

DRAFT ENVIRONMENTAL ASSESSMENT

***MCKINLEY HIGH SCHOOL SOFTBALL STADIUM
and GIRLS ATHLETIC LOCKER ROOM***

Honolulu, O'ahu

DOE JOB No. Q00035-06 and P00028-06



Prepared for

Department of Education
State of Hawaii
Project Management Branch
Kalanimoku Building, Room 431
Honolulu, Hawai'i 96813

March 2010

DRAFT ENVIRONMENTAL ASSESSMENT

***MCKINLEY HIGH SCHOOL SOFTBALL STADIUM
and GIRLS ATHLETIC LOCKER ROOM***

Honolulu, O'ahu

DOE JOB No. Q00035-06 and P00028-06

Prepared in Partial Fulfillment of the Requirements of Chapter 343, Hawai'i Revised Statutes
and Title 11, Chapter 200, Hawai'i Administrative Rules, Department of Health, State of Hawai'i

Prepared for

Department of Education
State of Hawai'i
Project Management Branch
Kalanimoku Building, Room 431
Honolulu, Hawai'i 96813

Prepared by

Gerald Park Urban Planner
95-595 Kanamee Street, #324
Mililani, Hawai'i 96789

KYA Design Group
934 Pumehana Street
Honolulu, Hawai'i 96826

Franklin Wong & Associates, Ltd.
700 Richards Street, Suite 2604
Honolulu, Hawai'i 96813

March 2010

PROJECT PROFILE

Proposed Action: McKinley High School Softball Stadium
and Girls Athletic Locker Room

Location: McKinley High School
1039 South King Street
Honolulu, Hawai'i 96814

Proposing Agency and
Accepting Authority: Department of Education
Facilities Development Branch
Kalanimoku Building, Room 501
Honolulu, Hawai'i 96813

Tax Map Key: 2-3-009: por. 001
Land Area: 45.649 acres
Landowner: State of Hawai'i
Existing Use: Softball Field, Open Area
State Land Use Designation: Urban
Development Plan: Primary Urban Center
DP Land Use Map: Institutional
Zoning: Public *per* Kaka'ako Community Development District
Mauka Area Plan

Need for Assessment: Use of State Lands and Funds
§11-200-6-B-1a, 2b

Anticipated Determination: Finding of No Significant Impact

Contact Person:
Softball Stadium: Cheng-Hsin Chang, Project Coordinator
Department of Education, State of Hawai'i
Project Management Section, Unit 2
Kalanimoku Building, Room 431
Honolulu, Hawai'i 96813

Telephone: 586-0481

Girls Athletic Locker Room: Arnold Fukunaga, Project Coordinator
Department of Education, State of Hawai'i
Project Management Section, Unit 3
Kalanimoku Building, Room 431
Honolulu, Hawai'i 96813

Telephone: 586-0440
Email: arnold_fukunaga@notes.k12.hi.us

TABLE OF CONTENTS

	Project Profile	i
	Table of Contents	ii
	List of Figures and Tables	iv
SECTION 1	DESCRIPTION OF THE PROPOSED ACTION	1
	A. Purpose for the Projects	1
	B. Technical Characteristics	1
	1. Softball Stadium	1
	2. Girls Athletic Locker Room	3
	3. Circulation and Off-Street Parking	4
	4. Infrastructure	4
	a. Softball Stadium	4
	b. Girls Athletic Locker Room	5
	5. Landscaping	5
	C. Economic Characteristics	5
	D. Social Characteristics	6
SECTION 2	EXISTING CONDITIONS	14
	A. Existing Uses and Structures	14
	B. Climate	16
	C. Topography	16
	D. Geology	17
	E. Soils	17
	F. Water Resources	17
	1. Surface Water	17
	2. Ground Water	17
	G. Flood Hazard	19
	H. Natural Hazards	19
	1. Tsunami	19
	2. Earthquake	19
	I. Archaeological Resources	19
	J. Cultural Resources	21
	K. Botanical Resources	23
	L. Wildlife Resources	23
	M. Land Use Controls	24
	N. Public Facilities	24
	1. Circulation	24
	2. Water	26
	3. Sewer	26
	4. Power and Communication	26
	5. Public Schools	26
	6. Protective Services	26

TABLE OF CONTENTS

SECTION 3	SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS AND MEASURES TO MITIGATE ADVERSE EFFECTS	27
	A. Short-term Impacts	27
	B. Long-term Impacts	29
	1. Girls Athletic Locker Room	29
	2. Softball Stadium	30
SECTION 4	ALTERNATIVES TO THE PROPOSED ACTION	34
	A. No Action	34
	B. Stadium Configuration	34
	C. Girls Athletic Locker Room Location	34
SECTION 5	PERMITS AND APPROVALS	35
SECTION 6	AGENCIES AND ORGANIZATIONS TO BE CONSULTED	36
SECTION 7	DETERMINATION OF SIGNIFICANCE	37
	REFERENCES	40

FIGURES

Figure	Title	Page
1	Location/Vicinity Map	7
2	Tax Map	8
Sheet A-1	Softball Stadium Site Plan-New Work	9
Sheet A-3	Softball Stadium Elevations	10
Sheet C1.02	Girls Athletic Locker Room Site & Utility Plan	11
Sheet A-2.0	Girls Athletic Locker Room Detail Floor Plan	12
Sheet A-5.0	Girls Athletic Locker Room Exterior Elevations	13
8	Soils Map	18
9	Flood Insurance Rate Map	20
10	Kakaa'ko Mauka Area Plan	25

TABLES

Table	Title	Page
1	Subsurface Soil Profile	21

PHOTOGRAPHS

Photograph	Title	Page
1	MHS Softball Field Viewed from Left Field Foul Ball Area.	14
2	View of Skinned Infield from Right Field Foul Ball Area.	15
3	View of Equipment Storage Container and "Bullpen".	15
4	Site of Proposed Girls Athletic Locker Room is in the Foreground. The Existing Girls P.E. Building is in the Background.	16

The Department of Education, State of Hawai'i, proposes to construct a softball stadium on the grounds of McKinley High School, City and County of Honolulu, State of Hawai'i. The softball stadium is proposed on the site of an existing softball field and is generally bounded by a baseball field on the north, an existing girls P.E. building on the east, an oval track and multi-purpose athletic field to the south, and the Neal S. Blaisdell Center parking structure on the west.

The Department of Education ("DOE") also proposes to construct a Girls Athletic Locker Room. The Girls Athletic Locker Room ("Locker Room") is proposed between an existing Girls P.E. Building on the north, the multi-purpose field and track oval on the south, the school gymnasium on the east, and the proposed softball stadium on the west. The Locker Room will be located beyond the left and left-center field fence of the proposed softball stadium.

A Vicinity Map depicting the location of both projects is shown on Figure 1. The property bears Tax Map Key Number 2-3-009: por. 001 encompassing an area of 45.469 acres. A Tax Map is shown on Figure 2.

Because both projects are in proximity to each other and are scheduled for construction at approximately the same time, this environmental assessment is prepared for both projects

A. Purpose for the Projects

The purpose of both projects is to meet Title IX Education Act Amendments of 1972 (renamed the Patsy T. Mink Equal Opportunity in Education Act in 2002) requirements by providing equitable sports facilities for girl's sports. In addition to providing a softball field that is equitable to McKinley High School's boy's baseball field, the stadium has been designated as the O'ahu Interscholastic Association softball championship field for the island of O'ahu. Because the field will be used for championship and or tournament play, the field has been upgraded with field lights and ancillary facilities including a concession stand, restrooms, and an announcer's/scorekeepers booth.

McKinley High School ("MHS") fields boys and girls athletic teams that compete in the O'ahu Interscholastic Association ("OIA"). While the boy's athletic teams have a locker room facility, the girls do not. The proposed project will provide girls teams equitable facilities and enhance the school's athletic programs for females. MHS female teams compete in softball, volleyball, basketball, tennis, cross country, track and field, paddling, water polo, swimming, cheerleading, judo, golf, and wrestling. The school fields teams for some but not all sports at the junior varsity and varsity levels.

B. Technical Characteristics

1. Softball Stadium

The proposed softball field will replace an existing softball field. It will feature a 60-foot diamond, "skinned" infield (no grass), and a grassed outfield. The left and right field foul lines measure 230 feet from home plate to a perimeter fence in the outfield. During play, a

4'-0" portable breakaway fence will be erected inside the perimeter fence about 200 feet from home plate and serve as the official out-of-bounds. The 30 feet of open area between the perimeter fence and portable fence is provided in the event the outfield distance requirement is increased in the future. The open area can also serve as a warm up area for waiting teams.

A 24-foot high backstop will be erected behind home plate. From the end of both dugouts, a 4-foot chain link fence (sometimes called an infield fence) will extend to the perimeter fence in the outfield. The fence demarcates the out-of-bounds area.

Softball standards require a 25-foot wide safety zone between the in-play lines and infield fences along left and right fields. Beginning from the backstop, the safety zone extends outwards and parallel to the left and right field lines.

Dugouts for home and visiting teams will be located along the respective sidelines. The dugouts will be constructed on a poured in place concrete foundation, framed with cement masonry units (standard and split face) at the rear and partially on the sides, and topped with a pitched ribbed metal roof. Chain link fencing at the front and chain link gates on two sides will allow for player viewing of the game and access, respectively. The dugouts are approximately 250 square feet (20'-0" x 12'-6"), about 10-feet in height, and can accommodate up to 20 players, coaches, and their equipment. The dugouts will be ADA accessible.

Bull pens for warming up pitchers will be located along both home and visitors sides. A batting cage is proposed in combination with a bull pen on the right field side only. The bull pen and batting cage will be enclosed by reinforced mesh screening supported by structural steel columns and a cable support and tensioning system. The mesh screening measures 12-feet high on all sides.

The softball stadium will be illuminated for night play. Six light poles, 60-feet in height, will be arrayed around the field. The drilled pier foundations for the 60-foot light poles are typically 2'-6" to 3'-0" in diameter and 8 to 10 feet deep. One pole will be erected behind each dugout, at the end of the left and right field foul lines, and in left center and right center field. Eleven light fixtures will be mounted on each infield pole, 17 fixtures on each foul line pole, and 11 fixtures on each outfield pole. Each light fixture provides 1500 watts of light. The fixtures will be equipped with shields to direct light to the field of play and to help prevent light spillage from the top and sides of the fixture into the night sky and adjoining properties. The infield will be lighted to a brighter intensity than the outfield.

Tiered bleacher seating for about 500 persons will be provided behind the backstop. Prefabricated aluminum bleachers will be installed on a poured in place concrete foundation. Accessible seating will be provided at selected ground level locations and an accessible ramp constructed to access the scorers/announcers booth. Planned lawn areas on both side lines may be used for grass seating.

