School and Radford High School are located within a mile south of the site. Lead dust control is required during the demolition and construction activities, and the schools may request air monitoring.

3.10.2 Roads, Traffic, and Access

Most visitors to Aloha Stadium use the Salt Lake Boulevard entrance. The City and County of Honolulu's bus stops are located along Salt Lake Boulevard.

While most events at Aloha Stadium, by nature, involve a large number of people and vehicles, nearby infrastructure is well-equipped to handle these temporary loads. Aloha Stadium is well located to take advantage of the city's transportation system.

If the loge level/sideline club option is exercised, there will be an additional seating at Aloha Stadium by 900. Assuming average attendance values from 2002 through 2004 of 34,615 fans (77% of capacity), no use of public or paid transportation, and 3.0 fans per vehicle, the resulting increase in vehicles arriving at Aloha Stadium is about 2%. This increase, however, is not expected to produce significant additional traffic, and if needed, the stadium will consider additional buses to mitigate traffic.

3.11 GROWTH-INDUCING, SECONDARY AND CUMULATIVE IMPACTS

Growth-Inducing Impacts

Analysis of growth-inducing impacts examines the potential for a project to induce unplanned development, substantially accelerate planned development, encourage shifts in growth from other areas in the region, or intensify growth beyond the levels anticipated and planned for without the project. Provision of needed infrastructure such as roads, water supply, and sewer facilities is often seen as growth-inducing. Of key importance is whether infrastructure fulfills existing demands/needs of planned growth, or whether it instead enables unplanned growth and/or diverts growth away from planned areas. Because the project area is already highly urbanized with adequate infrastructure, it is unlikely that the project could result in growth.

Cumulative Impacts

Cumulative impacts result when implementation of several projects that individually have minor impacts combined to produce more severe impacts or conflicts among mitigation measures.

Most adverse impacts of the current project related to most categories of effect, including erosion, water quality, air quality, noise, scenic values, historic sites, and most other areas of concern, are either non-existent or extremely restricted in geographic scale, negligible, and capable of mitigation through proper enforcement of permit conditions. There are thus few, if any, appreciable adverse impacts that might accumulate with those of other past, present and future actions to produce more severe impacts. At the present time, there do not appear to be any other projects near Aloha Stadium that could combine to produce cumulative impacts.

Secondary Impacts

Construction projects sometimes have the potential to induce secondary physical and social impacts that are only indirectly related to the project. For example, construction of a new recreation facility can lead to changes in traffic patterns that produce impacts to noise and air quality for a previously un-impacted neighborhood. In this case, the proposed project's impacts are mostly limited to direct impacts at the stadium itself. It is unlikely that other facilities – e.g., commercial or industrial facilities – are likely to be attracted to the general area due to the renovation of an already existing facility. While renovation of Aloha Stadium could heighten the appeal for the area, the project area is already highly urbanized and, therefore it is unlikely further development would occur.

The proposed project is expected to have minimal impacts on resident population, land use patterns, or on the natural environment.

Creation of the short-term construction jobs is not expected to effect in-migrating to the area to fulfill these jobs. It is anticipated that local contractors will be used for the

project’s construction. It is unlikely that there will be a rise in the surrounding areas population.

As the project is not expected to adversely affect the area’s resident population or natural environment, there should not be any secondary adverse effects on infrastructure, public facilities, housing, or natural or cultural resources.

4.0 CONSISTENCY WITH GOVERNMENT PLANS AND POLICIES

Listed below are applicable government plans and policies and a discussion of the project’s consistency with each.

4.1 CITY AND COUNTY OF HONOLULU: OAHU GENERAL PLAN

According to the City and County of Honolulu Department of Planning and Permitting, the Oahu General Plan is intended to be a dynamic document, expressing the aspirations of the residents of Oahu. It sets forth the long-range objectives and policies for the general welfare and, together with the City Charter, provides a direction and framework to guide the programs and activities of the City and County of Honolulu.” The General Plan was first adopted in 1977, and amended in 1979, 1982, 1985, 1987, 1989, 1990, 1991, 1992, and 2002. The General Plan is organized into ten elements, in addition to the Preamble, and identifies Objectives and Policies for each.

Below are pertinent sections followed by a discussion of conformance.

POPULATION

Policy 1: Facilitate the full development of the primary urban center.

Population – General Development Pattern Map

The project area is designated as the Primary Urban Center

Discussion: The project continues development of an area designated as Oahu’s urban core, and is therefore conformant with the Oahu General Plan’s pertinent policies for population.

ECONOMIC ACTIVITY

Objective A: To promote employment opportunities that will enable all the people of Oahu to attain a decent standard of living.

Policy 1: Encourage the growth and diversification of Oahu's economic base.

Policy 2: Encourage the development of small businesses and larger industries which will contribute to the economic and social well-being of Oahu residents.

Policy 3: Encourage the development in appropriate locations on Oahu of trade, communications, and other industries of a nonpolluting nature.

Policy 4: Encourage the development of local, national, and world markets for the products of Oahu-based industries.

Discussion: The project would maintain and improve and economically important asset that provides employment opportunities and encourages economic opportunities to businesses of all scales, and serves as a unique resource for promotion of Oahu and Hawai'i-based industries.

PHYSICAL DEVELOPMENT AND URBAN DESIGN

Policy 2: Encourage, wherever desirable, the rehabilitation of existing substandard structures.

Policy 3: Provide and maintain roads, public facilities, and utilities without damaging the character of older communities.

Discussion: The project would rehabilitate an important economic resource without adverse effects to neighboring communities.

CULTURE AND RECREATION

Objective B: To protect Oahu's cultural, historic, architectural, and archaeological resources.

Policy 2: Identify, and to the extent possible, preserve and restore buildings, sites, and areas of social, cultural, historic, architectural, and archaeological significance.

Policy 5: Seek public and private funds, and public participation and support, to protect social, cultural, historic, architectural, and archaeological resources.

Policy 6: Provide incentives for the restoration, preservation, and maintenance of social, cultural, historic, architectural, and archaeological resources.

Objective C: To foster the visual and performing arts.

Policy 1: Encourage and support programs and activities for the visual and performing arts.

Policy 2: Encourage creative expression and access to the arts by all segments of the population.

Objective D: To provide a wide range of recreational facilities and services that are readily available to all residents of Oahu.

Policy 2: Develop and maintain a system of regional parks and specialized recreation facilities.

Policy 3: Develop and maintain urban parks, squares, and beautification areas in high density urban places.

Policy 7: Provide for recreation programs which serve a broad spectrum of the population.

Policy 10: Encourage the private provision of recreation and leisure-time

facilities and services.
Policy 12: Provide for safe and secure use of public parks, beaches, and recreation facilities.

Discussion: The project is consistent with many of the objectives and policies of the Culture and Recreation section of the Oahu General Plan.

4.2 CITY PRIMARY URBAN CENTER DEVELOPMENT PLAN

The City and County of Honolulu's Primary Urban Center Development Plan (PUCDP), one of eight development plan regions of the City, was prepared by the Department of Planning and Permitting in order to guide public policy regarding investment and decision making through the 2025 planning horizon (City and County of Honolulu Department of Planning and Permitting 2004). These development plans are authorized by the City Charter, which mandates preparation of a General Plan and development plans to guide the development and improvement of the City, and are adopted by ordinance.

The Development Plan identifies the following key elements for its vision for the Primary Urban Center:

- Honolulu's natural, cultural and scenic resources are protected and enhanced
- Livable neighborhoods have business districts, parks and plazas, and walkable streets
- The PUC offers in-town housing choices for people of all ages and incomes
- Honolulu is the Pacific's leading city and travel destination
- A balanced transportation system provides excellent mobility for residents and visitors

Aloha Stadium is mentioned specifically once in the plan. In Chapter 3 Land Use and Transportation, the project site is identified as being in one of the two major job centers in the Pearl Harbor area, which extends from Aliamanu to Pearl City. The project site is identified as Institutional on the Land Use Map PUC – West (Figure 4).

Discussion: Aloha Stadium is not the subject of policy statements on the PUCDP. However, the project is consistent with the key element of the PUCDP that calls for protection and enhancement of Honolulu's cultural resources.

4.3 HAWAI'I STATE PLAN AND HAWAI'I STATE FUNCTIONAL PLAN

The Hawai'i State Plan was adopted in 1978. It was revised in 1986 and again in 1991 (Hawai'i Revised Statutes, Chapter 226, as amended). The Hawai'i State Plan establishes a set of goals, objectives and policies that are meant to guide the State's long-term growth and development activities. Twelve Functional Plans cover agriculture, transportation, conservation lands, housing, tourism, historic preservation, energy,

recreation, education, health, human services and employment. The Functional Plans contain objectives, policies, and implementing actions necessary to accomplish the goals of each plan, although no specific functional plans deal with the issue of solid waste. The Three themes that express the basic purpose of the Hawai'i State Plan are individual and family self-sufficiency, social and economic mobility, and community or social well-being. The proposed project is consistent with State goals and objectives that call for increases in employment, income and job choices, and a growing, diversified economic base.

Chapter 226-4 sets forth goals associated with the Hawai'i State Plan:

- (1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i's present and future generations.
- (2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.
- (3) Physical, social, and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring, and of participation in community life.

The aspects of the plan most pertinent to the proposed project are the following:

Discussion: The project is consistent with many of the goals, objectives and policies of the *Hawai'i State Plan*. Specifically, the project is consistent with aspects of the Plan that call for protection of the environment. The site contains no rare or endangered species, historic sites, or other sensitive environmental conditions. Appropriate standards for avoiding the environmental impacts of solid waste disposal will be implemented, and will remain in effect until the facility is closed.

4.4 CHAPTER 344, HRS - STATE ENVIRONMENTAL POLICY

The purpose of this Chapter 344, Hawai'i Revised Statutes (HRS), State Environmental Policy is to, "establish a state policy which will encourage productive and enjoyable harmony between people and their environment, promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, and enrich the understanding of the ecological systems and natural resources important to the people of Hawaii." Chapter 344, HRS enumerates environmental policy and guidelines in this interest. Portions of Chapter 344, HRS that are relevant to the project include:

Environmental Policy:

(1) Conserve the natural resources, so that land, water, mineral, visual, air and other natural resources are protected by controlling pollution, by preserving or augmenting natural resources, and by safeguarding the State's unique natural environmental

characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawaii.

(2) Enhance the quality of life by:

- (B) Creating opportunities for the residents of Hawaii to improve their quality of life through diverse economic activities which are stable and in balance with the physical and social environments;*
- (C) Establishing communities which provide a sense of identity, wise use of land, efficient transportation, and aesthetic and social satisfaction in harmony with the natural environment which is uniquely Hawaiian.*

Discussion: The project will be consistent with this portion of Chapter 344, HRS, as it increases the diversity of economic opportunity by encouraging recreational industry, without producing adverse effects upon natural resources and the environment.

Environmental Guidelines:

(2) Land, water, mineral, visual, air, and other natural resources.

- (A) Encourage management practices which conserve and fully utilize all natural resources;*
- (B) Promote irrigation and waste water management practices which conserve and fully utilize vital water resources;*
- (F) Maintain an integrated system of state land use planning which coordinates the state and county general plans.*

(3) Flora and fauna.

- (B) Foster the planting of native as well as other trees, shrubs, and flowering plants compatible to the enhancement of our environment.*

(4) Parks, recreation, and open space.

- (A) Establish, preserve and maintain scenic, historic, cultural, park and recreation areas, including the shorelines, for public recreational, educational, and scientific uses;*

(5) Economic development.

- (A) Encourage industries in Hawaii which would be in harmony with our environment;*
- (E) Establish visitor destination areas with planning controls which shall include but not be limited to the number of rooms;*

(7) Energy.

- (A) Encourage the efficient use of energy resources.*

(8) Community life and housing.

- (C) Encourage the reduction of environmental pollution which may degrade a community;*
- (E) Recognize community appearances as major economic and aesthetic assets of the counties and the State; encourage green belts, plantings, and landscape plans and designs in urban areas; and preserve and promote mountain-to-ocean vistas.*

Discussion: The project is consistent with Chapter 344, HRS that calls for the establishment of park and recreational areas, encouragement of recreational industries, and development consistent with State and County land use plans. The project would not adversely impact natural resources, as impacts such as potential air and water quality impacts would be mitigated. The project will include landscaping with native plants compatible with the environment. Additionally, the project will not be environmentally detrimental, nor will it have adverse social or community effects, and there has followed the guidelines of HRS344 that call for consideration and protection of natural resources.

Guidelines for environmental policy stated in Chapter 344, HRS that are relevant to this project include the establishment of park and recreational areas, encouragement of recreational industries, development consistent with State and County land use plans. Additionally, the project will not be environmentally detrimental, nor will it have adverse social or community effects, and there has followed the guidelines of Chapter 344, HRS that call for consideration and protection of natural resources.

5.0 AGENCY AND PUBLIC CONSULTATION

Letters providing project information along with a preliminary site plan were sent to various parties in March 2007 and December 2007 to solicit their comments and concerns associated with the project as part of the preparation of this Draft EA. A listing of agencies and organizations for which consultation letters were sent is provided below. Those providing written responses are identified with a "*" symbol. Copies of written comments received along with responses to them are included in Appendix C.

Federal Agencies

Department of Agriculture, Natural Resources Conservation Services
*Regulatory Branch, Department of the Army, U.S. Army Engineer District, Honolulu
Department of Interior, Fish and Wildlife Service, Pacific Islands Ecoregion
Department of Interior, Water Resources Division, U.S. Geological Survey
Department of Transportation, Federal Highway Administration, Hawaii Division
U.S. Federal Aviation Administration

State Agencies

Department of Accounting and General Services
Aloha Stadium
Department of Agriculture
Department of Business, Economic Development, and Tourism (DBEDT)
Department of Hawaiian Home Lands, Planning Office
Department of Health, Environmental Planning Office
*Department of Land and Natural Resources, Land Division, Oahu District Branch
*Department of Land and Natural Resources, State Historic Preservation Division
*Department of Transportation
Office of Planning, DBEDT
Land Use Commission, DBEDT
*Office of Hawaiian Affairs

City & County Agencies

- *Board of Water Supply
- *Department of Community Services
- *Department of Design and Construction
- Department of Environmental Services
- *Department of Facility Maintenance
- *Department of Parks and Recreation
- *Department of Planning and Permitting
- *Department of Transportation Services
- *Fire Department
- *Police Department

Others

- Aiea Library
- Aiea Neighborhood Board
- Hawaiian Electric Company
- Centerplate (swap meet and vendors)

6.0 ANTICIPATED DETERMINATION

The State of Hawai‘i Department of Accounting and General Services has determined that the project will not significantly alter the environments, as impacts will be minimal, and intends to issue a Finding of No Significant Impact (FONSI). This determination will be reviewed based on comments to the Draft EA, and the Final EA will present the final determination.

7.0 FINDINGS AND REASONS

Chapter 11-200-12, Hawai‘i Administrative Rules, outlines those factors agencies must consider when determining whether an Action has significant effects:

1. *The project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources.* No valuable natural or cultural resources would be committed or lost. The project is not located near native habitat, estuarine, or marine environments, nor is it located near areas recognized as being culturally significant.
2. *The project will not curtail the range of beneficial uses of the environment.* No restriction of beneficial uses would occur. The recreational and economic opportunities afforded by the project would enhance the diversity of beneficial uses of the environment.
3. *The project will not conflict with the State's long-term environmental policies.* The State’s long-term environmental policies are set forth in Chapter 344, HRS.

- The broad goals of this policy are to conserve natural resources and enhance the quality of life. The project is minor and fulfills aspects of these policies calling for an improved social environment and enhancement of economic diversity. Potential adverse impacts to air and water quality would be mitigated. It is thus consistent with all elements of the State's long-term environmental policies.
4. *The project will not substantially affect the economic or social welfare of the community or State.* The project would not have any adverse effect on the economic or social welfare of the City and County of Honolulu or State of Hawai'i, and would improve the economic welfare of the State by improving the attractiveness and financial viability of an important public resource.
 5. *The project does not substantially affect public health in any detrimental way.* The project would affect public health and safety in only beneficial ways by enhancing public access to recreational opportunities and by removing potential hazards to public safety.
 6. *The project will not involve substantial secondary impacts, such as population changes or effects on public facilities.* No secondary effects are expected to result from the proposed action, which would simply improve public recreational facilities. An incremental but not substantial increase in traffic and demand on water, electrical, and sewer services would result from the project.
 7. *The project will not involve a substantial degradation of environmental quality.* The project is environmentally benign. The potential for adverse air and water quality impacts during construction would be mitigated.
 8. *The project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat.* The project site supports sparse alien vegetation. Impacts to rare, threatened or endangered species of flora or fauna would not occur.
 9. *The project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions.* The project is not related to other activities in the region in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.
 10. *The project will not detrimentally affect air or water quality or ambient noise levels.* No adverse effects on these resources would occur. Mitigation of construction-phase impacts by preparation and implementation of an NPDES permit and an Air Quality Mitigation Plan will preserve air and water quality. Ambient noise impacts due to construction will be temporary and restricted to daytime hours.
 11. *The project does not affect nor would it likely to be damaged as a result of being located in environmentally sensitive area such as a flood plain, tsunami zone,*

- erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal area.* The project is not located in a tsunami inundation zone, and is not likely not be damaged in the event of flooding. The project is not located in a coastal area, near fresh water bodies, erosion-prone area, or near an estuary. While Aloha Stadium is located in a seismic hazard zone, the entire Island is similarly located, and the project is not imprudent to construct.
12. *The project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.* Aloha Stadium has long been a significantly recognized landmark. The proposed action would result in minor improvements in the appearance of the facility. The City and County of Honolulu General Plan does not note scenic vistas or viewplanes including the project site.
 13. *The project will not require substantial energy consumption.* The project's construction would not demand substantial energy consumption. No adverse effects would be expected.

For the reasons above, DAGS anticipates that the action will not have any significant effect in the context of Chapter 343, Hawai'i Revised Statutes and Section 11-200-12 of the State Administrative Rules.