A multi-purpose building housing a concession stand and comfort stations for men and women will be built along the right field line. The approximately 960 square foot structure (38'-0" X 25'-4") will be constructed on a poured in place concrete foundation, framed with cement masonry units (standard and split face), and topped with a pitched ribbed metal roof. The structure will be approximately 11-feet high from grade to top of roof ridge.

A field equipment storage room will be housed in a single-story structure to be constructed along the left field foul line fence. The structure (14'-0" X 44'8") will be constructed on a poured in place concrete foundation, framed with cement masonry units (standard and split face), and topped with a pitched ribbed metal roof. The structure measures approximately 11-feet high from grade to top of roof ridge.

A ticket booth/gated entry is planned adjacent to left field. A concrete slab (7'-0" X 12'-6") with power only will be provided for the ticket booth with design and construction to be done at a later time. A prefabricated announcers and scorers booth will be constructed in a bleacher section behind home plate in the upper section of the bleachers. The steel booth will be provided by the bleacher manufacturer.

Six foot high chain line fencing will encircle the stadium for security and ticketing purposes. Admission will be charged for entry into the softball stadium. A schedule of fees has not yet been determined.

A lighted electronic scoreboard will be installed in left center field.

To accommodate the softball stadium as designed, right and center field will overlap into a section of the oval track and multi-purpose field. The latter athletic facility is proposed to be relocated in its entirety further in the direction of Diamond Head as part of a McKinley High School Athletic Complex Master Plan (Group 70 International, 2008).

A site plan and exterior elevations are shown in Figures 3, and 4.

2. Girls Athletic Locker Room

MHS does not have a locker room facility for its female athletic teams thus the Locker Room will be a new facility. The proposed Locker Room will be a free-standing structure of approximately 3,000 square feet (48'-0" X 62'-0"). The building will provide showers, lockers and a team meeting room, restrooms, coach's offices, and equipment storage room for MHS girl's athletic teams.

The single-story, 26-foot high structure will be erected on a poured in place concrete foundation, framed with cement masonry unit walls and steel framed roof trusses, and topped with a standing seam hip metal roof. Operable jalousie windows and roof mounted skylights will allow natural light and air to enter the interior. The Locker Room will not be air conditioned. An 8'-0" side concrete walkway will be poured around three sides of the building and a 12'-0" concrete walkway constructed between the Locker Room and adjoining girls P.E. building

The Locker Room will be designed as a sustainable building incorporating natural light and ventilation, recycled steel for the roof trusses, solar water heating, and permeable concrete walkways.

A Site Plan, Floor Plan, and Exterior Elevations are shown in Figures 5, 6, and 7.

3. Circulation and Off-Street Parking

Changes in existing on-campus vehicle circulation patterns are not proposed to accommodate both projects. Primary access to the softball stadium will be from an existing two-way campus driveway off Pensacola Street.

Parking improvements are not planned. Spectator parking will be provided at the main campus parking lot off Pensacola Street which is surrounded by shops, Hirata Hall, the library, cafeteria, and Adult Education building. The Adult Education building also has a parking lot and on-street parking is allowed on Pensacola Street.

A 20-foot wide paved driveway from Kapi'olani Boulevard will be constructed on the east side of the softball stadium for emergency and maintenance vehicle use. The approximately 565-foot long driveway will dead end at the rear of the bleacher section behind home plate.

4. Infrastructure

a. Softball Stadium

Water for fire protection will be supplied from a new 12" line to be installed along the north and west sides (along the proposed driveway) of the softball stadium. The new line will tie into an existing 8" line in the campus driveway near the Girl's P.E. Building. The 12" line along the driveway will service a new fire hydrant.

Domestic water will be supplied from a new 4" line along the south and west sides of the softball stadium. Water use for the comfort stations is estimated at 1,700 gallons per day when the stadium is used for tournament play.

Wastewater from the comfort stations and concession stand will discharge through a 4" service lateral into a new 6" line under the softball field. The line will discharge into an existing sewer manhole in the campus driveway near the Girls P.E. Building. From the manhole wastewater is conveyed by a 10" line to Kapi'olani Boulevard. Wastewater flow is estimated at 1,500 gallons per day when the stadium is used for tournament play.

Power and communication services will be brought to both sites from existing on-campus systems. Utility lines will be placed underground.

Areas comprising the softball stadium will be raised generally between 8" to 18" above existing grade. Existing grade will be raised about 18" (to elevation 6.4 feet) in the center of pitcher's mound. The field slopes away from the pitcher's mound towards the outfield. Ground elevation in the right field corner is 5.4 feet, 5.2 feet in center field, and 5.2 feet in the left field corner.

An existing grated inlet in short center field will be removed, the piping riser reconstructed for drainage purposes, and then covered.

The grade differential will drain the field surface from the center in the direction of left and right field. In addition, perforated French drains will be installed a minimum of 14" under the outfield grass to collect percolating water. Percolated water from the outfield will be conveyed via the under drains to an existing underground 18" drain line and discharged into

an existing culvert along the west property line. Storm water runoff is projected at 5.29 cubic feet per second.

b. Girls Athletic Locker Room

Water will be supplied from two existing 3" water lines located on the east and west sides of the Locker Room. Water demand is estimated at 2,400 gallons per day.

Wastewater will be discharged into an existing 8" sewer lateral on the east side of the Locker Room. The lateral discharges into a 10" line crossing the athletic field to Kapi'olani Boulevard. Wastewater discharge is estimated at 1,000 gallons per day.

An existing 18" HPDE drain line will be relocated to under the shared 12'-0" concrete walkway. Three new drain inlets will be installed with 18" HPDE piping near and under the walkway. Two existing drain inlets on the east and west of the Locker Room will be replaced with new inlets. Runoff is projected at 1.13 cubic feet per second (Kim & Shiroma, 2010)..

The Locker Room building type (V-B) does not require a fire sprinkler system.

5. Landscaping

An existing monkeypod tree and several coconut palms growing within the proposed emergency driveway will be removed. Five coconut palms will be relocated on campus and the rest demolished. A certified arborist inspected the trees for their health and viability for relocation.

An underground irrigation system will be installed at the softball stadium. Irrigation water requirements are estimated at 5,200 to 9,150 gallons per day. The field will be watered as needed and irrigation water usage will fluctuate seasonally with less application during the wet months and more during the drier months.

Irrigation water will be supplied from a 4" water line with a booster pump.

C. Economic Characteristics

The projected construction cost and start up times for both projects are:

Softball Stadium	\$2.5 to 3.0 million	January 2011
Girls Athletic Locker Room	\$1.5 million	January 2011

Both projects will be funded by State of Hawai'i Capital Improvement Program appropriations.

Construction will commence after all design plans are approved and construction permits received. The actual sequencing of construction has not yet been determined but it is anticipated that construction of the softball stadium and the Locker Room will occur concurrently.

The property is owned by the State of Hawai'i and set aside for "a site for the McKinley High School" by Executive Order No. 101 (1921) and amendments thereto.

D. Social Characteristics

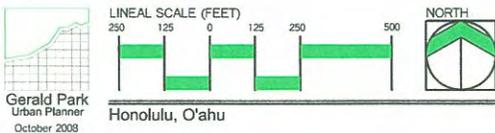
During construction of the softball stadium all MHS softball games will be played as away games.

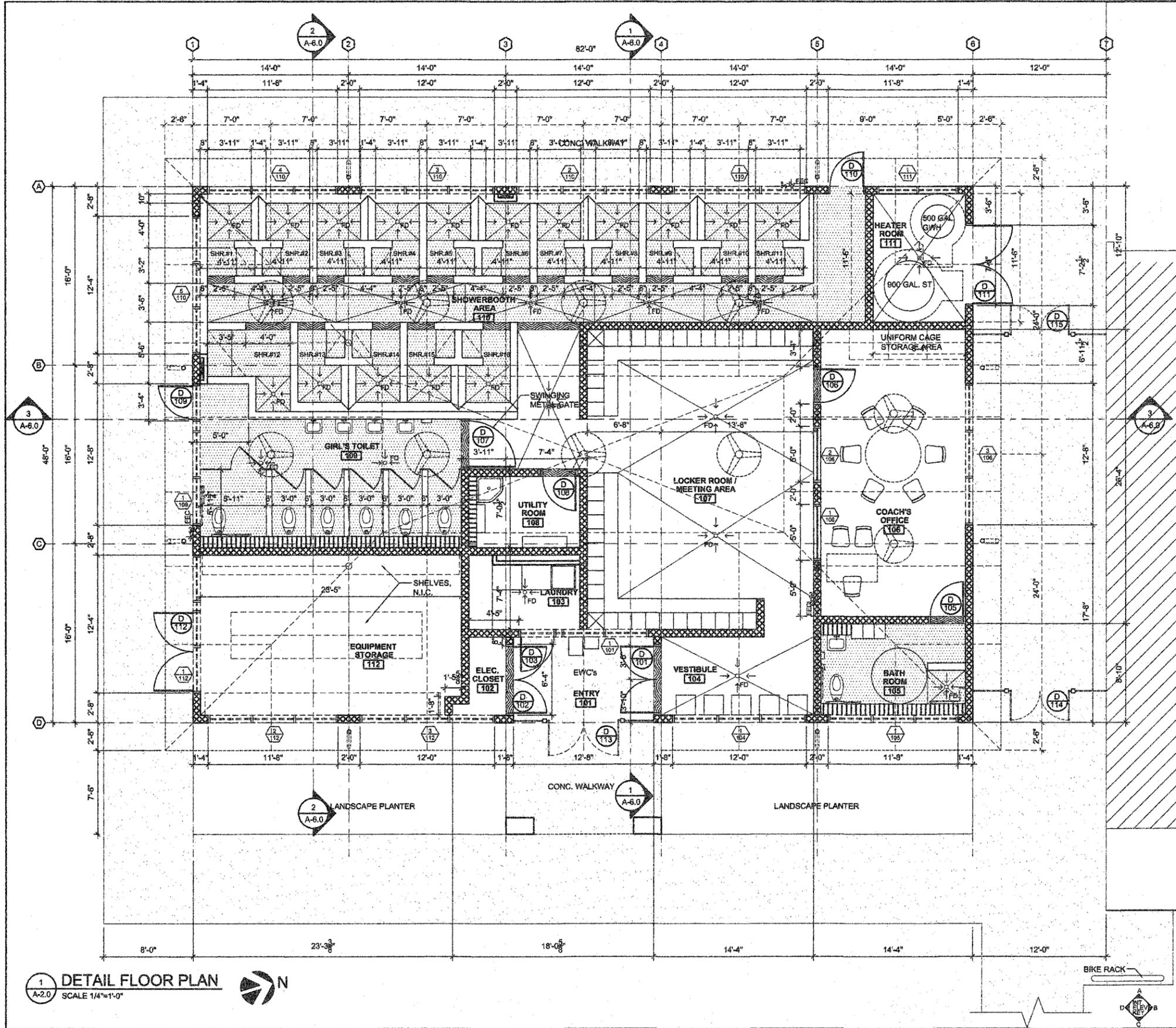
Walkways, dugouts, at-grade bleacher sections, the announcers/scorekeepers booth, concession stand, equipment storage building, and restrooms will be ADA accessible.