8.0 REFERENCES

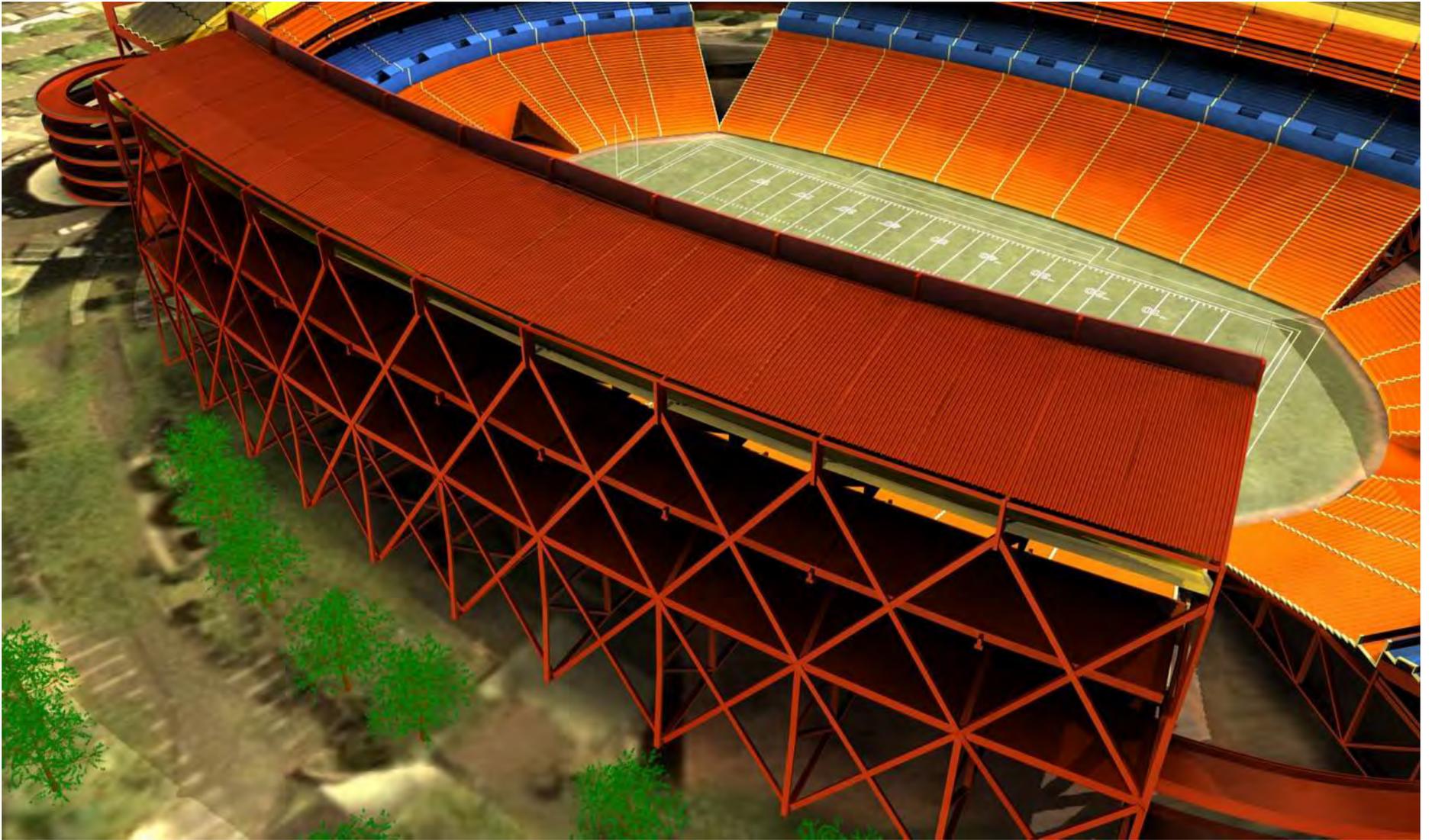
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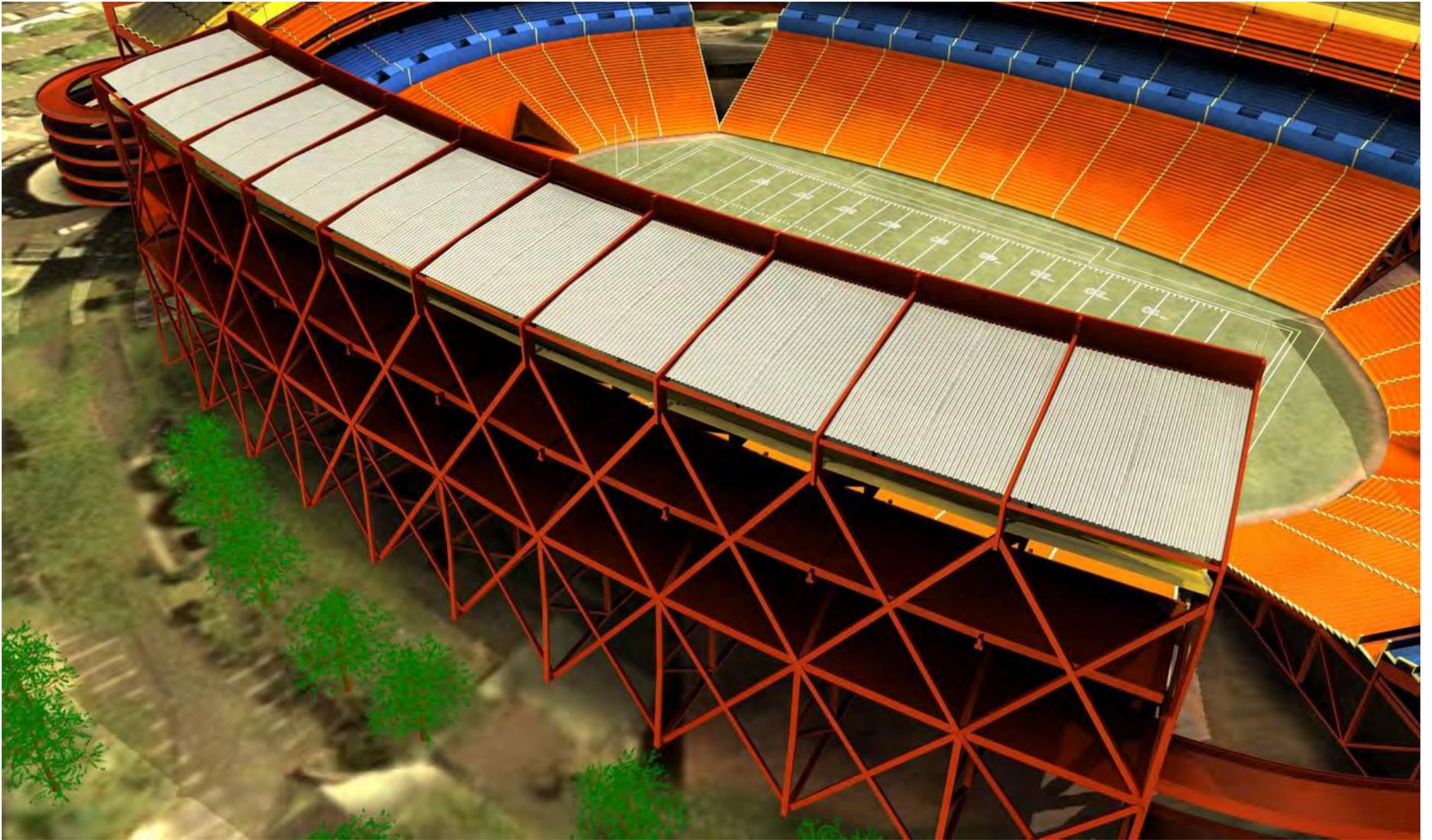
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Appendix A