Source: USGS National Map Viewer & C&C of Honolulu Website

Figure 1
 Vicinity/Location Map
 McKinley High School Softball Stadium
 and Girls Athletic Locker Room





VE KEYNOTE LEGEND

NOTE #	REMARKS	DETAIL REF.
1	CHANGE ROOFING FROM CLAY TILE TO STANDING SEAM METAL	1 A-1.0
2	REDUCE SKYLIGHT 25%	
3	REDUCE CERAMIC TILE ON WAINSCOTS	
4	PROVIDE PHENOLIC PARTITIONS IN LIEU OF CMU WITH CERAMIC TILE	
5	CHANGE WINDOWS FROM ALUMINUM HOPPER TO GLASS JALOUSIE	
6	DELETE SOLAR HOT WATER HEATING SYSTEM	
7	DELETE CIVIL DRAIN FIELD	
8		
9		
10		
11		
12		
13		
14		
15		

BUILDING DEPARTMENT IBC CODE INFORMATION:

MIN. CONSTRUCTION TYPE VB
 ACTUAL CONSTRUCTION TYPE IIB
 OCCUPANCY CLASS GROUP E
 NON SEPARATED USES - DIV 302.3.1
 BUILDING HEIGHT 23 FT
 COMPOSITE BUILDING AREA (INCLUDES GIRL'S PE LOCKER SHOWER BUILDING) 8,826 SF
 NET GIRL'S ATHLETIC LOCKER SHOWER BUILDING AREA 3,380 SF

LEGEND:

- S-2** INDICATES FURNITURE & EQUIPMENT FOR FURNITURE & EQUIPMENT SCHEDULE SEE THIS SHEET.
- [Hatched Pattern] INDICATES AREA WITH DEPRESSED SLAB.

GENERAL NOTES:

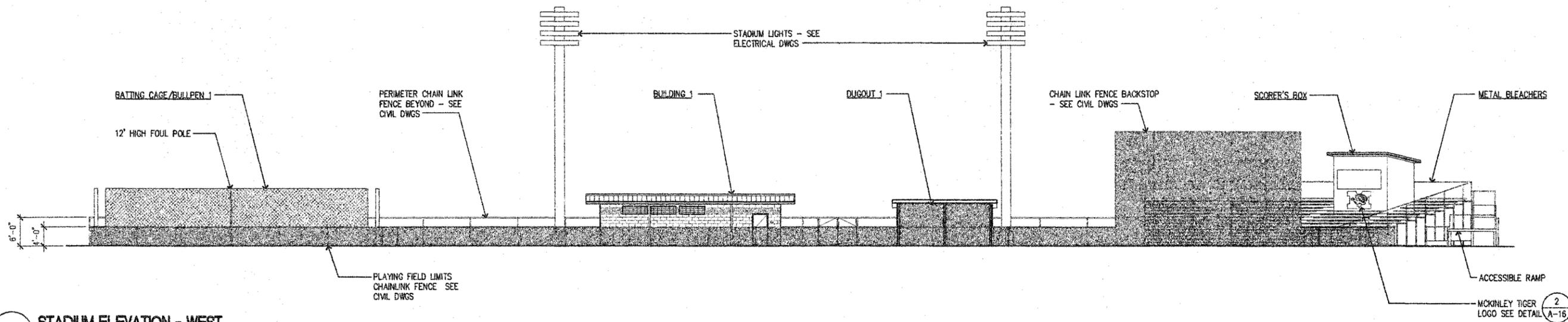
- REFER TO SHEET T1.3 FOR ARCHITECTURAL SYMBOLS AND ABBREVIATIONS.
- MAXIMUM SLOPE TO FLOOR DRAIN 1:50 (2%)
- MAXIMUM CROSS SLOPE OF 5'-0" CONCRETE WALK 1:50 (2%)
- FOR CONTINUATION OF DOWNSPOUT, SEE CIVIL DRAWINGS.

1 **DETAIL FLOOR PLAN**
 A-2.0 SCALE 1/4"=1'-0"

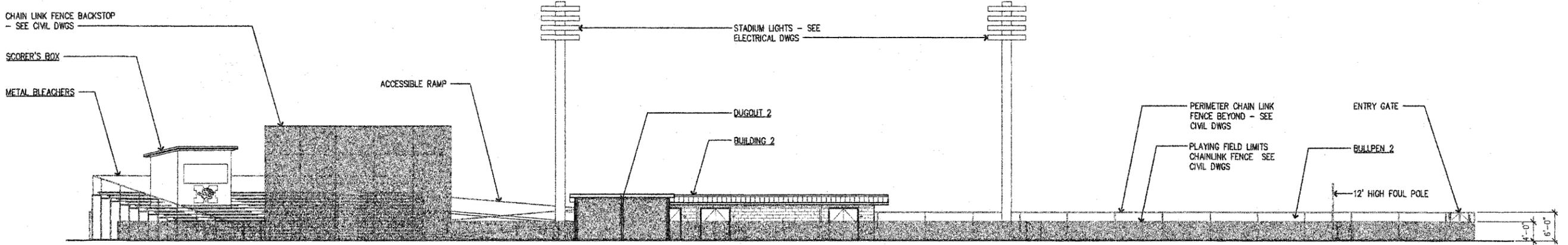
REVISION NO.	DATE	APPROVED
DEPARTMENT OF EDUCATION STATE OF HAWAII McKINLEY HIGH SCHOOL GIRLS' ATHLETIC LOCKER ROOM HONOLULU, OAHU, HAWAII		
DETAIL FLOOR PLAN		
FRANKLIN WONG & ASSOCIATES, LTD.	JOB NUMBER	DRAWING NO.
DESIGNED BY: FW / PW	000028-06	A-2.0
DRAWN BY: FWA	DATE: MAR 2010	SHEET 17 OF 60
SCALE: AS NOTED		

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

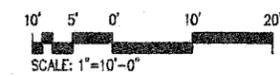
FILE _____ DRAWER _____ FOLDER _____



A STADIUM ELEVATION - WEST
SCALE: 1"=10'-0"

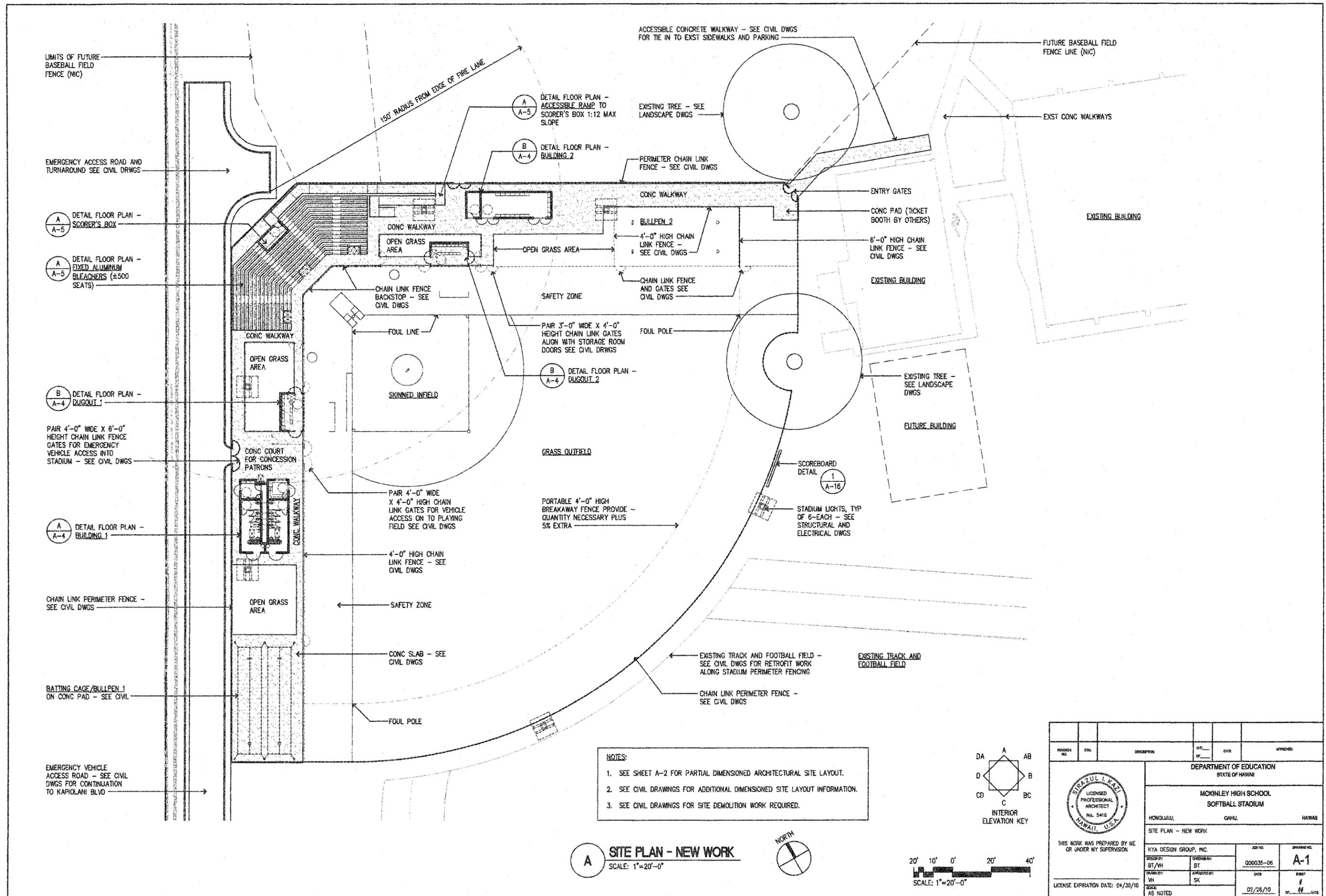


B STADIUM ELEVATION - SOUTH
SCALE: 1"=10'-0"



REVISION NO.	DATE	DESCRIPTION	BY	CHKD BY	APPROVED

		DEPARTMENT OF EDUCATION STATE OF HAWAII	
		MCKINLEY HIGH SCHOOL SOFTBALL STADIUM	
HONOLULU, OAHU, HAWAII		STADIUM ELEVATIONS	
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION		KYA DESIGN GROUP, INC. DESIGN BY: BT/VR DRAWN BY: VH SCALE: AS NOTED	JOB NO. 000035-06 DATE: 02/26/10 SHEET # A-3 OF 11 SHEETS
LICENSE EXPIRATION DATE: 04/30/10		FILE: DRAWING: PLOTTED:	



A SITE PLAN - NEW WORK
SCALE: 1"=20'-0"

REVISION NO.	DATE	DESCRIPTION	BY	CHKD	APPROVED
DEPARTMENT OF EDUCATION STATE OF HAWAII					
MCKINLEY HIGH SCHOOL SOFTBALL STADIUM					
HONOLULU		OAHU		HAWAII	
SITE PLAN - NEW WORK					
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION					
KYA DESIGN GROUP, INC.					
DESIGN BY:	BT/WH	CHECKED BY:	BT	DATE:	000035-05
DRAWN BY:	WH	APPROVED BY:	SK	DATE:	02/28/10
SCALE:	AS NOTED	JOB NO.		02/28/10	REVISED NO.
LICENSE EXPIRATION DATE: 04/30/10				A-1	

A. Existing Uses and Structures

McKinley High School athletic teams participate as a member of the OIA. MHS has fielded a girl's softball team for at least 50 years playing in club leagues and eventually the OIA.

The existing softball field was built in the year 2000 by MHS athletic department staff, faculty, players, and volunteers. It is used for play in spite of not meeting proper standards for competitive play. For example, there are no dugouts, the backstop is not of proper height and length, foul ball areas (between the infield and out of play areas) are less than 25 feet deep, and fencing along the first and third base lines is too low to protect spectators from wayward softballs (either batted or thrown). Tiered, uncovered, portable aluminum bleachers for spectator seating are positioned on the home and visitors sides of the diamond. There are no field lights for night play (See Photograph 1).



Photograph 1. MHS Softball Field Viewed from Left Field Foul Ball Area.

The "skinned" 60-foot diamond and infield are covered with cinder and the outfield grassed (See Photograph 2). A batting cage and "bullpen" for warming up pitchers are located on the right field side of the backstop. A shipping container used for equipment storage adjoins the batting cage (See Photograph 3).

Attendance at home games ranges between 30 to 40 spectators.



Photograph 2. View of Skinned Infield from Right Field Foul Ball Area.



Photograph 3. View of Equipment Storage Container and "Bullpen".

Located between the existing Girls P.E. Building and the oval track, the site of the proposed Locker Room is vacant and unimproved. The proposed building site is covered by grass and remnant asphalt concrete paving (See Photograph 4).



Photograph 4. Site of Proposed Girls Athletic Locker Room is in the Foreground. The Existing Girls P.E. Building is in the Background.

B. Climate

The climate of the Honolulu area is typical of the leeward coastal lowlands of O‘ahu. The area is characterized by abundant sunshine, persistent trade winds, relatively constant temperatures, moderate humidity, and infrequent severe rainstorms.

Typically, the northeasterly trade winds prevail throughout the year although their frequency varies from more than 50 percent during the summer months to 90 percent in January. The average annual wind velocity is approximately 10 miles per hour. Occasional Kona winds bring warm humid air from the south.

The mean temperature measured at Honolulu International Airport ranges from 70°F in the winter to 84° F in the summer. The temperatures in the Waikiki area may be slightly higher due to localized urban heating effects. Average annual precipitation is approximately 24 inches with most of the rainfall occurring between November and April. Relative humidity ranges between 56 and 72 percent (Wilson Okamoto & Associates, Inc. 2003).

C. Topography

Ground elevation at the softball field is relatively flat to provide a level playing field. Ground elevation for the infield and outfield is about 5 feet above mean sea level.

Total relief at the Locker Room site is 1.5 feet with ground elevation ranging from +6.7 feet on the *mauka* end to + 5.2 feet on the *makai* end (Hirata & Associates, Inc., 2009).

D. Geology

A summary of geologic conditions was excerpted partially from the Final Supplemental Environmental Impact Statement, Volume 1 prepared by EDAW, 2009). The Kaka'ako geologic substratum consists of emerged fossil reef and sedimentary deposits that were formed 120,000 years ago (MacDonald & Abbott, 1970). Over time, massive coral reefs were formed during high stands in the sea and later eroded by coastal streams during low stands. Based on subsurface coral elevations, the area along present day King Street (fronting McKinley High School) is about five feet above MSL (mean sea level) and 25 feet below MSL near Ala Moana Boulevard. Much of the Mauka Area was reclaimed from soils composed of soft mixtures of sand, silt and clay which extend from the top of the subsurface coral layer to about sea level (HCDA and HUD, 1983). In general, the limit of the filled area cuts across McKinley High School below King Street (See also Figure 8 for fill areas).

E. Soils

The Soil Conservation Service (1972) maps two soil types under the MHS campus. The soils are Fill Land, mixed (FL) and Makiki Clay Loam (MkA). Makiki clay loam underlies about 75 percent of the campus and Fill Land about 25 percent. In general, the softball infield, left field, and emergency driveway are on Makiki Clay Loam, the Locker Room and right and center field are on Fill Land.

Fill Land is land that was created by dredging materials from the ocean or hauled from nearby areas, garbage, and general material from other locations. This land type occurs mostly near Pearl Harbor and in Honolulu, adjacent to the coast.

The surface layer of Makiki Clay Loam is a dark-brown clay loam about 20 inches thick. The subsoil is a dark-brown clay loam about 10 inches thick containing cinders and rock fragments. Permeability is moderately rapid, runoff is slow, and the erosion hazard is no more than slight. A soils map is shown on Figure 8.

F. Water Resources

1. Surface Water

There are no streams, lakes, ponds, open bodies of water, or wetlands on the premises.

2. Ground Water

All of MHS overlies the Nu'uaniu aquifer of the Honolulu aquifer sector. The Nu'uaniu aquifer is characterized by an unconfined sedimentary basal aquifer above a confined flank basal aquifer. The upper aquifer is classified as currently used, contains moderately brackish water (between 1000 and 5000 parts per million chloride) that is not used for drinking and is not ecologically important. The flank aquifer is currently used for drinking, contains fresh water (less than 250 parts per million chloride) is irreplaceable, and has a low vulnerability to contamination (Mink and Lau, 1990).

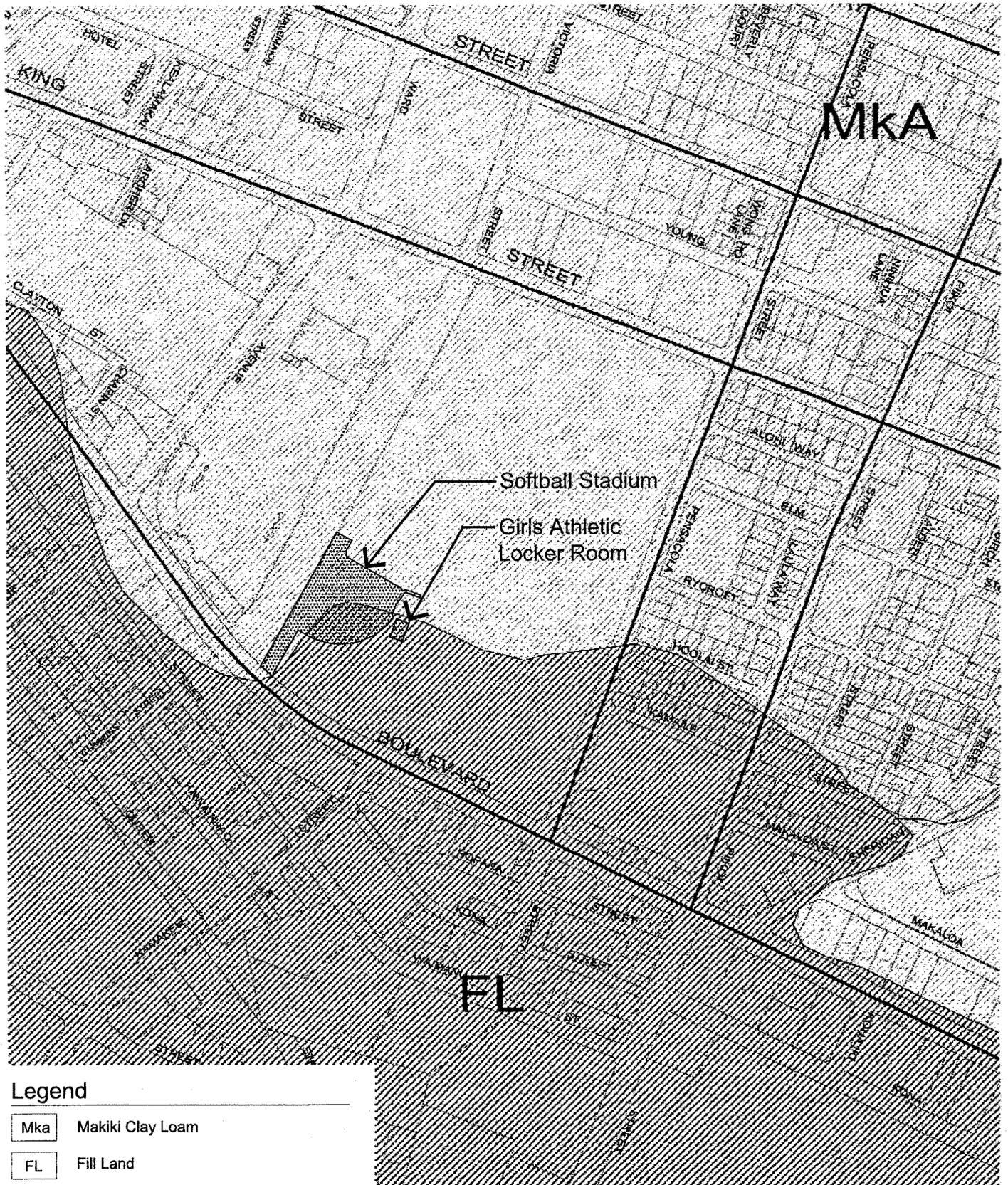


Figure 8
Soils Survey Map
McKinley High School Softball Stadium
and Girls Athletic Locker Room

G. Flood Hazard

Flood hazard areas are shown on Figure 9. Approximately 80% of MHS is designated Flood Zone "X" which is defined as "areas determined to be outside the 0.2% annual chance floodplain." The remaining 20% of the campus which includes almost all the athletic facilities and areas on the *makai* end of campus are designated Flood Zone "A" which is defined as "100 year flood plain, no base flood areas determined (Federal Emergency Management Agency, 2004).

H. Natural Hazards

1. Tsunami

McKinley High School is not located in a tsunami inundation area identified for the Airport to Waikiki section of Honolulu (Tsunami Evacuation Map 19). The high school, however, and the Neal S. Blaisdell Center are identified as emergency shelters for use during times of natural disaster (EDAW, Inc., 2009).