Color Rendering of Roof Replacement Options



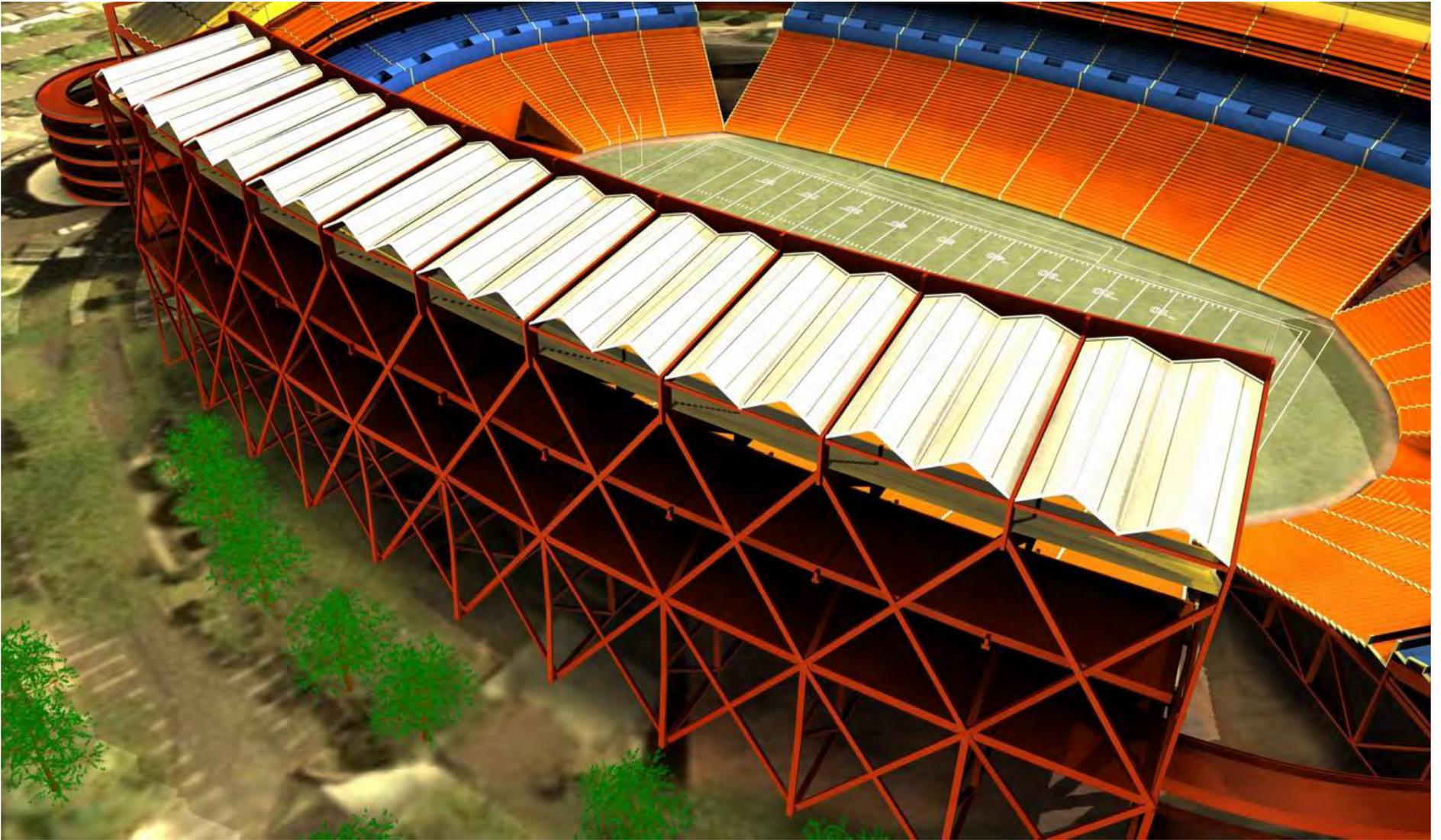
Rendering of Aluminum Roof



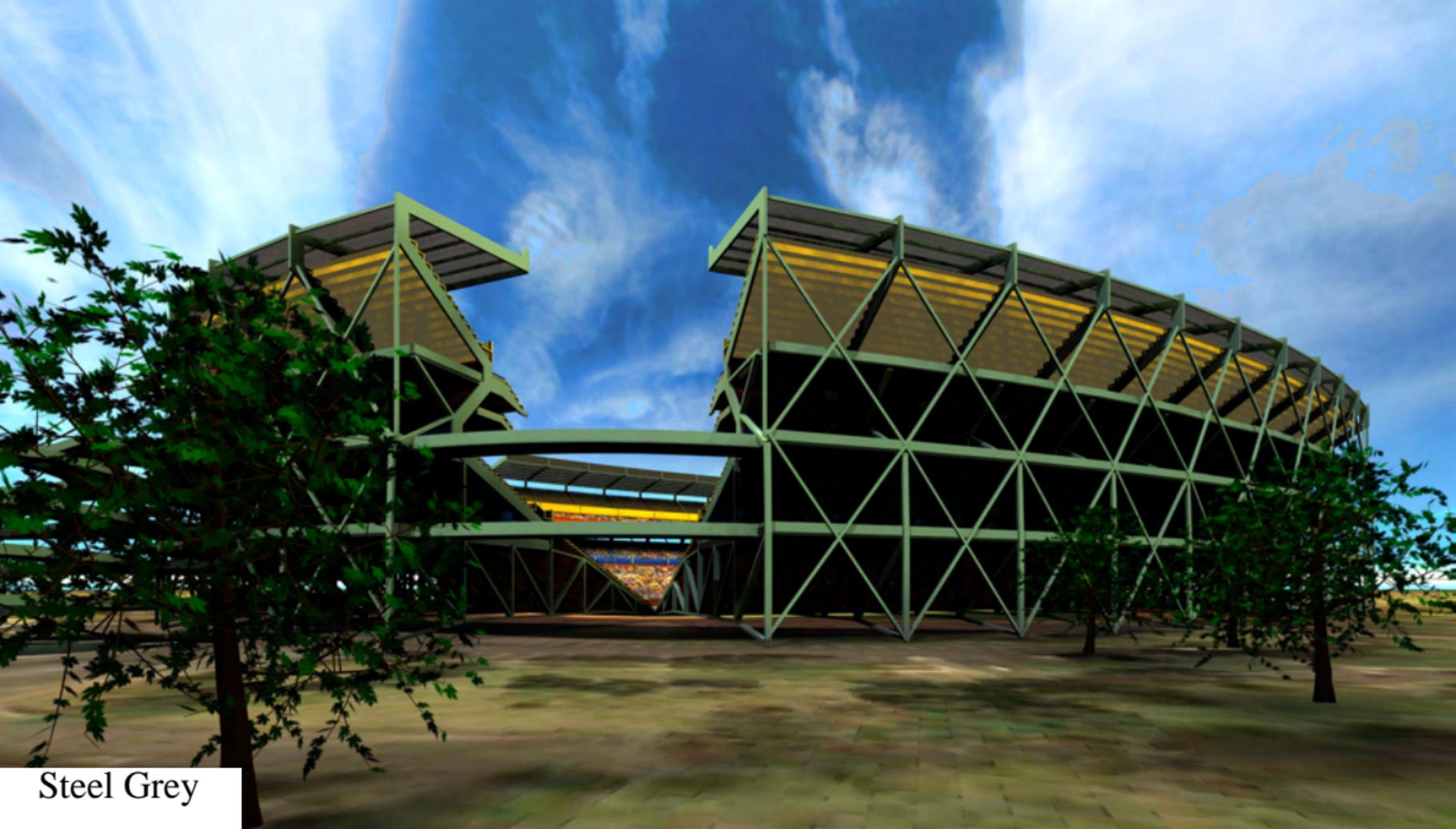
Rendering of Stainless Steel Roof



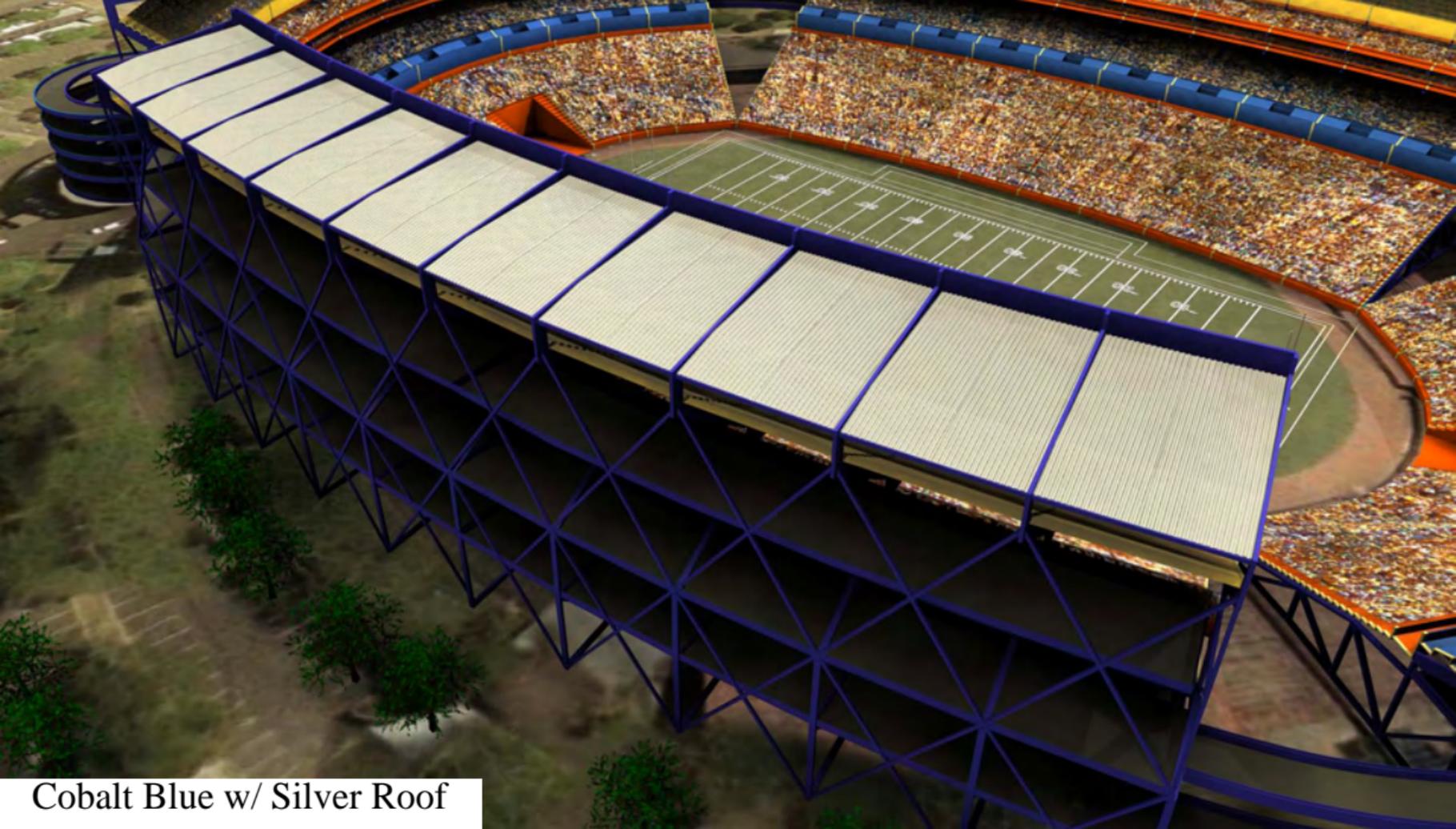
Rendering of Polycarbonate Roof



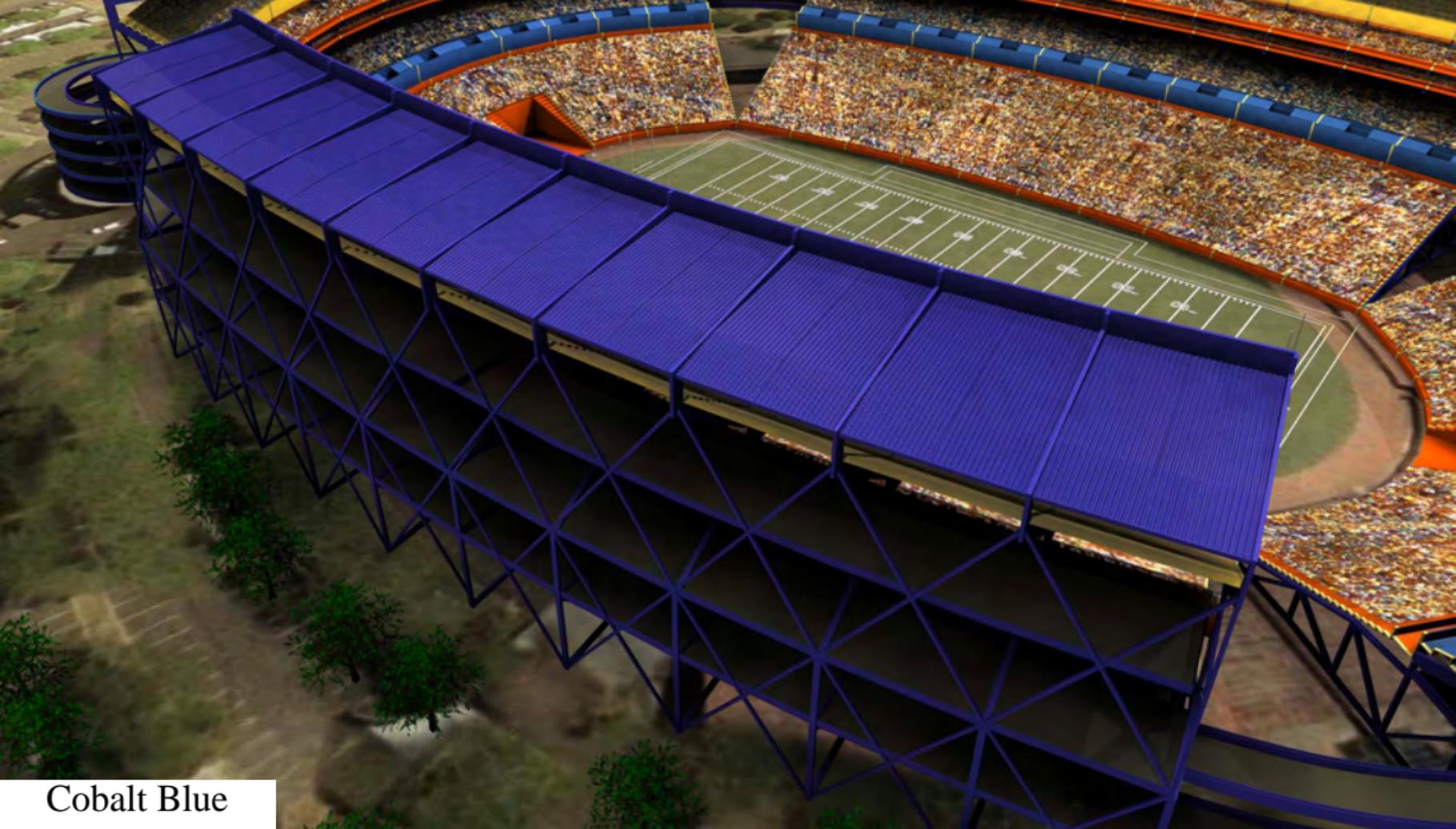
Rendering of Tensile Fabric Roof



Steel Grey



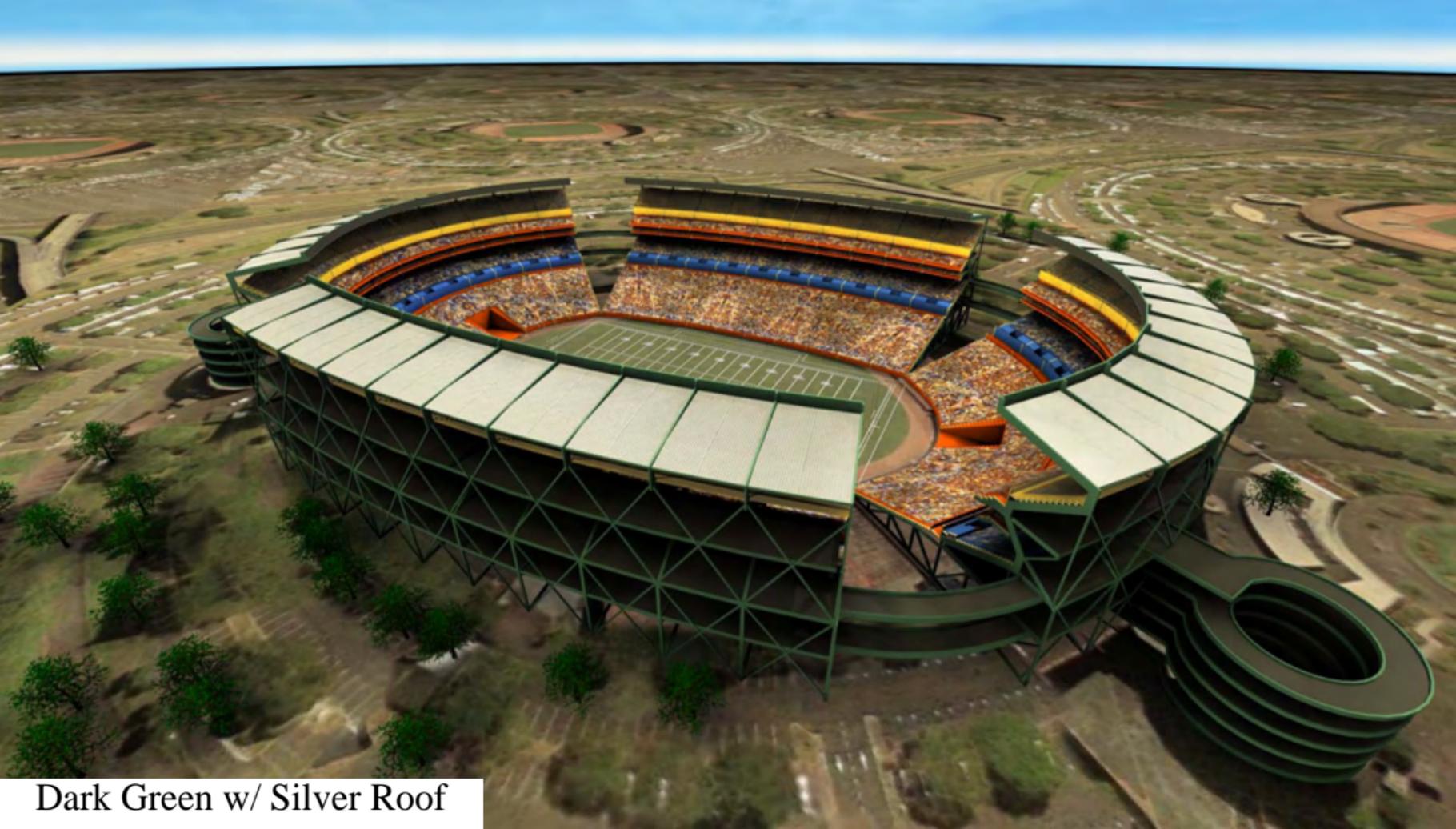
Cobalt Blue w/ Silver Roof



Cobalt Blue



Dark Green w/ Silver Roof



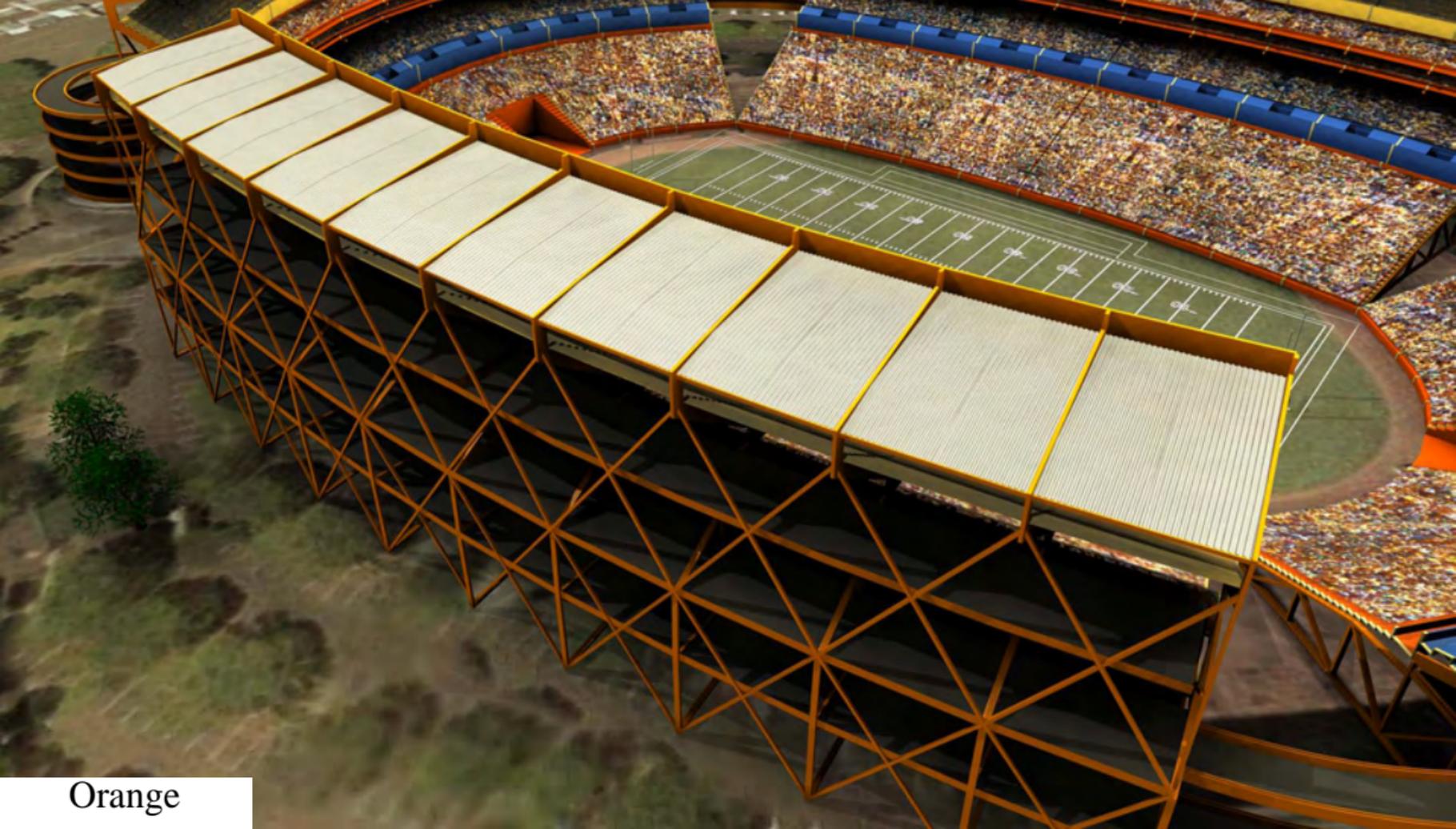
Dark Green w/ Silver Roof



Dark Green



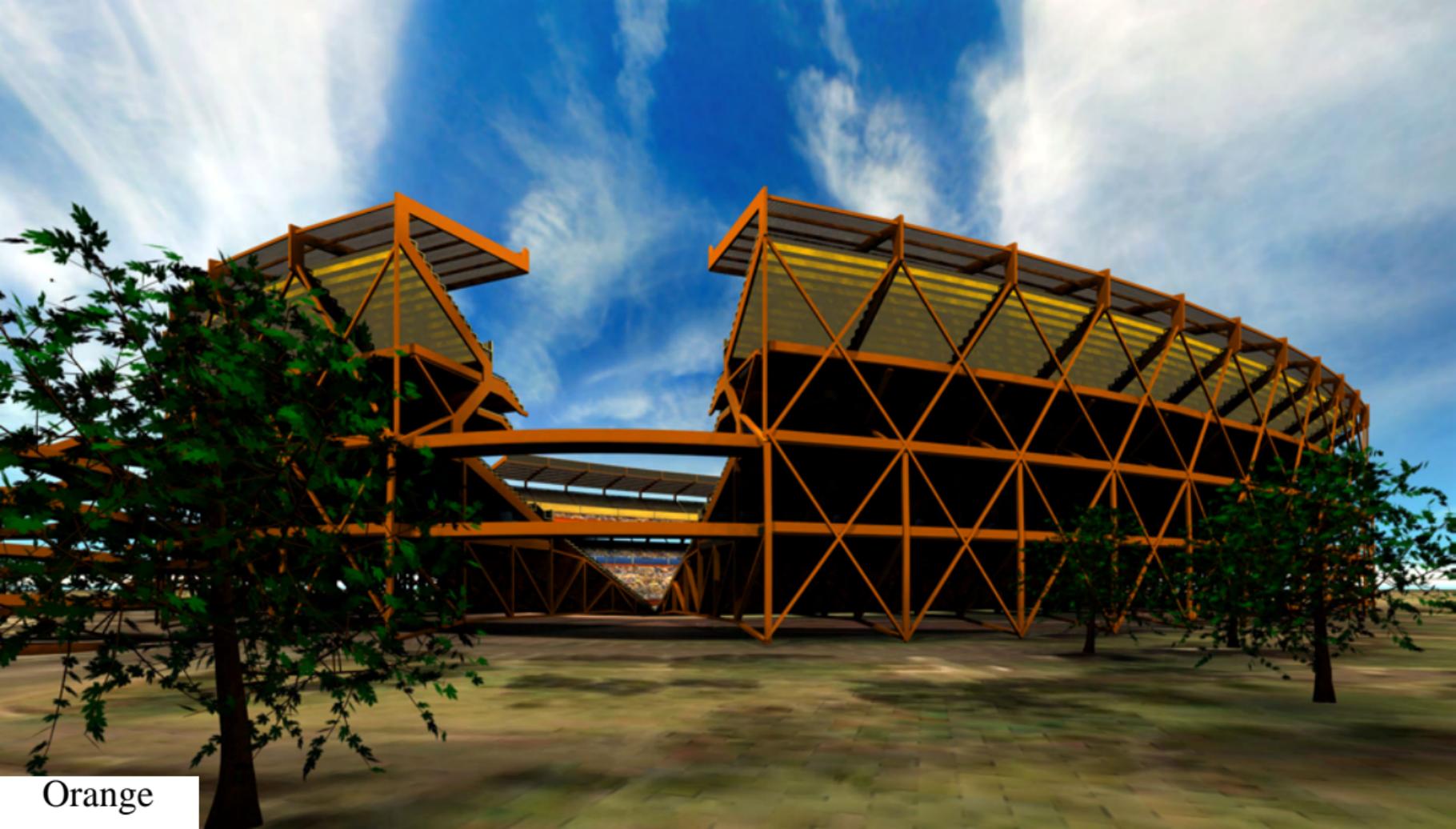
Dark Green



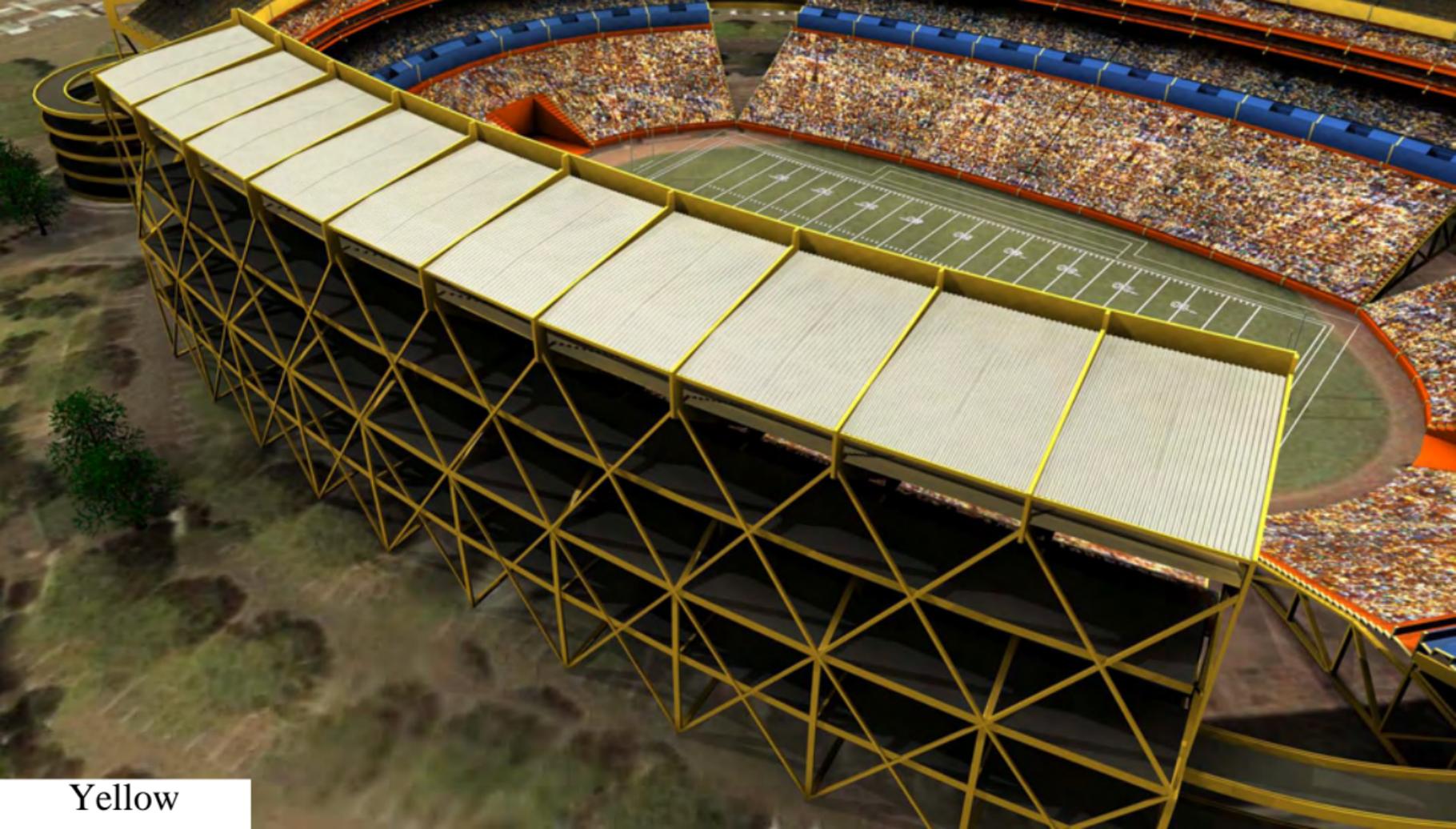
Orange



Orange



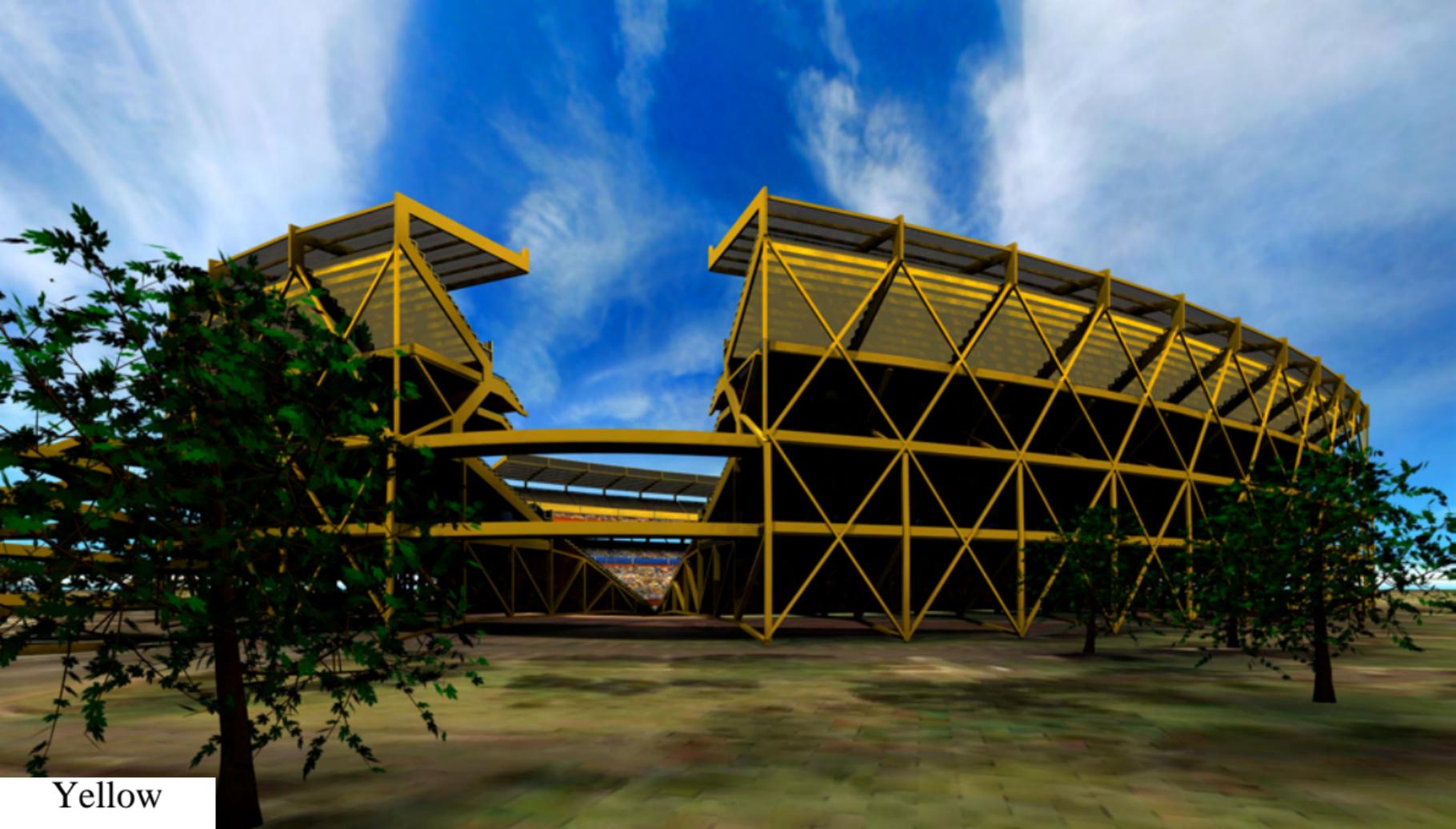
Orange



Yellow



Yellow



Yellow



Yellow

Appendix B

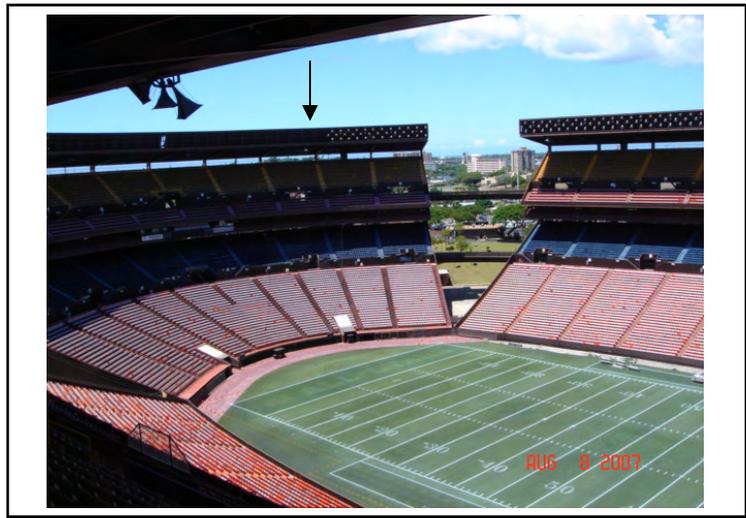
Photographs



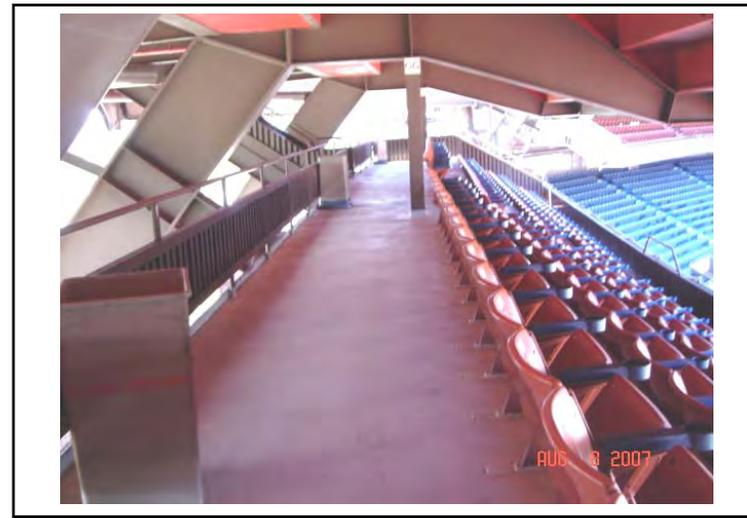
Photograph 1. An exterior view of Aloha Stadium facing north.



Photograph 2. An interior view of North fixed stand and turf field.

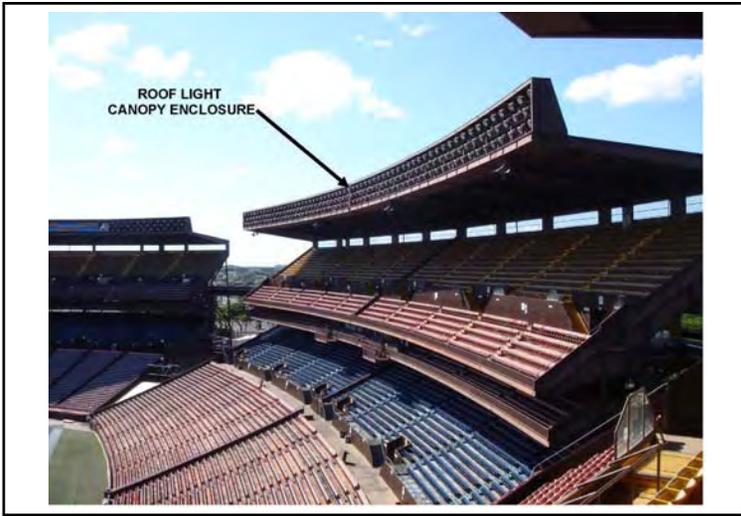


Photograph 3. An interior view of South fixed stand (arrow).



Photograph 4. A view of Loge Level (Press Box Level) aisle.





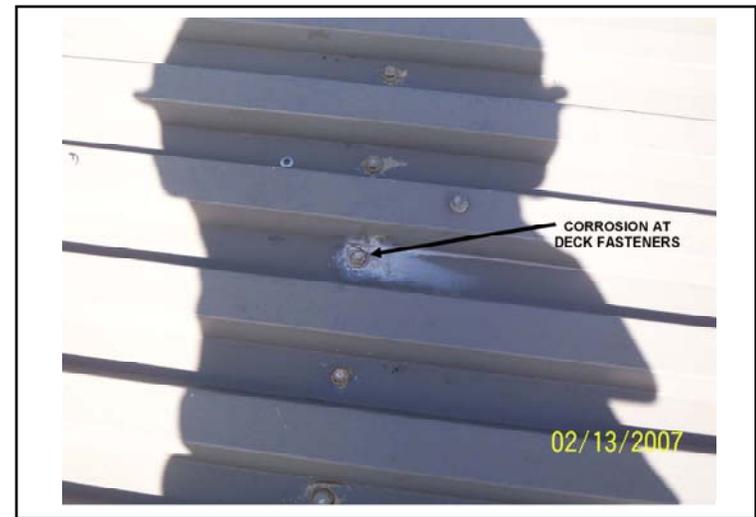
Photograph 5. A view of West movable stand and roof light canopy enclosure.



Photograph 6. A view of roof catwalk at North fixed stand.

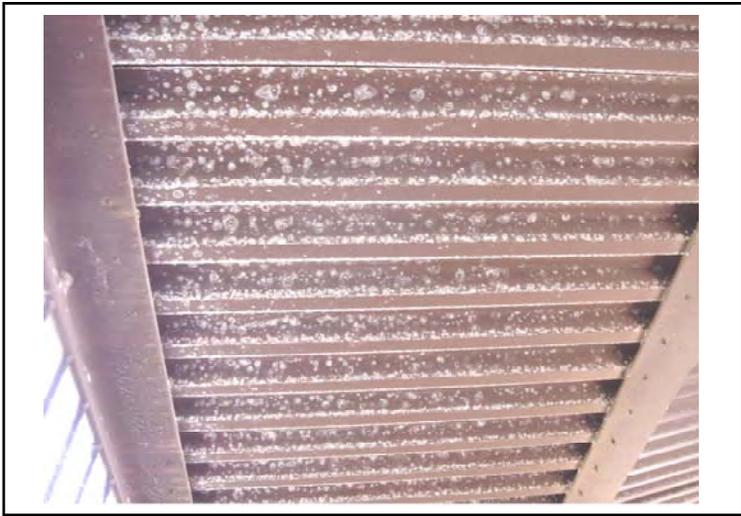


Photograph 7. Underside of roof at joint between NE and SE movable stands.

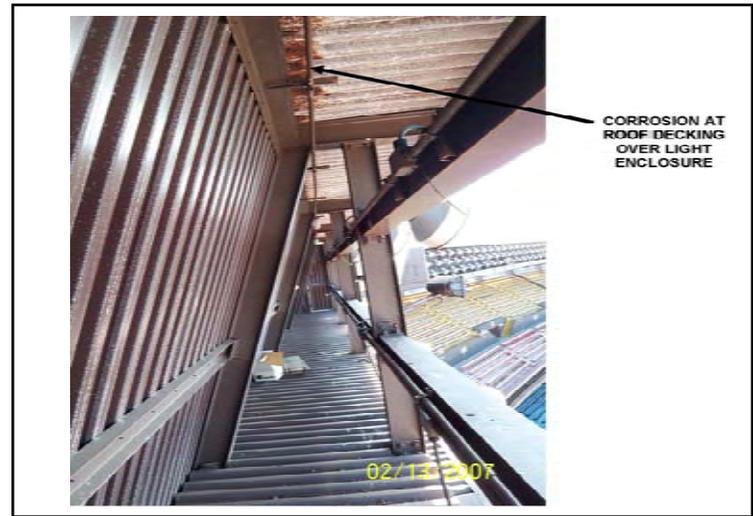


Photograph 8. Roof metal deck over roof framing supports at NE movable stand.





Photograph 9. Corrosion underside of roof decking at North fixed stand.



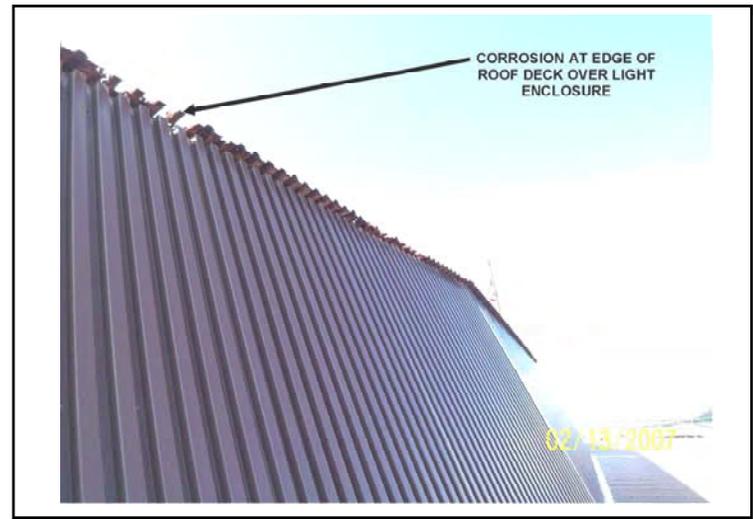
CORROSION AT
ROOF DECKING
OVER LIGHT
ENCLOSURE

Photograph 10. Light canopy enclosure at east side of North fixed stand.



CORROSION AT
ROOF DECKING
OVER LIGHT
ENCLOSURE

Photograph 11. Roof decking panel over light canopy enclosure at North fixed stand.



CORROSION AT EDGE OF
ROOF DECK OVER
LIGHT ENCLOSURE

Photograph 12. Backside of roof light canopy enclosure at east side of North fixed stand.





Photograph 13. Underside of roof of North fixed stand and roof rod bracing.



Photograph 14. Backside of roof at NE movable stand.

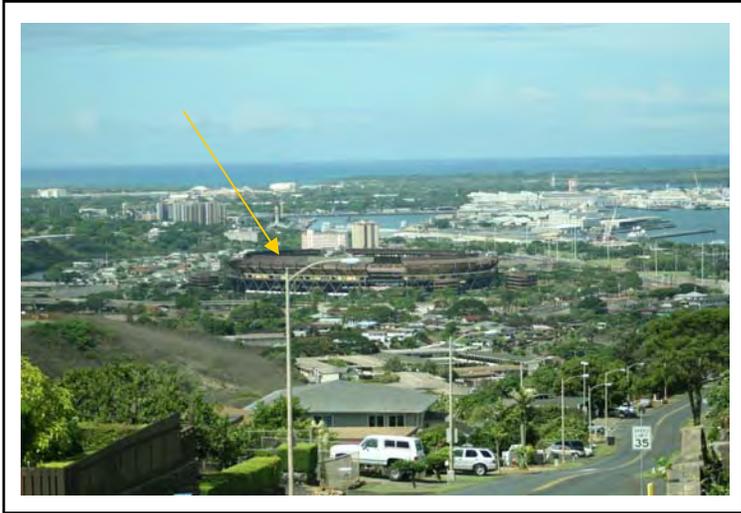


Photograph 15. Open parking lot south of the stadium facing north.



Photograph 16. Full parking lot during the Dec. 1, '07, football event.





Photograph 17. A view from Halawa Heights facing west.



Photograph 18. A view of the stadium from Aiea Heights facing south.



Photograph 19. A view of Aiea Bay facing east. The stadium is in the left background (arrow).



Photograph 20. A view from the Kahuapaani intersection facing northwest. The stadium is shown in the right background (arrow).





Photograph 21. A view of Aiea Elementary School facing northeast.



Photograph 22. A view of St. Elizabeth Elementary School facing north.



Photograph 23. A view, left to right, of the stadium parking/road, Moanalua Highway (center 3-lanes), and Moanalua Road. St. Elizabeth Elementary School is shown in the background (arrow).



Photograph 24. Upstream of Halawa Stream facing west. The stadium is in the background (arrow).





Photograph 25. A view of cemetery in between Aiea Bay and the stadium facing east. The stadium is shown in the background.



Photograph 26. A view of the cemetery shown in Photograph 25 facing north.



Photograph 27. A view of Makalapa neighborhood facing northeast.