2. Earthquake

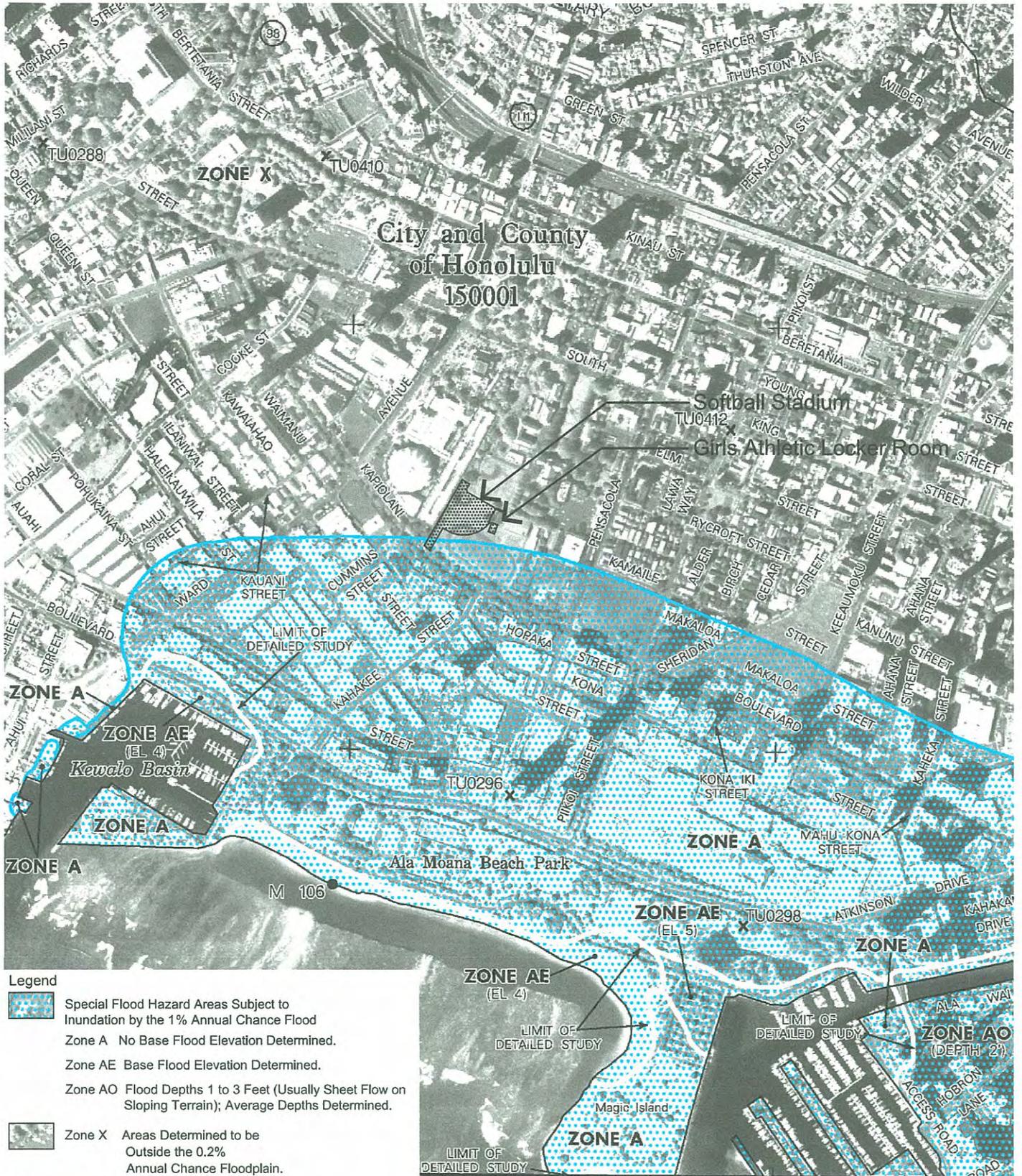
O'ahu is in Seismic Zone 2A, which is characterized as being susceptible to earthquakes that may cause minor damage to structures. Zone 2A is based on the International Building Code, which contains six seismic zones, ranging from 0 (no change of severe ground shaking) to 4 (10 percent chance of severe shaking a 50-year interval; Zone 2 is divided into Zones 2A and 2B of which Zone 2A is not associated with a particular fault zone (EDAW, Inc., 2009).

I. Archaeological Resources

McKinley High School (Hawai'i Site No. 80-14-9926) was placed on the Hawai'i Register of Historic Places on May 3, 1980 and the National Register of Historic Places on August 11, 1980. The nomination and subsequent placement on both registers identifies the entire campus as registered historic property but the designation applies to several architectural and historical school buildings rather than the entire campus. None of the historical buildings are located on the site of the softball station and Locker Room.

It is widely known that sections of O'ahu's southern coastline at one time extended up (and slightly beyond in some areas) to the present Kapi'olani Boulevard. Much of the land area included ponds and marshlands that were used for rice growing during the late 1800s and early 1900s. Areas comprising the present Honolulu Harbor, Kaka'ako, Neal Blaisdell Center, McKinley High School, and Ala Moana Shopping Center were filled and the coastline pushed seaward to its present demarcation. The Ala Wai Canal was dredged to drain Mānoa Stream to the ocean and dredged material used to create much of the present day Waikiki.

Presently there are no archaeological resources on the ground surface of the stadium and locker room sites (Park, 2009). A review of historical school maps and plans show that both areas were previously used for school facilities that are no longer there or were relocated elsewhere on campus (Lanai Limalau, old girl's P.E. Locker Room, and a bandroom for example). Improvements in more recent times such as the track and field oval and football practice field, the existing softball and baseball fields, gymnasium, and girls P.E. locker room



Legend

-  Special Flood Hazard Areas Subject to Inundation by the 1% Annual Chance Flood
-  Zone A No Base Flood Elevation Determined.
-  Zone AE Base Flood Elevation Determined.
-  Zone AO Flood Depths 1 to 3 Feet (Usually Sheet Flow on Sloping Terrain); Average Depths Determined.
-  Zone X Areas Determined to be Outside the 0.2% Annual Chance Floodplain.

Source: Federal Emergency Management Agency
 Flood Insurance Rate Map Map Number
 15003C0365F Date: Sept. 30, 2004.

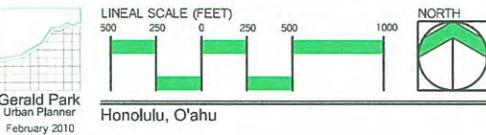


Figure 9
FIRM Map
McKinley High School Softball Stadium
and Girls Athletic Locker Room

altered the environmental setting but the presence of historical resources were reported prior to construction.

Installation of water lines, irrigation lines, and drain lines have altered the ground and subsurface. None of the excavations for infrastructure systems uncovered subsurface features in the vicinity of the two projects.

Boring logs for several nearby structures were examined to learn about subsurface conditions. In general, and based on synthesizing the boring logs, a general subsurface profile can be described thusly:

Table 1. Subsurface Soil Profile

Elevation	Condition
-1 foot	Hard packed brown soil
-2 to 5 feet	Hard packed coral fill on top of soft grey sand, coral, and silt
-6 to 10 feet	Soft grey, sand and coral, fairly hard packed
-11 to 15 feet	Medium soft to medium hard coral, sand, shells, and silt
-15 to 25 feet	Medium and hard coral rock

Source: Soil Boring Logs, Various Projects at Athletic Field, Compiled by C.H. Chang, DOE.

In consideration of the construction of adjacent school facilities, installation of drain, sewer, and driveways nearby, and the geo-technical boring logs, the chances of unearthing subsurface features are considered unlikely. The State Historic Preservation Division has recommended and the DOE will conduct archaeological monitoring at both sites during construction.

An archaeological assessment of a 5.33 acre lot at the corner of Kapi'olani Boulevard and Pensacola Street was conducted by Cultural Surveys Hawai'i in 1992. The lot is located to the east of McKinley High School and can be considered part and parcel with the school since they both share the same tax map key parcel number. The site was the location of the old Kapi'olani Community College (formerly Kapi'olani Technical School) which is now located near the Diamond Head area of Honolulu. The authors concluded that the property could contain burials, the remains of Hawaiian agricultural features, and pre- and post-habitation deposits. It was recommended that archaeological monitoring be conducted during any future construction in the study area (EDAW, Inc., 2009).

J. Cultural Resources

The Final Supplemental Environmental Impact Statement (May 2009) for the Kaka'ako Community Development District "Mauka Area" included a technical report describing cultural resources within the Mauka Area and potential impacts on the resources resulting from implementation of the Mauka Area Plan. The Mauka Area was identified as that area of Kaka'ako generally bounded by South King Street on the north, Ala Moana Boulevard on the south, Pi'ikoi Street on the east, and Punchbowl Street on the west. The McKinley High School campus is thus within the geographic and regulatory boundaries of the Mauka Area.

Readers of this environmental assessment are referred to the above referenced cultural impact assessment for a comprehensive discussion of cultural resources associated with the Mauka Area. Incorporating materials from that assessment and a search of the historical literature, maps, books, and cultural assessments written for nearby projects, the statements below are applicable to McKinley High School and can be summarized thusly:

- The *makai* section of the school grounds from the existing Neal S. Blaisdell Center on the east to Pensacola Street on the west (say about 400 lineal feet inland from the present day Kapi'olani Boulevard) at one time was part of a meandering coastline.
- The Kewalo region was used for salt making, wetland agriculture, and fishpond farming by Hawaiians that occupied the area during the 19th and early 20th centuries.
- The school property bordered the eastern side of the Ward family's *mauka* property. In 1870 Curtis Ward purchased about a 12 acres estate at auction and contiguous lands in the Kō'ūla area. This constituted the *mauka* section of the "Old Plantation" from Thomas Square on King Street to the *makai* border at Waimanu Street. The Ward landholdings increased to 30 acres and he later acquired 77 acres including ocean frontage in the *ili* of Kukuluāe'o makai of Queen Street.

In 1957 the City and County of Honolulu acquired the *mauka* portion of the estate to construct the Neal S. Blaisdell Center. Sections of the *makai* lands were later leased or developed for industrial and commercial activities including the Ward Warehouse and Ward Village.

- Areas *mauka* of the school grounds and as far west as the present day Sheridan Street were once marshland and planted in rice. An 1884 map of the area labels the future site of McKinley High School "Rice Fields" and Ward owned coastal lands below Queen Street (Kukuluāe'o) as "salt pans" (in Hustace, 2000).
- A farmer named Yew Chee farmed land where the school is now located. It is not clear if the Chee family owned or leased land from a Mrs. K. Fairchild. Reference is made to a "Piikoi Pond" being in the area.
- Up until the early 1920's much of the school and areas to the east were still in marsh land. Construction of Kapi'olani Boulevard from South and King Streets commenced in 1928 reaching Sheridan Street by 1931 (Chiogioji and Hammatt, 1992). A 1931 aerial photograph shows the coastline at that time at about its current location and Kapi'olani Boulevard with a coral bed marking its route to Diamond Head.

Land filling activities had been occurring in and around Kaka'a'ko incrementally since 1880 and never really ceased until the 1950s when land filling was completed for Ala Moana Shopping Center.

- There are no on-going hunting and gathering practices associated with the school site.
- *Heiau*, cemeteries, and burials are not associated with the site probably because the area was wet rather than dry land and characterized by wetland agriculture, fish ponds, and springs.

- The present alignment of King Street follows an early trail from Honokohua (approximately Punchbowl Street) to Mau'umae (in Kaimuki).
- McKinley High School was official established in 1865, as the Fort Street English Day School. In November 1869, the English Day School moved from the basement of the Old Fort Street Church to a new stone building on the corner of Fort and School Streets. The Fort Street School moved to Princess Ruth's Palace in 1895 and was renamed the Honolulu High School. In 1907, Honolulu High School moved to the corner of Beretania and Victoria Streets. The school's name was then changed to President William McKinley High School, after President William McKinley, whose influence helped to bring about the annexation of the Hawaiian Islands to the United States.
- In 1921, the Territory of Hawai'i acquired the present site by condemnation from a Mrs. K. Fairchild. Governor's Executive Order 101 (June 20, 1921) set aside a 46-00/100 acre parcel for "a site for the McKinley High School." In 1923, the school was moved from Beretania/Victoria Streets to its present location and the first school building constructed.
- McKinley High School (Hawai'i Site No. 80-14-9926) was placed on the Hawai'i Register of Historic Places on May 3, 1980 and the National Register of Historic Places on August 11, 1980.

Although no ongoing cultural practices associated with the school grounds could be identified in the literature, MHS *per se* could be considered a cultural and educational resource in the community. The school has been at this site for close to ninety 90 years, is listed on the State and National Register of Historic Places because of several architecturally significant buildings, and displays sculptures by local distinguished artisans. Its facilities are used for community activities, athletic competitions, and the annual Friends of the Library book sale. MHS alumni also have distinguished themselves, their alma mater, and the State of Hawai'i in government, business, arts, and athletics.

K. Botanical Resources

Both the softball stadium and Locker Room sites are sparsely vegetated owing to their current uses. Common Bermuda grass is the predominant groundcover. The existing softball infield is "skinned" and covered with red cinder. Grass grows principally in the outfield and areas along the left and right field lines. Monkey pod and silver trumpet were the only trees observed on both sites. Coconut palms are planted behind the softball field backstop and along right field where the fire lane is proposed.

L. Wildlife Resources

Wildlife was not observed at the time of the field investigation (Park, December 2009).

Common mynah and barred dove were the only two avian species seen during the field investigation (Park, 2009).

M. Land Use Controls

Pursuant to Chapter 205 HRS, the Hawai'i Land Use Law, the State Land Use Commission classifies all land in the State of Hawai'i into one of four classifications: Urban, Agricultural, Conservation, or Rural. McKinley High School is designated Urban. Land uses in urban areas are under the jurisdiction of the respective counties although there are some exceptions to county jurisdiction.

McKinley High School is within the Mauka Area of the Kaka'ako Community Development District. Uses in the district are under the jurisdiction of the Hawai'i Community Development Authority ("HCDA"). The Mauka Area Plan designates McKinley High School "Public" or public use area.

Pursuant to Act 153, SLH 1976, authority was granted by the Legislature to the Hawai'i Community Development Authority to supersede County ordinances. With the adoption of the Kaka'ako Community Development District and existing Mauka Area Plans and Rules, HCDA has the overriding authority over local controls such as the Development Plan and Zoning. The Mauka Area Plan, however, continues to embody and foster the goals set forth in the General Plan (EDAW Inc., 2009)

Adopted in 2004, the Primary Urban Center Development Plan is one of eight development [or sustainable communities] plans adopted to carry out the goals and intents of the General Plan. Its policies are used to shape the growth and development of the primary urban core in Honolulu, which includes Kaka'ako. Kaka'ako will absorb about 30 percent of PUC's future residential and commercial growth. Although conformance is not required, the draft Mauka Area Plan and Rules are generally consistent with the vision stated in the Primary Urban Center Development Plan (Ibid).

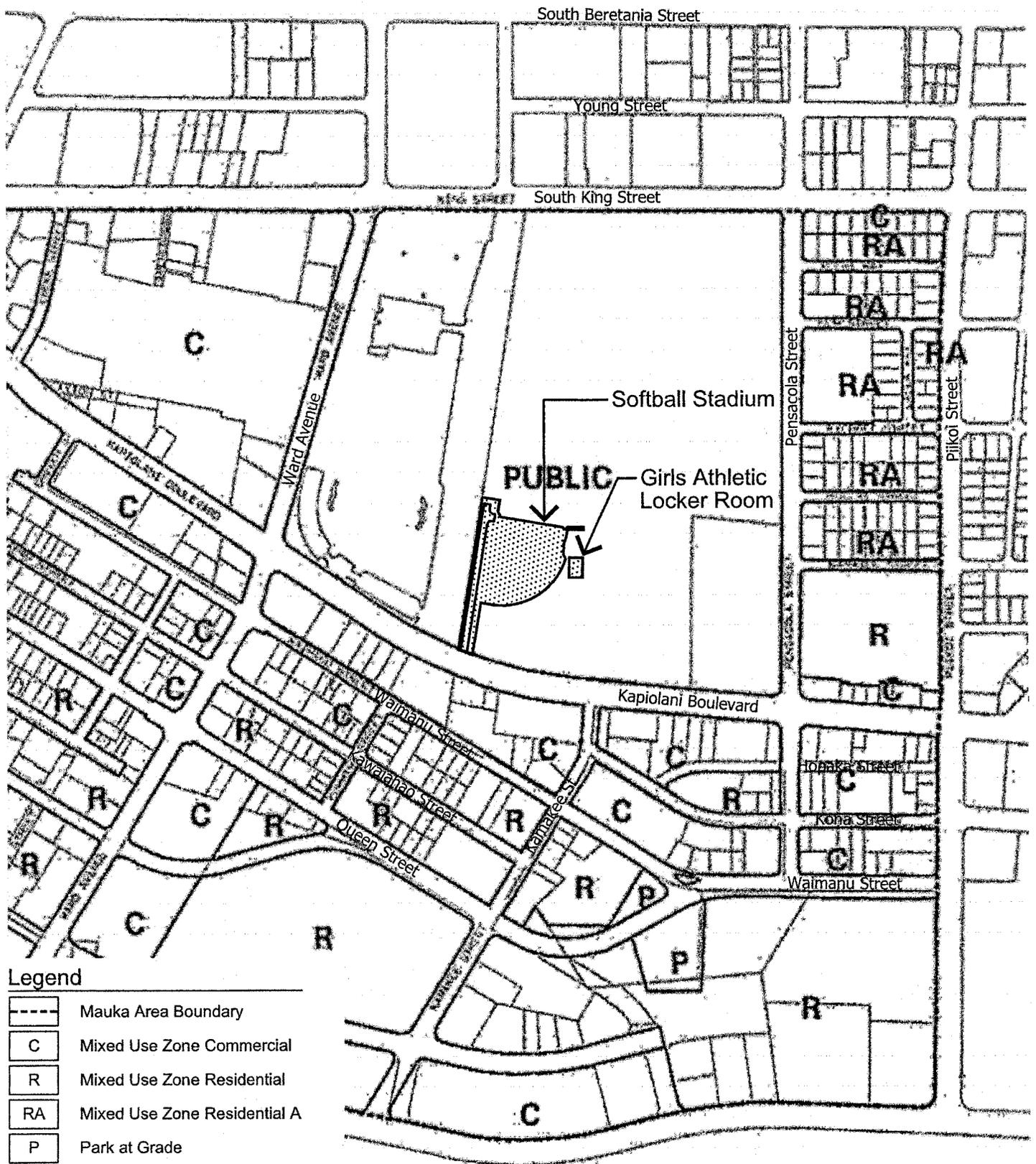
N. Public Facilities

1. Circulation

Pensacola Street is a one-way street in the makai direction. The 76-foot right-of-way accommodates four travel lanes. The right-of-way is fully improved with curbs, gutters, and sidewalks on both sides. Utilities are placed underground. On-street parking is permitted on both sides of the road. The posted speed limit is 25 miles per hour between King Street and Kapi'olani Boulevard because it is in a school zone.

Kapi'olani Boulevard, one of the major east-west surface streets through Honolulu, passes to the west of McKinley High School. The six lane thoroughfare (3 lanes in each direction) features a right-of-way of 100 feet and is fully improved with curbs, gutters, and sidewalks on both sides. Between the Neal S. Blaisdell Center on the west and Pensacola Street on the east the posted speed limit is 25 miles per hour because of a school zone.

Primary access to athletic facilities on the makai end of the campus is from a three lane driveway (2 entry lanes and one exit lane) off Pensacola Street. During school hours student parking is accommodated in a paved parking lot just inside the entry on the Diamond Head end of the Cafeteria. Cafeteria, staff, and visitor parking are provided behind or on the *mauka* side of the Cafeteria. The Adult Education Building has its own parking area.

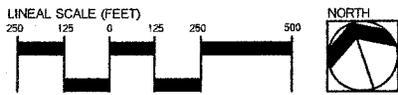


Legend

-  Mauka Area Boundary
-  Mixed Use Zone Commercial
-  Mixed Use Zone Residential
-  Mixed Use Zone Residential A
-  Park at Grade
-  Public Use Areas

Source: Hawaii Community Development Authority, Mauka Area Rules (Chapter 22), June 2005

Figure 10
Kakaako Mauka Area Plan
McKinley High School Softball Stadium
and Girls Athletic Locker Room



On-campus parking areas can accommodate 1,500 vehicles in marked and un-marked stalls. Parking for athletic events at the gymnasium, ball fields, and multi-purpose field is provided in the student parking area (main lot) off Pensacola Street. The parking area at the Adult Education Center building is used for overflow parking as are other areas on campus. There is no parking charge for athletic events.

2. Water

The Department of Water Supply operates and maintains the water system serving MHS. A 12" municipal water line is under Kapi'olani Boulevard and a 12" line under Pensacola Street.

3. Sewer

Pensacola Street is serviced by an 8" sewer main. Trunk sewers include a 36" line under Kapi'olani Boulevard and a 48" main in a 20-foot wide sewer easement along the entire western boundary of MHS *mauka* of Kapi'olani Boulevard.

Wastewater flows to the Ala Moana Sewer Pump Station on Ala Moana Boulevard near South Street and then to the Sand Island WWTP for treatment and ocean disposal.

4. Drainage

Two separate drain lines sized at 18" and 24" cross the softball field in a northeast to southwest direction and discharge into an open cement rubble masonry culvert along the west property line. The culvert extends from King Street and discharges under Kapi'olani Boulevard. In the vicinity of the softball field, the culvert is approximately 5'-0" wide X 2'-0" deep.

An existing 18" drain line on the *makai* side of the girls P.E. locker room is an extension of the 18" drain crossing under the softball field.