Photograph 28. A view of Kalaloa Street homes facing northeast.





Photograph 29. A view of Salt Lake Boulevard and Halawa Stream facing northwest.



Photograph 30. A view of Halawa Stream facing northeast. Salt Lake Boulevard is to the left.



Photograph 31. A view of Moanalua Highway, west bound. The stadium is shown in the background (arrow).



Photograph 32. A view of Moanalua Highway, west bound, and H3 Exit.



Appendix C

Draft EA Pre-Assessment Consultation Documentation

Aloha Stadium Metal Roof Deck Replacement Project
Honolulu, Oahu, Hawaii
Project Summary
March 2007

The State of Hawaii, Department of Accounting and General Services (DAGS), is proposing a Metal Roof Deck Replacement Project at Aloha Stadium in Honolulu, Hawaii. Several sections of the current roof deck show signs of corrosion, and mitigating the corroded surfaces could improve structural stability, aesthetics, and comfort of the fans.

A preliminary site visit was conducted by SSFM International, Inc., on February 13, 2007, to study the existing conditions of the stadium roof in order to develop recommendations for the different options of roof replacement.

The proposed roof replacement project will have two phases. The first phase will involve metal deck replacement, and the second phase consists of replacing the roof. Several options for roof replacement will be considered for in the Draft Environmental Assessment (Draft EA). The existing conditions, project phases, and roof replacement options are summarized below.

Existing Conditions

The existing roof is supported by steel frames cantilevered approximately 60 feet from the backside of the yellow section out to the canopy light enclosure which supports the field lights and speaker system. There are many areas of localized corrosion of the existing metal decking especially at the supports over the roof purlins. The fasteners are also corroded in these areas. The metal decking panels over the top of the light canopy enclosure are severely corroded especially along the back supports on the east side of the North Fixed Stands and the Southeast Movable Stands due the exposure to the trade winds.

Phase 1: Metal Deck Replacement

The demolition phase will address the immediate concerns with the corrosion of the metal decking until the permanent repairs to the roof are performed. Demolition will include the removal of the existing roof metal decking up to the back edge of the light canopy enclosure including the gutter and outer perimeter of the roof. The metal decking panels at the light canopy enclosure will remain to provide protection of the light system and electrical transformers. Where the light enclosure is in good condition, the enclosure will remain as is. Where the metal decking of the enclosure is corroded, we will replace those areas with decking removed from other areas of the roof.

Phase 2: Roof Replacement

Three options for roof replacement will be considered:

Option #1 – No Roof

The most financially feasible option explores the idea of leaving the stadium “as-is” after Phase 1: Metal Deck Removal (described above). In this case, the metal roof decking and gutter would not be replaced, leaving the steel frame exposed. The structure that houses the lights and the catwalks to access those lights would remain. Keeping the metal decking enclosing the light canopy will protect the lights from the elements such as rain and high wind conditions. Removable panels to access the electrical transformers will be added to the backside of the light canopy enclosure. This variation is selected as the “no roof” option that will be considered in the study.

Option #2 – Replace In-Kind

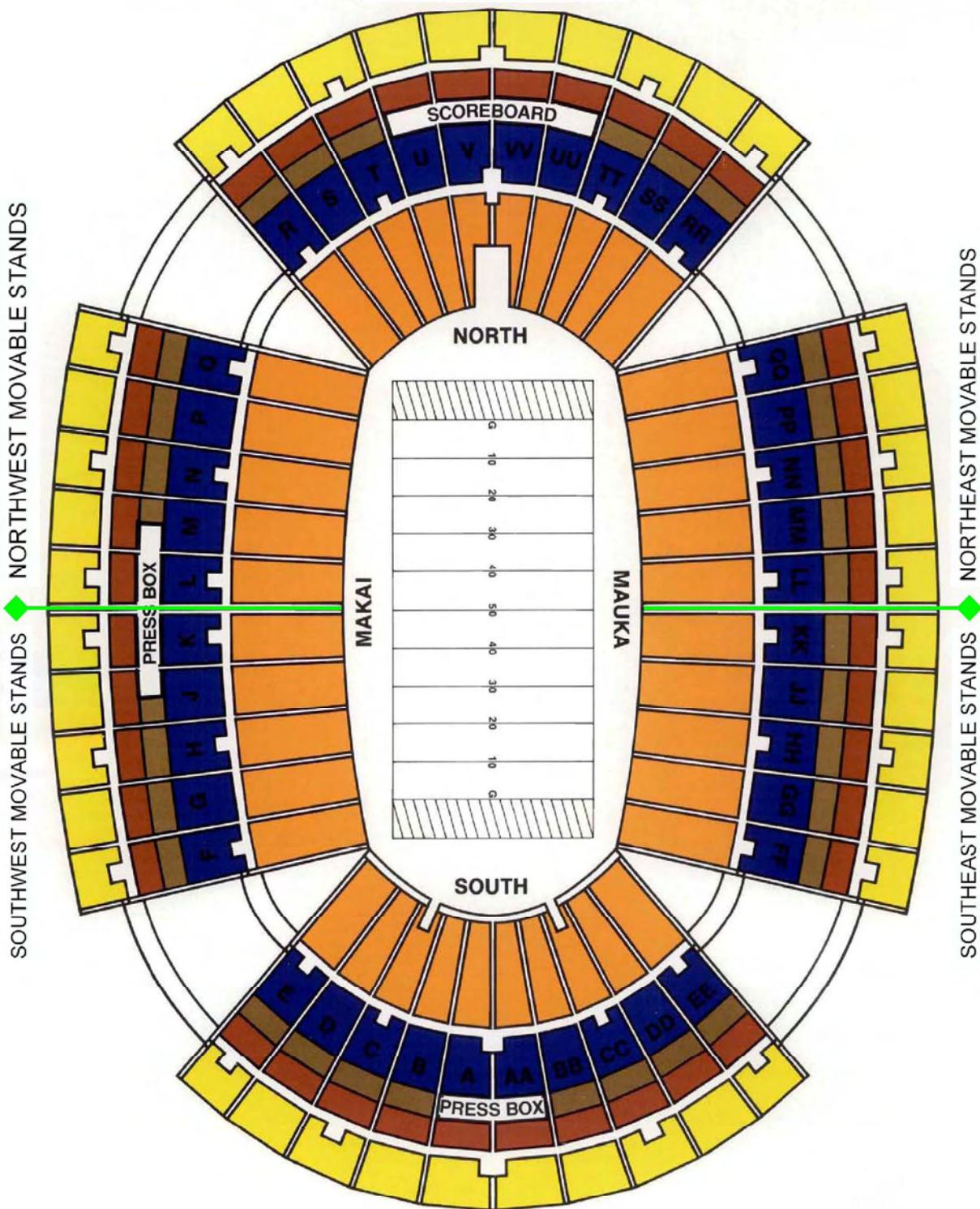
This option would keep the existing structural frame and replace the existing metal decking and gutters, including the metal decking surrounding the light canopy, with stainless steel, aluminum or other material depending on the cost and desired useful life of the roof. Further study is needed to determine which material is more appropriate for longer life and durability. Removable panels will also be installed at the backside of the light enclosure in order to provide access to the electrical transformers.

Option #3 – Replace With Different Material

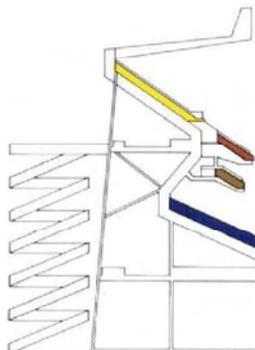
The new material will be a tensile fabric membrane such as the one used at the front of the convention center. The tensile membrane structure would have the greatest visual impact to the stadium. Tensile membrane structure is resistant to extreme temperature and UV rays, non-flammable, has a long life, and is recyclable. These structures are pre-engineered, prefabricated and will be lifted in place to be connected to the existing stadium structure.

ALOHA STADIUM

NORTH FIXED STANDS



SOUTH FIXED STANDS

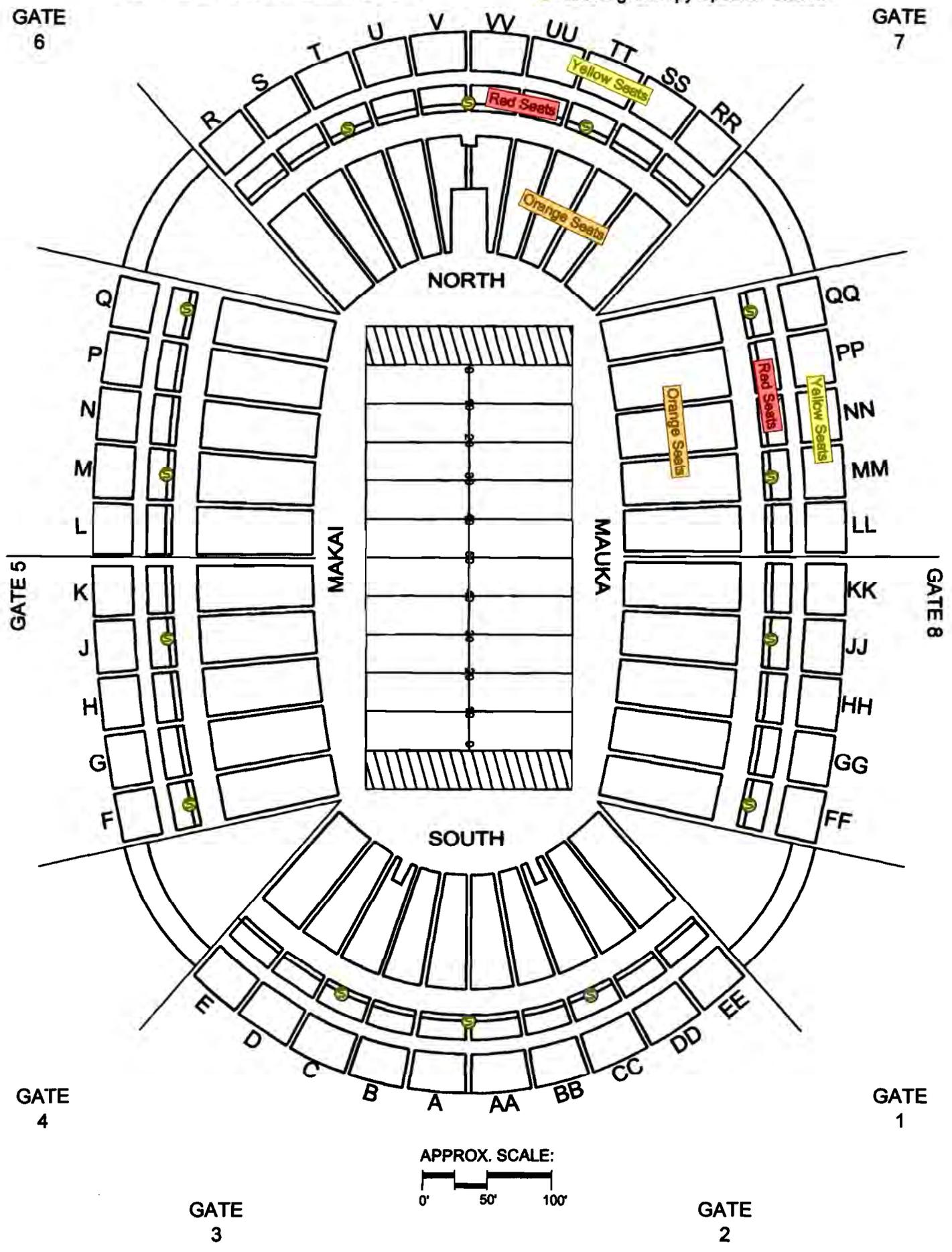


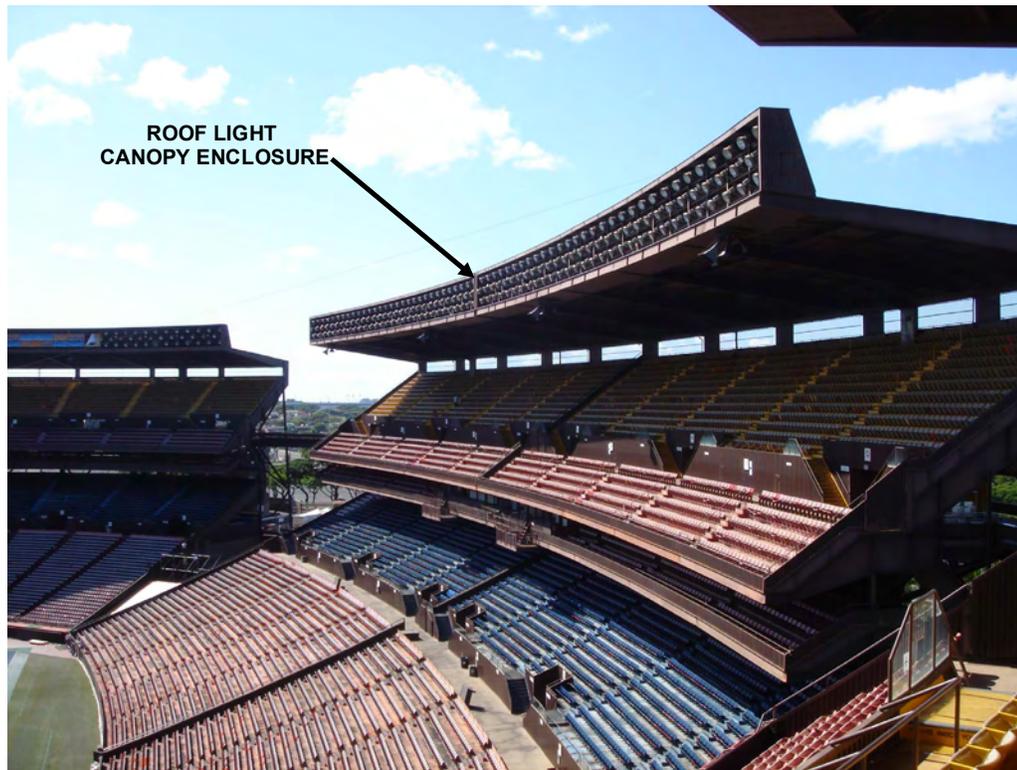
- YELLOW LEVEL—ROWS 6 TO 17
- RED LEVEL—ROWS 1 TO 5
- BROWN LEVEL—ROWS 1 TO 4
- BLUE LEVEL—ROWS 30 TO 46
- ORANGE LEVEL—ROWS 1 TO 29

FIGURE 1 - ALOHA STADIUM MAP

**FIGURE 2 - EXISTING
SPEAKER LAYOUT**

Key:
 Existing Canopy Speaker Cluster





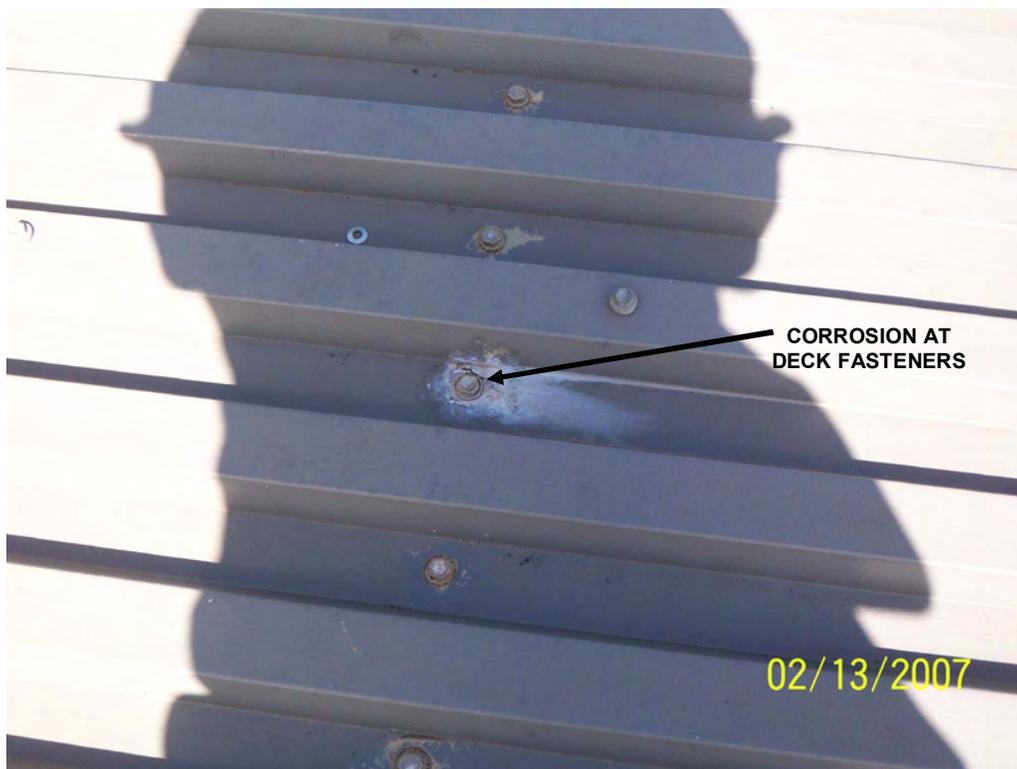
Aloha Stadium – West Movable Stands



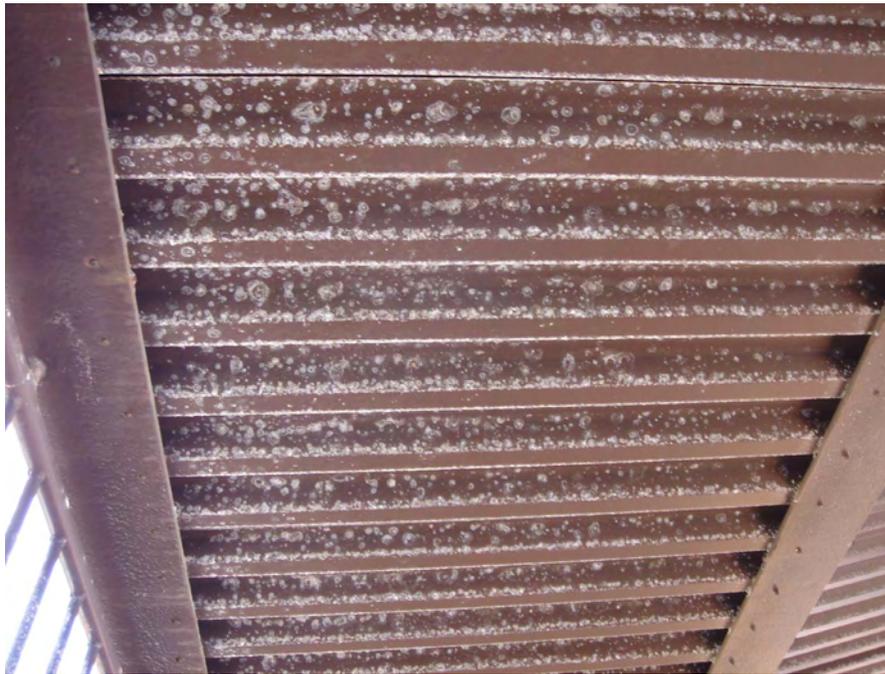
Roof Catwalk at North Fixed Stand



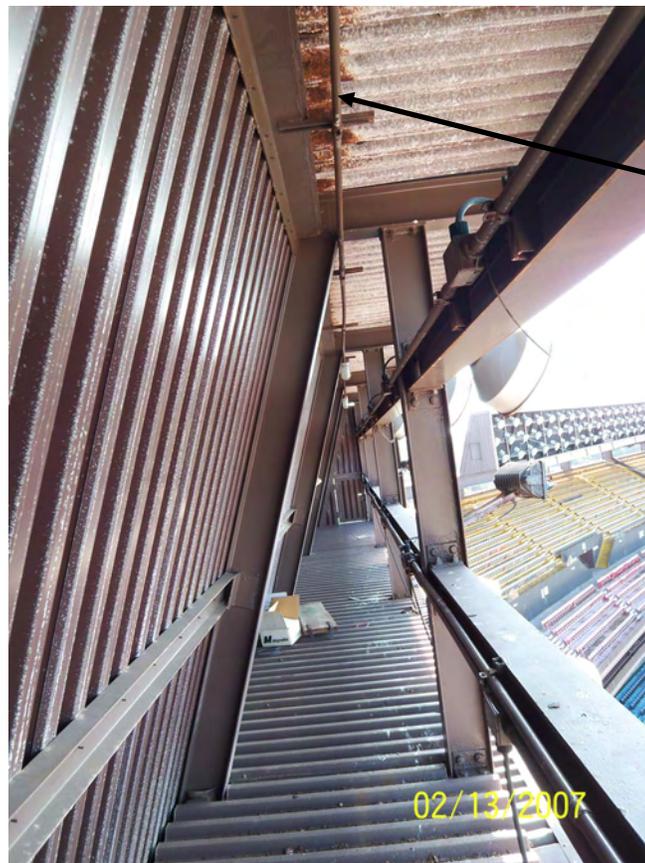
Underside of Roof at Joint Between NE and SE Movable Stand



Roof Metal Deck Over Roof Framing Supports at NE Movable Stand

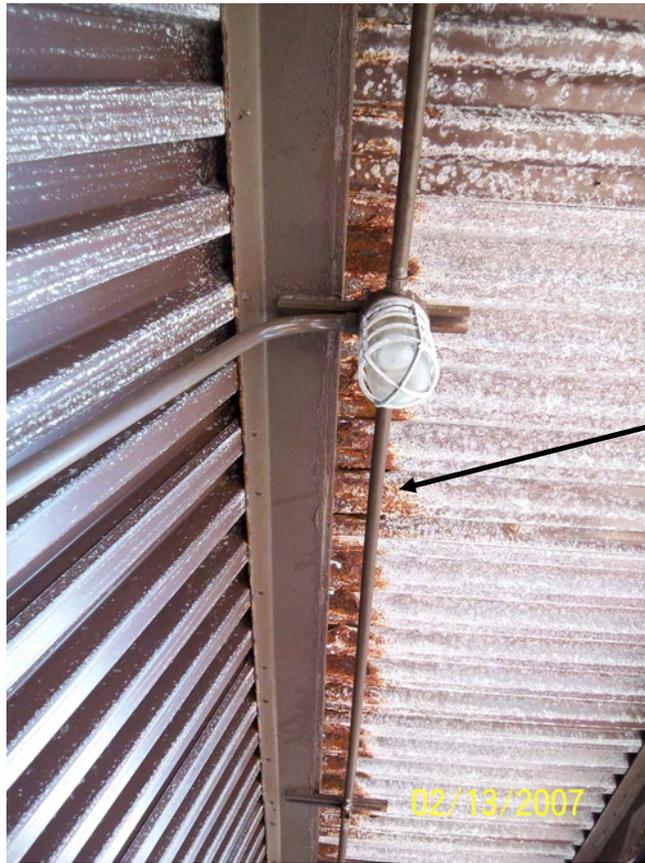


Corrosion at Underside of Roof Decking at North Fixed Stand



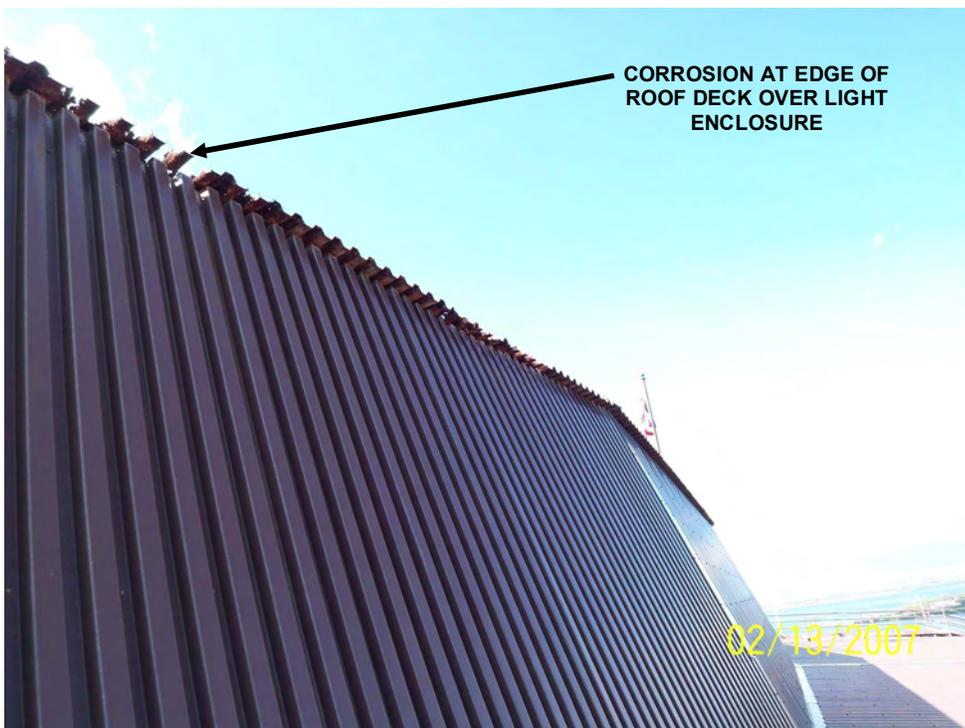
**CORROSION AT
ROOF DECKING
OVER LIGHT
ENCLOSURE**

Light Canopy Enclosure at East Side of North Fixed Stand



**CORROSION AT
ROOF DECKING
OVER LIGHT
ENCLOSURE**

Roof Decking Panel Over Light Canopy Enclosure at North Fixed Stand



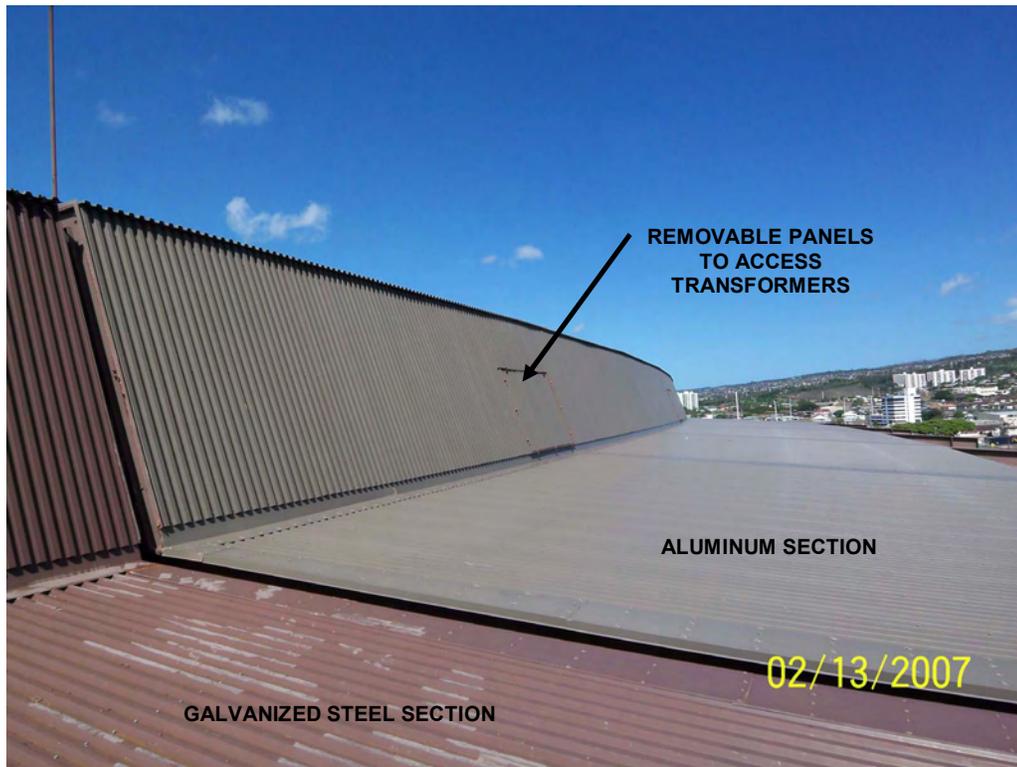
**CORROSION AT EDGE OF
ROOF DECK OVER LIGHT
ENCLOSURE**

Backside of Roof Light Canopy Enclosure at East Side of North Fixed Stand



ROOF ROD BRACING

Underside of Roof of North Fixed Stand



REMOVABLE PANELS
TO ACCESS
TRANSFORMERS

ALUMINUM SECTION

GALVANIZED STEEL SECTION

02/13/2007

Backside of Roof at Northeast Movable Stands



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

April 13, 2007

Regulatory Branch

File No. **POH-2007-123**

Joanna Boyette, Project Manager
Myounghee Noh & Associates, LLC
99-1046 Iwaena Street
Aiea, Hawaii 96701

Dear Ms. Boyette:

This responds to your Pre-Assessment Consultation letter dated March 16, 2007, for the proposed Aloha Stadium Metal Roof Deck Replacement Project, Oahu. We have reviewed the project information you provided with respect to the Corps' authority to issue Department of the Army (DA) permits pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344).

All work or structures in or affecting the course, condition, location or capacity of navigable waters, including tidal wetlands, require DA authorization pursuant to Section 10. In addition, activities involving the discharge of dredged or fill material into waters of the United States, including adjacent wetlands, require a DA permit pursuant to Section 404.

Your letter, project summary, and site map indicate that, although the overall Aloha Stadium site includes a portion of Halawa Stream, your proposed activity would involve only the stadium structure and associated uplands. Based on this understanding, I have determined that the proposed project would not involve any activity in areas subject to the regulatory authority of the Corps; therefore, a DA permit will not be required.

Should you have questions concerning this determination, please contact Mr. Peter Galloway via e-mail (peter.c.galloway@usace.army.mil); by telephone at (808) 438-8416; or by fax at (808) 438-4060. Written inquiries should cite the file number above and be sent to: Regulatory Branch (CEPOH-EC-R/P. Galloway); U.S. Army Engineer District, Honolulu; Building 230; Fort Shafter, Hawaii 96858-5440.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 523-4730 • Internet: www.honolulu.gov

MUFI HANNEMANN
MAYOR



MELVIN N. KAKU
DIRECTOR

RICHARD F. TORRES
DEPUTY DIRECTOR

TP3/07-200206R

April 11, 2007

Ms. Joanna Boyette, Project Manager
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, 210A
Aiea, Hawaii 96701

Dear Ms. Boyette:

Subject: Aloha Stadium Metal Roof Deck Replacement Project

Thank you for your letter dated March 16, 2007, requesting our pre-assessment comments on the subject project. At this time we have no comments to offer for your consideration as you prepare the environmental assessment.

Should you have any questions regarding this matter, please contact Ms. Faith Miyamoto of the Transportation Planning Division at 768-8350.

Sincerely,

A handwritten signature in black ink, appearing to read "Melvin N. Kaku", with a long horizontal line extending to the right.

MELVIN N. KAKU
Director

LINDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

March 30, 2007

Ms. Joanna Boyette
Project Manager
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, 210A
Aiea, Hawaii 96701

LOG NO: 2007.1006
DOC NO: 0703ST13
Architecture

Dear Ms. Boyette:

**SUBJECT: Chapter 6E-8 (HRS) Review
Metal Roof Deck Replacement Project - Pre-Assessment Consultation
Aloha Stadium
99-500 Salt Lake Boulevard
Honolulu, Oahu, Hawaii
TMK: (1) 9-9-003:061**

Thank you for the submittal received March 17, 2007. This is a pre-assessment consultation submittal for replacement of the metal roof deck of Aloha Stadium located in Honolulu on the Island of Oahu. The Stadium was built in the 1970s and is not listed on the Hawaii and the National Registers of Historic Places. There is no excavation work involved in the project.

The structure is less than 50 years old and there is no ground disturbance involved. Therefore, we believe that the determination for the proposed project is "no historic properties affected."

Thank you for the opportunity to comment. Should you have any questions regarding architecture concerns please call Susan Tasaki at (808) 692-8032.

Aloha,


Melanie A. Chinen, Administrator
State Historic Preservation Division

ST:rtp

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

MUFI HANNEMANN
MAYOR



KENNETH G. SILVA
FIRE CHIEF

ALVIN K. TOMITA
DEPUTY FIRE CHIEF

April 3, 2007

Ms. Joanna Boyette, Project Manager
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, Unit 210A
Aiea, Hawaii 96701

Dear Ms. Boyette:

Subject: Preassessment Consultation
Aloha Stadium Metal Roof Deck Replacement Project
Aiea, Oahu, Hawaii
Tax Map Key: 9-9-003: 061

In response to your letter dated March 16, 2007, regarding the above-mentioned subject, the Honolulu Fire Department reviewed the material you provided and foresees no adverse impact to fire department services.

Should you have any questions, please call Battalion Chief Lloyd Rogers of our Fire Prevention Bureau at 723-7151.

Sincerely,

A handwritten signature in cursive script, appearing to read "Kenneth G. Silva".

KENNETH G. SILVA
Fire Chief

KGS/SK:bh

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8481 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR
CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

April 4, 2007

Ms. Joanna Boyette, Project Manager
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, Room 210A
Aiea, Hawaii 96701

Dear Ms Boyette:

Subject: Aloha Stadium Metal Roof Deck Replacement Project
Pre-Assessment Consultation

Thank you for giving us the opportunity to comment on the above project.

The Department of Design and Construction has no comments to offer at this time.

Very truly yours,



Eugene C. Lee, P.E.
Director

ECL:lt (200205)

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 692-5054 • Fax: (808) 692-5857
Website: www.honolulu.gov

MUFI HANNEMANN
MAYOR



LAVERNE HIGA, P.E.
DIRECTOR AND CHIEF ENGINEER

GEORGE "KEOKI" MIYAMOTO
DEPUTY DIRECTOR

DRM 07-295

March 27, 2007

Ms. Joanna Boyette
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, Suite 210A
Aiea, Hawaii 96701

Dear Ms. Boyette:

**Subject: Aloha Stadium Metal Roof Deck Replacement Project
Pre-Assessment Consultation**

Thank you for giving us the opportunity to review the information provided with your letter of March 16, 2007, regarding the subject project. We have no comments to offer at this time.

Should there be any questions, please call Larry Leopardi, Chief of the Division of Road Maintenance, at 484-7600.

Sincerely,

A handwritten signature in cursive script that reads "Laverne Higa".

Laverne Higa, P.E.
Director and Chief Engineer

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU

KAPOLEI HALE • 1000 ULUOHIA STREET, SUITE 309 • KAPOLEI, HAWAII 96707
TELEPHONE: (808) 692-5561 • FAX: (808) 692-5131 • INTERNET: www.honolulu.gov



MUFI HANNEMANN
MAYOR

LESTER K.C. CHANG
DIRECTOR

DANA TAKAHARA-DIAS
DEPUTY DIRECTOR

March 30, 2007

Ms. Joanna Boyette, Project Manager
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, 210A
Aiea, Hawaii 96701

Dear Ms. Boyette:

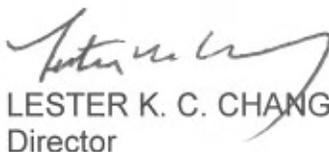
Subject: Aloha Stadium Metal Roof Deck Replacement Project
Pre-Assessment Consultation

Thank you for the opportunity to review and comment at the Pre-Assessment stage of the environmental review of the Aloha Stadium Metal Roof Deck Replacement Project.

The Department of Parks and Recreation has no comment and as this project will not impact any program or facility of this department, you are invited to remove us as a consulted party to the balance of the EIS process.

Should you have any questions, please contact Mr. John Reid, Planner, at 692-5454.

Sincerely,


LESTER K. C. CHANG
Director

LKCC:mk
(200375)



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

BARRY FUKUNAGA
INTERIM DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.2440

March 29, 2007

Ms. Joanna Boyette
Project Manager
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, 210A
Aiea, Hawaii 96701

Dear Ms. Boyette:

Subject: Aloha Stadium Metal Roof Deck Replacement Project
Pre-Assessment Consultation

Thank you for your March 16, 2007, transmittal requesting our review of the subject project.

The proposed action will not impact our State transportation facilities.

We appreciate the opportunity to provide comments.

Very truly yours,

A handwritten signature in black ink, appearing to read "Barry Fukunaga", written over the typed name.