Existing runoff is estimated at 3.62 cubic feet per second for the softball field and 0.53 cubic feet per second at the site of the Locker Room.

5. Power and Communication

Electrical and communication transmission and distribution services are provided from existing overhead lines along the driveway from Pensacola Avenue onto the school grounds.

6. Protective Services

Police protection originates from Main Police Station on Beretania Street about 0.5 miles to the northwest.

Fire service can be summoned from the Kaka'ako Fire Station on Queen Street (Station 9), Makiki Fire Station at Piikoi Street and Wilder Avenue (Station 3), or the Pawaa Fire Station at Kaheka and Makaloa Streets (Station 2) All are within one mile of McKinley High School with the Kaka'ako Fire Station being the closest.

3

SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS AND MEASURES TO MITIGATE ADVERSE EFFECTS

The scope of both projects was discussed with the consulting architects and staff of the Project Management Branch, Department of Education, respectively. State and County agencies were contacted for information relative to their areas of expertise. Time was spent in the field noting site conditions. The sum total of the consultations and field investigation helped to identify existing conditions and features that could affect or be affected by the project. These conditions include:

- There are no rare, threatened, or endangered flora or fauna on both sites;
- There are no archaeological resources on the two building sites or known cultural practices associated with both sites;
- The area is not an identified visual resource;
- The area is not located in a flood hazard area or tsunami evacuation zone;
- There are no streams, ponds, or wetlands on the premises;
- Existing water, power, and wastewater systems are available;
- The site of the proposed softball stadium is an existing softball field; and
- The site of the Girls Athletic Locker Room is vacant and covered with grass.

A. Short-term Impacts

Site work, a necessary function to prepare the land for building the temporary and permanent improvements to follow, is the first and probably the most disruptive construction activity on the environment. Grubbing will remove vegetation and grading will establish preliminary and final design elevations. Trees to be retained as part of the future landscaping will be flagged prior to site work and their canopies pruned so as to not interfere with construction. In some instances trees will be planted elsewhere on-site or temporarily relocated for future use in the landscaping. Excavation will necessary to construct underground water, sewer, drainage, utility systems, and foundations/building pads.

Site work is a persistent source of fugitive dust. Site contractors are aware that fugitive dust can be a nuisance to both construction workers, people living and/or working near work sites, and schools and it is imperative for them to maintain stringent dust controls. Water sprinkling is probably the most effective dust control measure given the size of the softball stadium and Locker Room sites and the scale of the proposed improvements. The contractor, however, may choose to implement other measures and best management practices based on their experience with similar projects and job site conditions.

The contractor will be responsible for general housekeeping of the site and for keeping adjacent streets and properties free of dirt, mud, and construction litter and debris. Pollution control measures will comply with Chapter 60.1, Air Pollution Control regulations of the State Department of Health.

Site work will expose soil thus creating opportunities for runoff and erosion. For the softball stadium, an area of approximately 2.62 acres will be graded; excavation quantities are estimated at 90 cubic yards and embankment quantities at approximately 2,785 cubic yards (Sato & Associates, 2010). For the Locker Room, an area of approximately 0.16 acre will be

graded; excavation quantities are estimated at 12 cubic yards and embankment quantities at 38 cubic yards (Kim & Shiroma, 2010). Grubbing, grading, excavation, and stockpiling excavated and imported material will be done in accordance with the Grading Ordinance of Honolulu (1999) as amended and grading plans and Best Management Practices approved by the Department of Planning and Permitting, City and County of Honolulu. Site work and drainage plans also will adhere to the Rules Relating to Soil Erosion Standards and Guidelines (1999) and Rules Relating to Storm Drainage Standards (2000) to reduce pollution associated with storm water runoff.

An NPDES permit for storm water runoff associated with construction activities will be required because more than one acre of land area will be cleared by construction of both projects. Any discharges related to project construction or operation activities will comply with applicable State Water Quality Standards as specified in Hawai'i Administrative Rules, Chapter 11-54 and Chapter 11-55 Water Pollution Control (Department of Health). The Locker Room site is less than one acre in area and an NPDES Permit will not be required unless the Department of Health treats both projects as a combined action.

The presence of a high water table may require dewatering when the light poles are being installed. If dewatering is needed, water and solids will be pumped into a temporary on-site settling basin where the water will be allowed to evaporate (or percolate into the ground). Solid material will be dried, collected, and disposed of off-site. The settling basin may be an in-ground excavation or an open, above ground, portable basin. An NPDES Permit for dewatering activities will be required from the State Department of Health for any dewatering activity pursuant to Chapter 54, Hawaii Administrative Rules.

Construction noise cannot be avoided. Schools are considered noise sensitive facilities and construction noise will be audible in nearby classrooms and the cafeteria but exposure is expected to vary in volume, frequency, and duration. Noise will vary also by construction phase, the duration of each phase, and the type of equipment used during the different phases. For this project, noise will be most pronounced during the early stages when the site is grubbed, graded, and building foundations poured. Noise will diminish as the structure is erected and roofed (the Locker Room). Once the structure is completed, most construction activities will take place inside the building and the exterior walls will help to attenuate noise.

Community Noise Control regulations establish a maximum permissible sound level for construction activities occurring within (acoustical) zoning districts. Land zoned for public use is placed in the Class A zoning district. The maximum permissible sound level for excessive noise sources (to include stationary noise sources and construction and industrial activities) in the Class A zoning district is 55 dBA between the hours of 7:00 am and 10:00 pm and 45 dBA between the hours of 10:00 pm and 7:00 am (Chapter 46, Community Noise Control, 1996). Construction activities often produce noise in excess of the permissible daytime noise level and a variance (or Noise Permit) will be needed. The contractor will be responsible for obtaining the variance and complying with applicable conditions. Work will be scheduled for normal working hours (7:00 am to 3:30 pm) Mondays through Fridays.

Adverse impacts on flora are not anticipated. Grass is the predominant vegetation type at both sites and throughout the campus. A Landscape Architect will tag trees and palms prior to construction for relocation.

The projects are proposed in an area that has been significantly altered by previous activities and uses and the probability of uncovering subsurface archaeological deposits is considered to be low. The DOE, however, will conduct archaeological monitoring during site work as a mitigating measure. In the event subsurface archaeological sites, artifacts, or cultural deposits are unearthed, work in the immediate area will cease and the proper authorities notified for disposition of the finds. If *iwi kupuna* are uncovered both the Honolulu Police Department and the State Historic Preservation Division will be notified as a matter of protocol and for proper disposition of the finds.

A literature review did not reveal the occurrence of modern cultural practices associated with the project areas. The historical record indicates that the Kewalo region including parts of the present high school was used for fishpond agriculture, salt making, and wetland agriculture. None of these activities are presently associated with the project areas. There are no hunting and gathering traditions, heiau, cemeteries, or burials known to be associated with the school grounds. The proposed projects, therefore, should not known affect cultural resources.

Work in the Kapi'olani Boulevard right-of-way will be required to construct the driveway connection. If required, a traffic control plan will be prepared and submitted to the Department of Planning and Permitting, City and County of Honolulu for review and approval. Traffic control measures to mitigate potential impacts to traffic circulation will include but are not limited to:

- Posting construction notices to alert residents and motorists of construction within the road right-of-way.
- Posting flagmen to marshal vehicles around excavations in the roadway.
- Keeping one or two traffic lanes open at all times to minimize inconveniences to motorists.
- Covering open trenches with steel plates during non-working hours.
- Posting devices with warning lights during night hours.
- Restoring excavated road and sidewalk sections to pre-construction conditions or better.

Vehicles carrying workers and material will contribute to traffic on Pensacola Street the principle street providing access to the job sites. Material deliveries will be scheduled during non-peak traffic hours to minimize impacts on traffic. Most, if not all loading and unloading of material will occur on-site; if street loading and unloading is needed, flagmen will be posted for traffic control. Motorists can expect some traffic delays during this activity but should last only a few minutes.

During construction, the MHS softball team will play its league games as away games or at another softball field.

B. Long-term Impacts

1. Girls Athletic Locker Room

MHS girl's athletic teams will benefit from having an equitable (with the boy's) shower and locker room facility. A Locker Room for girls is long overdue considering the school fields 20+ teams in junior varsity and varsity sports. School administrators will determine if the

facility can be used by girls teams other than MHS teams for athletic events held on campus.

Noise should not interfere with classroom instruction because the Locker Room is expected to be used primarily after school hours and on weekends. The hours of use will also extend into the evening during tournament play (for example, when basketball tournaments are hosted at the gymnasium or softball tournaments at the softball stadium). OIA high school basketball games and tournaments are held at the MHS gymnasium and are expected to be continued into the future.

The Locker Room building will not generate noise but jubilant athletes inside will. Noise will be confined to the interior of the structure and should not be audible beyond the school grounds. The Locker Room is approximately 400 feet from the nearest public street (Kapi'olani Boulevard) and street traffic and noise, existing school buildings, and street trees on roads adjoining the school can aid in noise attenuation.

The Locker Room will not result in significant visual and location impacts. The structure will resemble the adjacent girls P.E. building in scale, height, and form giving the appearance of twin buildings. The building site was selected because of its proximity to nearby existing and proposed athletic facilities.

The building exterior will be lighted at night for security and safety purposes. The exterior lighting will be equivalent in brightness to existing lights on other school buildings. The security lighting will not result in adverse light spillage into areas beyond the school grounds.

2. Softball Stadium

Similar to the girls Locker Room, the softball stadium will benefit MHS softball by providing a facility equivalent to the boys baseball field. While providing a regulation softball field built to competitive standards, the stadium will host the OIA softball tournament and will be lighted for night play. Potential environmental impacts generally associated with this type of facility are location, visual, noise, and lighting.

The proposed softball stadium will replace an existing softball field. Existing and limited bleacher seats will be replaced with new bleacher seating, the backstop will be increased in height, a field and equipment storage building will replace an existing shipping container, fencing will be extended down both foul lines, the existing batting cage will be replaced, and dugouts constructed where none now exists. New facilities to be added include restrooms, a concession stand, announcer's booth, ticket booth, and accessible walkways. The latter facilities will upgrade the field for tournament play and spectator comfort and enjoyment.

The replacement facility is not anticipated to result in adverse location and visual effects. It will be sited in a corner location on the *makai* half of the campus, where it will be not be clearly visible to the public from ground level locations. Under existing conditions, the stadium will be shielded from view by the Neal S. Blaisdell Center parking structure on the north and west, school buildings on east, and well-canopied monkeypod trees along Kapi'olani Boulevard on the south. The tallest addition to the playing field *per se* will be the backstop which will be about 24 feet in height. All other replacement and new facilities are lower in height. In the future, proposed facilities on the *makai* campus will screen the stadium from public ground level views.

The stadium can and will be seen from the upper floors of residential high-rise buildings on Kapi'olani Boulevard, Pensacola Street, and as distant as Waimanu Street (two blocks *makai* of Kapi'olani Boulevard).