BARRY FUKUNAGA
Interim Director of Transportation

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honolulupd.org

MUFI HANNEMANN
MAYOR



BOISSE P. CORREA
CHIEF

GLEN R. KAJIYAMA
PAUL D. PUTZULU
DEPUTY CHIEFS

OUR REFERENCE **BS-DK**

March 27, 2007

Ms. Joanna Boyette
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, 210A
Aiea, Hawaii 96701

Dear Ms. Boyette:

This is in response to your letter of March 16, 2007, requesting comments on a Pre-Assessment Consultation for the Aloha Stadium Metal Roof Deck Replacement project.

This project should have no significant impact on the facilities or operations of the Honolulu Police Department.

If there are any questions, please call Major Debora Tandal of District 3 at 455-9055 or Mr. Brandon Stone of the Executive Office at 529-3644.

Sincerely,

BOISSE P. CORREA
Chief of Police

By

A handwritten signature in black ink, appearing to read "John P. Kerr".

JOHN P. KERR
Assistant Chief of Police
Support Services Bureau

LINDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR

AQUATIC RESOURCES
BEACHES AND OCEAN RECREATION
BUREAU OF CONSERVANCIES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAIKOLAUI LAND RESERVE COMMISSION
LAND
STATE PARKS



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 23, 2007

Ms. Joanna Boyette
Project Manager
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena stree, 210A
Aiea, Hawaii 96701

Dear Ms. Boyette:

Subject: Aloha Stadium Metal Roof Deck Replacement Project.

Thank you for your request for comments on the Aloha Stadium Metal Roof Deck Replacement Project. We have reviewed the project summary and have no comments.

Should you have any questions, please call us at 587-0433.

Sincerely,

A handwritten signature in cursive script that reads "Cecil Santos".

Cecil Santos
Oahu District Land Agent

c: Board Member
District Files A small handwritten mark, possibly initials or a signature, next to the text "District Files".

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



March 21, 2007

MUFI HANNEMANN, Mayor

RANDALL Y. S. CHUNG, Chairman
HERBERT S. K. KAOPUA, SR.
SAMUEL T. HATA
ALLY J. PARK
ROBERT K. CUNDIFF

LAVERNE T. HIGA, Ex-Officio
BARRY FUKUNAGA, Ex-Officio

CLIFFORD P. LUM
Manager and Chief Engineer

DEAN A. NAKANO
Deputy Manager and Chief Engineer

Ms. Joanna Boyette
Project Manager
Myounghee Noh & Associates, LLC
99-1046 Iwaena Street, 210A
Aiea, Hawaii 96701

Dear Ms. Boyette:

Subject: Your Letter Dated March 16, 2007 Regarding Aloha Stadium Metal Roof
Deck Replacement Project Pre-Assessment Consultation

Thank you for the opportunity to comment on the proposed project.

The Board of Water Supply does not have any facilities within the Aloha Stadium, and thus does not have any comments or objections to the proposed project.

If you have any questions, please contact Robert Chun at 748-5440.

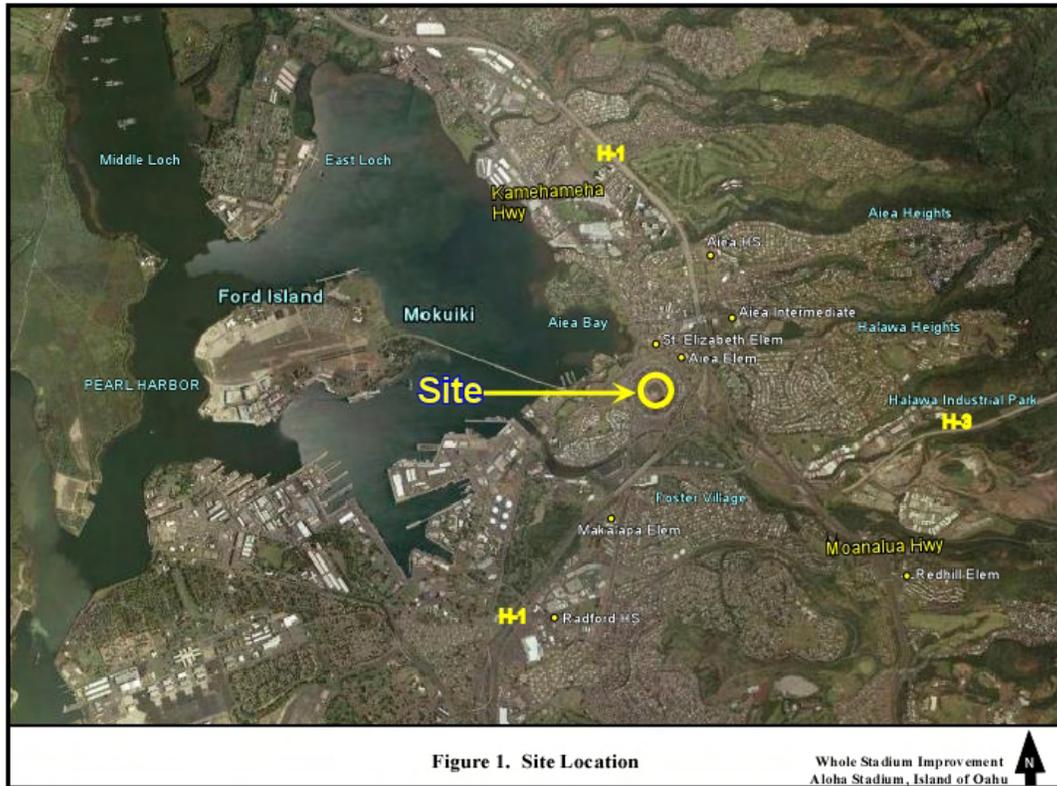
Very truly yours,

KEITH S. SHIDA
Principal Executive
Customer Care Division

Project Summary
Whole Stadium Improvement at Aloha Stadium
TMK (1) 9-9-003:061
99-500 Salt Lake Boulevard, Honolulu, Oahu, Hawaii

December 12, 2007

The State of Hawaii, Department of Accounting and General Services (DAGS), is proposing a Whole Stadium Improvement at Aloha Stadium in Honolulu, Hawaii.

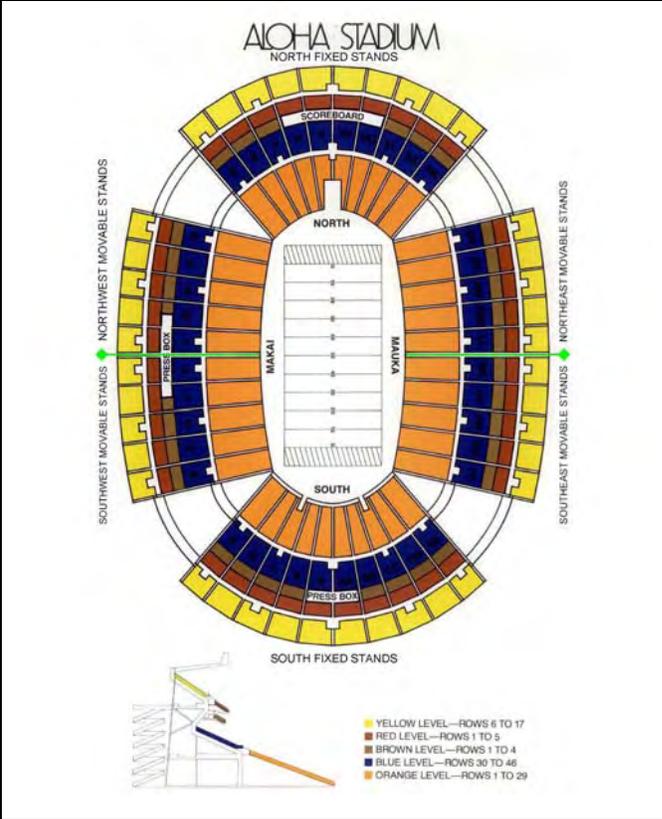


In 2005, Wiss, Janney, Elstner Associates, Inc. (WJE), performed a condition survey for Aloha Stadium in December 2005 and found a number of deficiencies. Critical among these findings was that sections of the galvanized steel roof are in the advanced stages of corrosion, placing the safety of the public at risk due to the potential for structural failure. This situation necessitates replacement of the roof structure.

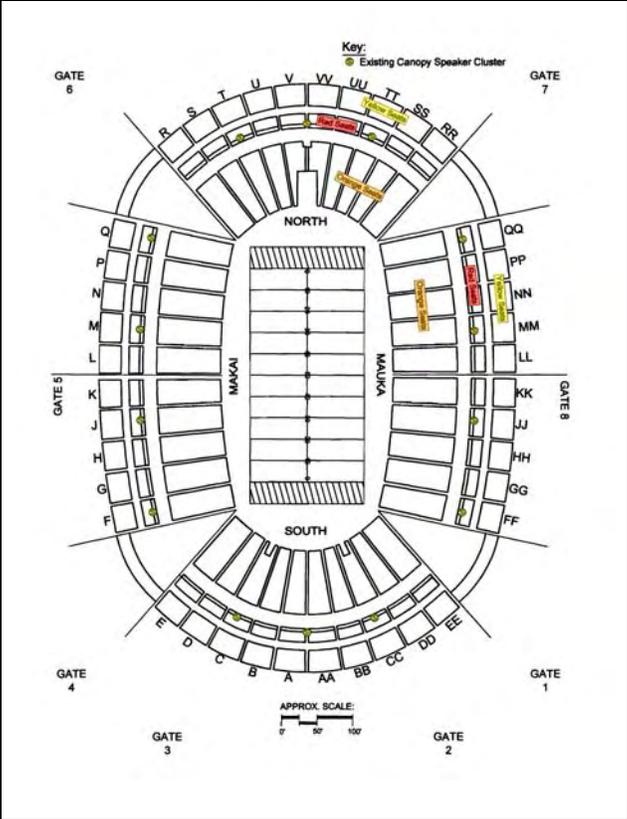
The WJE survey also revealed other major elements of the stadium that require immediate attention, or repair, in order to support a projected useful life of 30 years. The findings included:

- Corrosion protection systems for exposed steel elements, including the curved pedestrian bridge deflections
- Water damage to the seating bowl and concourses
- Severely deteriorated concrete-and-metal deck
- Inadequate safety guardrails and passenger elevators

- Inadequate fire alarm system
- Inadequate restrooms
- Poor parking lot pavement



Aloha Stadium Map



Existing Speaker Layout



Photograph 1. Aloha Stadium – West movable stand.



Photograph 2. Roof catwalk at north fixed stand.



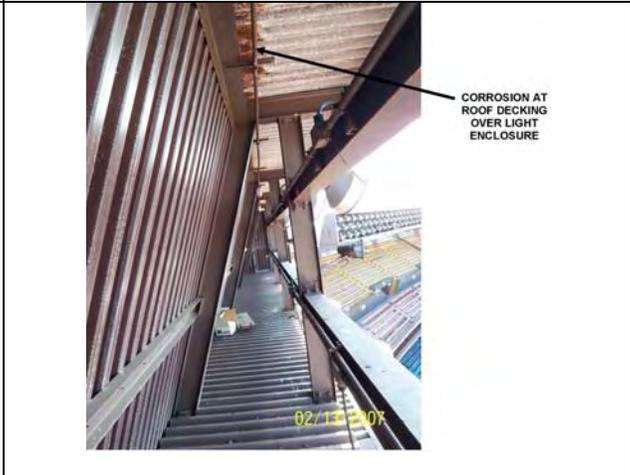
Photograph 3. Underside of roof at joint between NE and SE movable stand



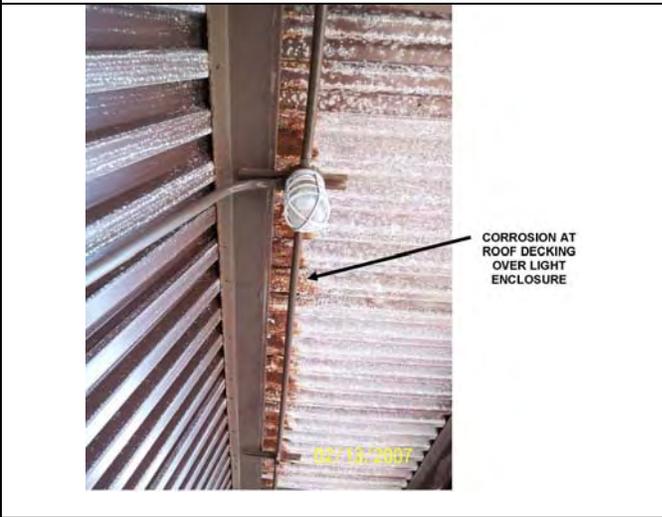
Photograph 4. Roof metal deck over roof framing supports at NE movable stand.



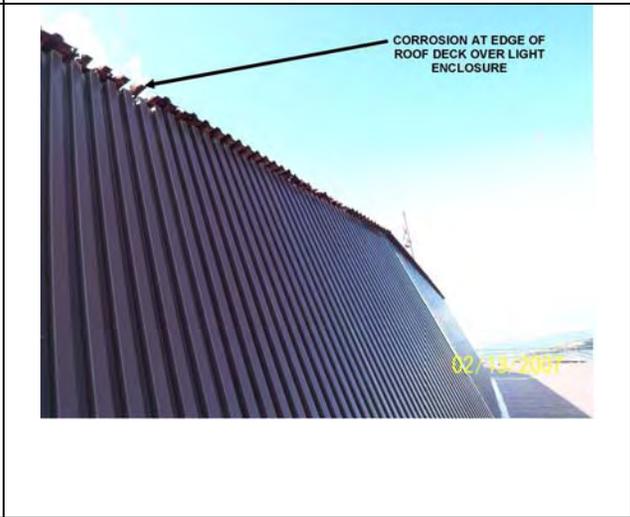
Photograph 5. Corrosion underside of roof decking at north fixed stand.



Photograph 6. Light canopy enclosure at east side of north fixed stand.



Photograph 7. Roof decking panel over light canopy enclosure at north fixed stand.



Photograph 8. Backside of roof light canopy enclosure at east side of north fixed stand.



Photograph 9. Underside of roof of north fixed stand.



Photograph 10. Backside of roof at NE movable stand.

Repair, addition, and enhancements to these elements will improve public safety, aesthetics, and longevity of the stadium. The WJE survey also considered conceptual options to enhance the spectator attractiveness of Aloha Stadium and hence its revenue producing potential; DAGS intends to implement a set of these improvement options, and these are therefore discussed in the Environmental Assessment as follows:

- Roof replacement
- Other improvements
- Stadium enhancement

ROOF REPLACEMENT

The roof deck replacement will address the immediate concerns with the corrosion of the metal decking. This phase will include the removal of the existing roof metal decking up to the back edge of the light canopy enclosure including the gutter and outer perimeter of the roof. The metal decking panels at the light canopy enclosure would remain to provide protection of the light system and electrical transformers. Where the light enclosure is in good condition, the enclosure may remain as is. The roof will be replaced with a baked fluorocarbon-finished aluminum deck.

Steel rod bracing would need to be installed at the back half of the cantilevered frames to resist the lateral forces in the metal decking which act as a diaphragm. Rod bracing was installed with a previous project to the metal roof panels in 1988. However, the rod bracing located at the back half of the frames was removed to allow the replacement of roof decking in the following years.

OTHER IMPROVEMENTS

The action would include a variety of options including:

- Improvement of internal and external signage
- Replacement of seating
- Replacement or repair of corroded drainpipes, plumbing and HVAC insulation
- Repair cracks in concrete slab
- Structural and nonstructural repairs and coatings
- Bridge stiffening

- Strengthen bridge guardrails with additional secondary steel members
- Recoating of stair railings and correct heights
- Resurfacing of walkways
- Addition of elevators
- ADA improvements
- Parking lot improvements
- Recoating of utilities and other nonstructural steel components
- Miscellaneous improvements on light fixtures, water fountains, concession stands, seating aisles, concourses, toilets, other items

STADIUM ENHANCEMENT

Lower Bowl 50 Yardline Suite Addition

This option adds a total of 12 suites between the two sideline main stairs at the back of the lower bowl. Approximately 308 existing seats at the back of the upper bowl would be eliminated to accommodate a new raised floor that provides unobstructed views for suite patrons. Exclusive access would be provided to the suites via new passenger elevators that would serve the exterior suite corridor as well as providing disabled access to the other seating levels.

The suites feature two rows of upgraded 24 inch-wide padded stadium chairs with one row of bar stools behind a drink rail, private toilets, refrigerator, ice maker, and counter space for serving catered food and beverages. A hospitality area would include lounge seating. Four suites would hold 18 stadium seats and 9 barstools, four sites would hold 18 stadium seats and 8 barstools, while four smaller suites would hold 6 stadium seats and 3 barstools.

The midfield location of the suites is optimum, and the distance from the field is very favorable. The upper bowl would provide constant shade without restricting views. The clearance under the cantilevered overhang is greater than many new NFL stadiums allowing good sightlines to the field and play action. Suite fronts would be open to the seating bowl during events to maintain connection to the action while cool conditioned air could be provided to further enhance the suite environment. Television monitors would be added at the underside of the bowl to allow viewing of replays due to the limited views of the video boards from the suites, which is a common condition in many modern stadiums.

Sideline Club Lounge and Amenities Addition

The Loge Level is perceived and ticketed as Aloha Stadium's premium level. However, no permanent concessions or toilets are located on this level. Loge patrons must squeeze through a narrow cross aisle that is further congested with concession carts to access stairways to the upper concourse to access amenities. This premium seating condition is significantly substandard compared to most major collegiate and NFL stadiums today.

This option would address this deficiency on the sideline by extending the cross aisle as far as possible towards the stadium's exterior while working within the constraints of the stadium's existing diagonal structural frame. The current condition of the press box appears that the existing structural frame could support the added floor loading with little to no supplemental support; however, further study is required for this option to be pursued.

This option incorporates several features that improve the amenity package for sideline club patrons, thus adding value to their tickets. First, as part of the seat replacement program, padded seats with cup holders replace the existing seats while maintaining their quantity. Television monitors would be hung from the seating deck above to broadcast video replays. Upgraded toilets and concession stands would be added at lower ratios, allowing fewer people utilizing each fixture or point of sale. Enclosed lounge areas with tables, chairs, and lounge seating would provide an upscale hospitality area in an air conditioned environment that is more consistent with current standards for club patrons.

South Endzone Baseball Press Box Super Suite Conversion

This option would convert the existing baseball press box into a super suite. It currently is used for this purpose in an ad hoc and less efficient manner during the NFL Pro Bowl. The conversion would result in a unique upscale environment for approximately 270 premium seats. It is anticipated that tickets would be sold to small and large groups on both a season and game by game basis. This flexibility would offer corporations and families a variety of ticketing options from which to choose. The hospitality area includes upscale toilets and lounge seating. It features a bar area from which to serve food and drinks. Access would be provided via new passenger elevators with other recommended stadium improvements.

Loge Level Corner and Sideline Clubs Addition

This option would infill each corner with an enclosed club lounge featuring indoor club seats behind operable glazing and an expanded upper concourse party deck with outdoor general admission seats. The enclosed club lounge features upscale concession service and a bar area along upgraded toilets arranged around an open and flexible hospitality space. The hospitality area would be designed to host meetings and other events on non game days and would take advantage of the views to the playing field and surrounding environment. If desired, the club seats could be located outside the conditioned enclosure as a continuation of the existing loge seating.

By spreading the cost burden of the enhancements across the entire loge level population, the loge level corner club addition would become more economically feasible. The greater impact of implementing both options will also provide an opportunity to remake the image of the loge level, thus generating more appeal for sponsorship and advertising.



Myounghee Noh & Associates, L.L.C.
Environmental Studies & Consulting Services

Lawrence T. Yamamoto, Director, Department of Agriculture Resources Conservation Services
Prince Kuhio Federal Building
00 Ala Moana Boulevard, Room 4-118
Honolulu, HI 96850-0050

December 13, 2007

Dear Mr. Yamamoto:

**Subject: Whole Stadium Improvement at Aloha Stadium, Pre-Assessment Consultation
TMK (1) 9-9-003:061, 99-500 Salt Lake Boulevard, Honolulu, Oahu, Hawaii**

Back in March 2007, a pre-assessment consultation letter, dated March 16, 2007, was sent out to which you have responded. There have been some changes to the stadium improvement project, and this letter describes those changes. We appreciate any comments from you.

The State of Hawaii Department of Accounting and General Services (DAGS) on behalf of the Stadium Authority is proposing the following as part of the stadium improvement. A project summary, including descriptions and maps, is attached for your information and records.

- Roof replacement
- Other improvement options
 - Improvement of internal and external signage
 - Replacement of seating
 - Replacement or repair of corroded drainpipes, plumbing and HVAC insulation
 - Recoating of exterior surfaces
 - Walkway resurfacing
 - Addition of elevators
 - ADA improvements
- Stadium enhancement options
 - Lower bowl 50 yard-line suite addition
 - Sideline club lounge and amenities addition
 - South end zone baseball press box super suite addition
 - Loge level corner and sideline clubs addition

A Draft Environmental Assessment (Draft EA) is now being prepared for this project to comply with the State environmental regulations under Hawaii Revised Statutes (HRS) Chapter 343, and Hawaii Administrative Rules (HAR) Title 11, Chapter 200. This letter and the project summary are being provided to solicit any comments, concerns, or regulatory requirements you may have with regards to this project so that they may be addressed in the Draft EA.

We would greatly appreciate your cooperation in providing us with any written comments within 14 days from the date of this letter. If you have any questions on this matter, please call me at (808) 484-9214. Thank you.

Sincerely,

Myounghee Noh, Principal Investigator

United States Department of Agriculture



Natural Resources Conservation Service
P.O. Box 50004 Rm. 4-118
Honolulu, HI 96850
808-541-2600

January 4, 2008

Myounghee Noh, Principal Investigator
99-1046 Iwaena Street, 201A
Aiea, Hawaii 96701

Dear Mr. Noh,

We have reviewed the Whole Stadium Improvement at Aloha Stadium, Pre – Assessment Consultation TMK: (1)9-9-003:061, 99-500 Salt Lake Boulevard, Honolulu, Hawaii documents. We have no comment to offer at this time.

Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in blue ink, appearing to read "Lawrence T. Yamamoto". The signature is fluid and cursive, written over the typed name.

LAWRENCE T. YAMAMOTO
Director
Pacific Islands Area

Helping People Help the Land

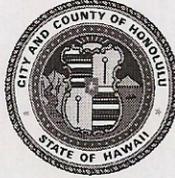
An Equal Opportunity Provider and Employer



DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 523-4730 • Internet: www.honolulu.gov

MUFI HANNEMANN
MAYOR



MELVIN N. KAKU
DIRECTOR

RICHARD F. TORRES
DEPUTY DIRECTOR

TP12/07-241135R

December 26, 2007

Ms. Myounghee Noh, Principal Investigator
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, 210A
Aiea, Hawaii 96701

Dear Ms. Noh:

Subject: Whole Stadium Improvement at Aloha Stadium

Thank you for your letter dated December 13, 2007, requesting our pre-assessment comments on the subject project. At this time, we have no comments to offer for your consideration as you prepare the environmental assessment.

Should you have any questions regarding this matter, please contact Ms. Faith Miyamoto at 768-8350.

Very/truly yours,

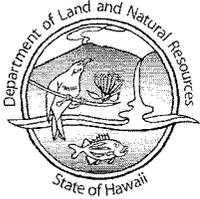
A handwritten signature in black ink, appearing to read "Wayne Y. Yoshioka".

WAYNE Y. YOSHIOKA
Acting Director

LINDA LINGLE
GOVERNOR OF HAWAII



LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 21, 2007

Myounghee Noh & Associates, LLC
99-1046 Iwaena Street 210A
Aiea, Hawaii 96701

Attention: Ms. Myounghee Noh

Gentlemen:

Subject: Pre-Assessment Consultation for Draft Environmental Assessment for stadium improvements, Honolulu, Oahu, Tax Map Key: (1) 9-9-3:61

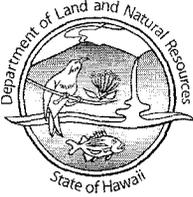
Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Land Division-Oahu District, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Morris M. Atta".

for Morris M. Atta
Administrator



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 14, 2007

MEMORANDUM

From: TO:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division – Oahu District

TO: FROM: Morris M. Atta *M. Atta*
 SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment for stadium improvements
 LOCATION: Honolulu, Oahu, TMK: (1) 9-9-3:61
 APPLICANT: Myounghee Noh & Associates, LLC on behalf of Department of Accounting & General Services

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by December 26, 2007.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *Shaw*
Date: 12/20/07



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD07/3424

December 26, 2007

Myounghee Noh, Principal Investigator
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, 210A
Aiea, Hawai'i 96701

**RE: Whole Stadium Improvement at Aloha Stadium, Pre-Assessment Consultation
TMK (1) 9-9-003:061, 99-500 Salt Lake Boulevard, Honolulu, O'ahu, Hawai'i**

Aloha nō e Mr. Noh,

The Office of Hawaiian Affairs (OHA) is in receipt of your December 13, 2007 request for pre-assessment consultation regarding the above-referenced matter, and offers the following comments:

The Draft Environmental Assessment (DEA), in accordance with Chapter 343 of the Hawaii Revised Statutes (HRS), should include a Cultural Impact Assessment (CIA). In accordance with the requirement of Act 50, Session Laws of Hawaii 2000, a CIA shall include information relating to the practices and beliefs of the Native Hawaiians who once inhabited this area, and it is recommended that community involvement be included in this assessment.

In light of anticipated foundation, plumbing and trenching work, OHA asks that, in accordance with Section 6E-46.6, HRS and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division (SHPD) shall be contacted. OHA would also like to be notified.

We further note your reference to previous correspondence between our offices dating back to March 2007. Unfortunately, OHA staff has been unable to track the communications you mention, so we would appreciate it much if you could transmit to my attention copies of said

Myounghee Noh, Principal Investigator
Myounghee Noh & Associates, L.L.C.
December 26, 2007
Page 2

letters. Also, OHA would appreciate greatly receiving a hardcopy of the completed DEA document, if feasible, addressed to my attention.

Thank you for the opportunity to comment. If you have any questions or concerns, please contact Mr. Jerome Yasuhara, Policy Advocate in the Native Rights, Land and Culture hale, at 594-0239 or jeromey@oha.org.

'O wau iho nō, me ka ha'aha'a,



 Clyde W. Nāmu'o
Administrator

C: Vicky Holt Takamine
PO Box 17483
Honolulu, Hawai'i 96817

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



January 2, 2008

MUFI HANNEMANN, Mayor

RANDALL Y. S. CHUNG, Chairman
SAMUEL T. HATA
ALLY J. PARK
ROBERT K. CUNDIFF
MARC C. TILKER

LAVERNE T. HIGA, Ex-Officio
BRENNON T. MORIOKA, Ex-Officio

CLIFFORD P. LUM
Manager and Chief Engineer

DEAN A. NAKANO
Deputy Manager and Chief Engineer

Mr. Myounghee Noh
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, 210A
Aiea, Hawaii 96701

Dear Mr. Noh:

Subject: Your Letter Dated December 13, 2007 Regarding the Whole Stadium Improvement at Aloha Stadium, Pre-Assessment Consultation

Thank you for the opportunity to comment on the proposed project.

The existing water system is presently adequate to accommodate the proposed development. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of your building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

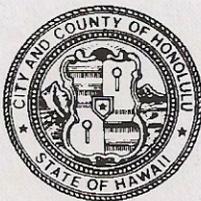
If you have any questions, please contact Robert Chun at 748-5440.

Very truly yours,

for KEITH S. SHIDA
Program Administrator
Customer Care Division

DEPARTMENT OF COMMUNITY SERVICES
CITY AND COUNTY OF HONOLULU

715 SOUTH KING STREET, SUITE 311 □ HONOLULU, HAWAII 96813 □ AREA CODE 808 □ PHONE: 768-7762 □ FAX: 768-7792



MUFI HANNEMANN
MAYOR

DEBORAH KIM MORIKAWA
DIRECTOR

MARK K. OTO
SENIOR ADVISOR

December 21, 2007

Mr. Myounghee Noh
Principal Investigator
Myounghee Noh & Associates, LLC
99-1046 Iwaena Street, Suite 210A
Aiea, Hawaii 96720

Dear Mr. Noh:

Subject: Whole Stadium Improvement at Aloha Stadium
Pre-Assessment Consultation
TMK: (1) 9-9-003:061

Thank you for providing us with the opportunity to review and comment on the revisions to the Whole Stadium Improvement at Aloha Stadium project. On behalf of the Mayor's Committee on Persons with Disabilities, we request that accessibility of the facility for seniors and persons with disabilities be maximized to the extent possible throughout the design process.

We appreciate the opportunity to provide comments and look forward to reviewing your draft Environmental Assessment when it becomes available. Questions regarding this matter may be directed to Mr. Randall S.J. Wong at 768-7747.

Sincerely,

A handwritten signature in blue ink that reads "Deborah Kim Morikawa".

Deborah Kim Morikawa
Director

DKM:jy

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

January 10, 2008

Ms. Myounghee Noh
Principal Investigator
Myounghee Noh & Associates, LLC
99-1046 Iwaena Street, 210A
Aiea, Hawaii 96701

Dear Ms. Noh:

Subject: Pre-Assessment Consultation
Whole Stadium Improvement at Aloha Stadium
99-500 Salt Lake Boulevard, Honolulu, Oahu, Hawaii
TMK: (1) 9-9-003:061

Thank you for giving us the opportunity to comment on the above
Pre-Assessment Consultation.

The Department of Design and Construction has no comments to offer at this
time.

Very truly yours,

A handwritten signature in black ink, appearing to read "Eugene C. Lee".

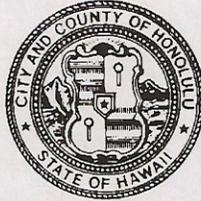
Eugene C. Lee, P.E.
Director

ECL:lt (240828)

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 768-3343 • Fax: (808) 768-3381
Website: www.honolulu.gov

MUFI HANNEMANN
MAYOR



LAVERNE HIGA, P.E.
DIRECTOR AND CHIEF ENGINEER

GEORGE "KEOKI" MIYAMOTO
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 08-5

January 3, 2008

Mr. Myounghee Noh
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, Suite 210A
Aiea, Hawaii 96701

Dear Noh:

Subject: Whole Stadium Improvement at Aloha Stadium,
Pre-Assessment Consultation, TMK:(1)9-9-003:061,
99-500 Salt Lake Boulevard, Honolulu, Oahu, Hawaii

Thank you for giving us the opportunity to review the additional information provided with your letter of December 13, 2007, regarding the subject project. We have no comments to offer at this time.

Should there be any questions, please call Larry Leopardi, Chief of the Division of Road Maintenance, at 768-3600.

Sincerely,

A handwritten signature in black ink that reads "Laverne Higa". The signature is written in a cursive style.

Laverne Higa, P.E.
Director and Chief Engineer

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU

KAPOLEI HALE, 1000 ULUOHIA STREET, STE. 309 • KAPOLEI, HAWAII 96707
Phone: (808) 768-3003 • FAX: 768-3053 • Internet: www.honolulu.gov

MUFI HANNEMANN
MAYOR



LESTER K. C. CHANG
DIRECTOR

DANA L. TAKAHARA-DIAS
DEPUTY DIRECTOR

December 28, 2007

Mr. Myounghee Noh, Principal Investigator
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, 210A
Aiea, Hawaii 96701

Dear Mr. Noh:

Subject: Pre-Assessment Consultation
Whole Stadium Improvement at Aloha Stadium

Thank you for updating us on the changes to the stadium improvement project.

The Department of Parks and Recreation has no comment and as stated in our previous correspondence to your office on March 30, 2007, the improvements to Aloha Stadium will not impact any facility or program of the department and you are invited to delete us as a consulted party to the balance of the EA process.

Should you have any questions, please contact Mr. John Reid, Planner, at 768-3017.

Sincerely,

A handwritten signature in dark ink, appearing to read "Lester K. C. Chang", is written over the typed name.

LESTER K. C. CHANG
Director

LKCC:mk
(240669)

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 768-8000 • FAX: (808) 527-6743
INTERNET: www.honolulu.gov • DEPT. WEB SITE: www.honoluludpp.org

MUFI HANNEMANN
MAYOR



HENRY ENG, FAICP
DIRECTOR

DAVID K. TANOUE
DEPUTY DIRECTOR

2007/ELOG-3495 (mw)

December 26, 2007

Ms. Myounghee Noh, Principal Investigator
Myounghee Noh & Associates, LLC
99-1046 Iwaena Street, #210A
Aiea, Hawaii 96701

Dear Ms. Noh,

Subject: Aloha Stadium Pre-Assessment Consultation
Whole Stadium Improvement Project

In your Draft EA for this project, your discussion on zoning regulations should note that the City has granted both height waivers and parking waivers to Aloha Stadium. Thus, if the renovation project either results in a height increase or decreases the amount of parking, an additional waiver may be required.

Your letter dated December 13, 2007 referred to a March 16, 2007 letter and a Department of Planning and Permitting response. For your information, we have no record of your March 16, 2007 letter or our response.

Should you have any questions, please call Mike Watkins of our staff at 768-8044.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Henry Eng", is written over a blue horizontal line.

Henry Eng, FAICP, Director
Department of Planning and Permitting

HE:Ih

p:\DivFunction\EA-EIS\2007\Aloha Stadium-Pre.doc

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

BRENNON T. MORIOKA
ACTING DIRECTOR

Deputy Directors
MICHAEL D. FORMBY
FRANCIS PAUL KEENO
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.2718

December 18, 2007

Myounghee Noh
Principal Investigator
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, Suite 210A
Aiea, Hawaii 96701

Dear Myounghee Noh:

Subject: Aloha Stadium, Changes to the Stadium Improvement Project
Pre-Assessment Consultation
TMK: 9-9-003: 061

Thank you for your December 13, 2007, transmittal requesting our review of the subject project.

The proposed changes to the subject project will not impact State transportation facilities.

We appreciate the opportunity to provide comments.

Very truly yours,

Francis Paul Keeno

for BRENNON T. MORIOKA, PH.D., P.E.
Acting Director of Transportation

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

MUFI HANNEMANN
MAYOR



KENNETH G. SILVA
FIRE CHIEF

ALVIN K. TOMITA
DEPUTY FIRE CHIEF

December 24, 2007

Mr. Myounghee Noh, Principal Investigator
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, Unit 210A
Aiea, Hawaii 96701

Dear Mr. Noh:

Subject: Preassessment Consultation
Whole Stadium Improvement at Aloha Stadium
99-500 Salt Lake Boulevard, Honolulu, Hawaii
Tax Map Key: 9-9-003: 061

In response to your letter dated December 13, 2007, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) reviewed the material provided and foresees no adverse impact to services provided by the HFD.

Should you have any questions, please call Acting Battalion Chief William H. Melemai III of our Fire Prevention Bureau at 723-7151.

Sincerely,

A handwritten signature in black ink that reads "Alvin K. Tomita".

for KENNETH G. SILVA
Fire Chief

KGS/SK:bh

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honoluluupd.org

MUFI HANNEMANN
MAYOR



BOISSE P. CORREA
CHIEF

PAUL D. PUTZULU
MICHAEL D. TUCKER
DEPUTY CHIEFS

OUR REFERENCE **BS-KP**

December 21, 2007

Ms. Myounghee Noh, Principal Investigator
Myounghee Noh & Associates, L.L.C.
99-1046 Iwaena Street, 210A
Aiea, Hawaii 96701

Dear Ms. Noh:

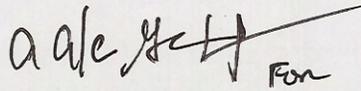
This is in response to your letter dated December 13, 2007, requesting comments on the changes made to the Pre-Assessment Consultation for the Whole Stadium Improvement at Aloha Stadium project in Honolulu.

As stated in our previous letter of March 27, 2007, this project should have no significant impact on the facilities or operations of the Honolulu Police Department.

If there are any questions, please call Major Debora Tandal of District 3 at 723-8800 or Mr. Brandon Stone of the Executive Office at 529-3644.

Sincerely,

BOISSE P. CORREA
Chief of Police

By  For
JOHN P. KERR
Assistant Chief of Police
Support Services Bureau

Appendix D

SHPD Determination of No Effect on Historic Properties