Because of its open configuration, spectator noise and the voice of the public address announcer may be audible beyond the school grounds during softball games. Both noise sources are expected to be intermittent in volume and occurrence rather than constant and uninterrupted. Existing residences and multi-family residential units on Pensacola Street and in Kaka'ako *makai* of Kapionai Boulevard are over 1,000 lineal feet away and stadium noise may be audible at these locations for residences facing the stadium. In consideration of the distance factor, stadium noise may be heard but should not create a constant nuisance affecting work, sleep, and resident activities.

Chapter 46, Community Noise Control, Hawai'i Administrative Rules, exempts school activities from regulation. School authorities, however, must approve the activity and the activity is limited to the hours of 7:00 AM to 10:00 PM. It is anticipated that school authorities will treat softball games as an associated school activity and will comply with the time limits established by regulation.

One of the features for the proposed softball stadium is the addition of lights for night play. The existing softball field (and other outdoor athletic facilities at MHS) is not lighted. Thus a change in environmental conditions at night is anticipated with the softball stadium lights. The light poles will be arrayed around the playing field and at 60-feet in height are about as tall as many of the coconut trees planted between MHS and the Neal S. Blaisdell Center. Against the backdrop of the coconut palms, the light poles should not be plainly visible from ground level and upper residential floors.

Stadium lighting will have the most pronounced impact when the lights are energized for night play. The lights will bask the stadium in a white glow that could be visible from ground level areas and from the upper floors of nearby residential high-rise buildings. This impact cannot be avoided and the introduction of field lighting where none is present may affect some people exposed to the lights more than others.

In addition to visual impacts caused by stadium lighting, light "spillage" into areas beyond the stadium cannot be avoided. Several existing high-rise residential buildings are located in the immediate vicinity of MHS and the softball stadium site is not too distant from these buildings. These buildings include the twin tower Moana Pacific (1,200 feet to the east), 939 Kapi'olani (900 feet to the northwest), and the Pacifica Honolulu (under construction about 450 to the east). Many dwelling units are on floors higher than the 60-foot high field light poles and the side (or sides) of the respective buildings facing the proposed softball stadium will be the most exposed. Light spillage will have less of an impact on residential units on the lower floors (say the 6th floor and below) and low-rise walk-up apartment because of their height and since street trees and school buildings will partially block the field lights from view.

Measures to minimize and reduce light spillage from the pole mounted light fixtures include but are not limited to:

- Light fixtures will be angled downwards at an average of 35 degrees below horizontal. Light intensity will be the highest (and brightest) for the infield so that players can see the ball better and for the safety of the infielders, base runners, batter, base coaches,

and umpires. Two light fixtures on two outfield poles (one each on each pole) will have an aiming angle of 51 degrees. The higher aiming angle is to allow fielders to see and track fly balls hit to the outfield.

- Individual light fixtures will be equipped with top and side visors (or shields). The visors will direct light to certain areas and help to prevent light spillage from the top and sides of the fixture into the night sky and adjoining properties.
- The softball stadium will be used during the girl's softball season which runs from February to May. MHS will play day games at the stadium with an occasional night game. The stadium will also host the OIA high school softball championship tournament. Tournament play occurs once a year at the end of the softball season in May. The stadium could also host the State championship softball tournament (when held on O'ahu) which includes league champions from O'ahu, Maui, Kaua'i, and Hawai'i. Tournament play is scheduled usually over 4 consecutive days and includes night games.
- Games will be scheduled so that the last night game ends by 10:00 PM. This time limit for noise control also applies to stadium lighting.

Softball, however, like baseball is not played according to a time limit. In instances where extra inning games occur, it will extend the length of the game, the time the field is lighted, the occurrence of spectator noise, and after-game maintenance activities.

Measures to minimize glare from the light fixtures will also help to mitigate their attractive nuisance characteristics for night-flying birds that are drawn to sources of light. Birds can get disoriented by the lights and can be injured or killed when they become exhausted and fall to the ground or collide with power lines and guy wires on their descent.

Water, wastewater, and power systems are available and adequate to accommodate both projects. The softball stadium will not be in use every day thus the projected water and wastewater quantities are for periodic usage.

Runoff from both facilities will drain into an on-site drain line and discharge into an open concrete channel along the west property line. A subsurface under drain system will also help to drain the softball outfield. The slight increase in runoff can be accommodated by the existing system.

Adverse impacts on traffic circulation are not anticipated. Presently MHS athletic department staff and volunteers are able to maintain traffic and parking control during basketball tournaments held at the school gymnasium. State basketball tournament play can and has attracted up to 2,000 spectators for one day's games. On occasion, off-duty police officers have been hired for traffic control. There is sufficient on-campus parking to accommodate basketball spectators and it is expected that the same will be true for softball spectators.

Ambient air quality should not be adversely affected in the long-term. The principal source of air pollution is expected to be exhaust emissions from vehicles entering and exiting the campus for games. Emissions will be dispersed by the prevailing winds

There is no charge for admission and spectator parking at athletic events held at the school. At this time, parking charges are not contemplated for the softball stadium. Admission will be charged for entry into the softball stadium. A schedule of fees has not yet been determined.

The softball stadium may be made available for use by other high schools and adult women's softball leagues upon request. Users will be responsible for ticketing, field maintenance, stadium maintenance, traffic and parking control, and liability.

Associated with these anticipated benefits are costs associated with operating and maintaining the softball stadium. Additional staffing may be required and electrical consumption is expected to increase. Student helpers and volunteers, school clubs and organizations, and community groups may have the opportunity to man the concession stand as a fund raising activity thus helping to reduce some operating costs.

A. No Action

A no action alternative would maintain the status quo of the site thus precluding the occurrence of all environmental impacts, short and long-term, beneficial and adverse described in this Assessment. Resources committed to plan and build the facility would be foregone and the stated objectives of the project unachieved.

B. Stadium Configuration

The consulting architects in consultation with staff of the Project Management Branch, Department of Education investigated alternate configurations and associated costs for seating and placement of spectator facilities. The Site Plan and Elevations shown in Figures 3 and 4 were selected as the desired solution. Other configurations for placing spectator seating and spectator facilities would not have resulted in environmental impacts significantly different from what is disclosed in this environmental assessment.

C. Girls Athletic Locker Room Location

The site selected for the Girls Athletic Locker Room was identified in the McKinley High School Athletic Complex Master Plan as the site for the Locker Room. The site is near to the existing gymnasium, athletic field, proposed softball stadium, and adjacent to the girls P.E. Locker Room. The selected location and proposed use consolidates athletics facilities for within the school's athletic complex.

Permits required for the project and responsible authorities are identified below. Additional permits and approvals may be required depending on final construction plans.

State of Hawai'i

Department of Health

National Pollutant Discharge Elimination System (NPDES)
Variance from Pollution Controls (Noise Permit)

Hawai'i Community Development Authority

Development Permit

City and County of Honolulu

Department of Planning and Permitting

Building Permit for Building, Electrical, Plumbing, Sidewalk/Driveway, and Demolition Work
Construction Dewatering
Grubbing, Grading, and Stockpiling
Permit to Excavate Public Right-of-Way

State of Hawai'i

Department of Business Economic Development and Tourism
Hawai'i Community Development Authority
Office of Planning
Department of Education
McKinley High School
Department of Health
Environmental Planning Office
Department of Land and Natural Resources
Historic Sites Division
Office of Hawaiian Affairs

City and County of Honolulu

Board of Water Supply
Department of Enterprise Services
Department of Environmental Services
Department of Planning and Permitting
Department of Transportation Services
Police Department
Fire Department

Others

The Honorable Carol Fukunaga, 11th Senatorial District
The Honorable Brickwood Galuteria, 12th Senatorial District
The Honorable Suzanne Chun-Oakland, 13th Senatorial District
The Honorable Tom Brower, 23rd Representative District
The Honorable Della Au Belatti, 25th Representative District
The Honorable Karl Rhoads, 28th Representative District
The Honorable Ann Kobayashi, Council District 5
Hawaiian Electric
Hawaiian TelCom
Makiki/Lower Punchbowl/Tantalus Neighborhood Board No. 10
Ala Moana/Kakaa'ko Neighborhood Board No. 11
Main Library (Placement)

Chapter 200 (Environmental Impact Statement Rules) of Title 11, Administrative Rules of the State Department of Health, establishes criteria for determining whether an action may have significant effects on the environment (§11-200-12). The relationship of the proposed project to these criteria is discussed below.

1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;

Natural or cultural resources will not be lost because of the proposed action. The DOE will perform archaeological monitoring in the unlikely event that subsurface features are unearthed.

2) Curtails the range of beneficial uses of the environment;

The project will not curtail the beneficial uses of the environment.

3) Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in chapter 344, Hawai'i Revised Statutes, and any revisions thereof and amendments thereto, court decisions or executive orders;

The project does not conflict with long-term environmental policies, goals, and guidelines of the State of Hawai'i.

4) Substantially affects the economic or social welfare of the community or State;

Substantial effects on the economic or social welfare of the community or State are not anticipated. For McKinley High School, the actions will provide facilities for female athletes and the sport of softball equitable to those currently available for male athletes and the sport of baseball.

5) Substantially affects public health;

Public health will not be adversely affected. Short-term environmental impacts in the form of fugitive dust, noise from construction equipment, and minor erosion can be expected. These impacts can and will be mitigated by measures described in this Assessment and measures, such as best management practices for erosion control, to be submitted with construction plans and documents.

6) Involves substantial secondary impacts, such as population changes or effects on public facilities;

Substantial effects on public facilities are not anticipated. Existing on-campus water, wastewater, drainage, and electrical systems are adequate and available for the proposed demands and discharge flow associated with the facilities.

The proposed action will not result in population growth or changes.

7) Involves a substantial degradation of environmental quality;

Environmental quality will not be substantially degraded. The softball stadium site is the site of an existing softball field and athletic field. The Locker Room site is a vacant lawn area adjoining the existing girls P.E. Locker Room.

8) Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;

The proposed actions do not involve a commitment for larger actions. Potential environmental impacts resulting from the construction and use of both facilities are disclosed in this environmental assessment.

9) Substantially affects a rare, threatened or endangered species, or its habitat;

Rare, threatened, or endangered flora and fauna have not established habitat on the project site.

10) Detrimentially affects air or water quality or ambient noise levels;

Ambient air quality will be affected by fugitive dust and combustion emissions during construction but can be controlled by measures stipulated in this Assessment. Construction noise may be pronounced during site preparation work but should diminish as the improvements are completed. All construction activities will comply with air quality and noise pollution regulations of the State Department of Health.

Erosion control measures will be prescribed in grading plans and best management practices prepared for the project.

The softball field will be lighted for night play and will be visible from several multi-family buildings beyond the school grounds. Measures to mitigate light spillage into these buildings (and areas) residential areas were prescribed in this Assessment

Because the softball stadium is a school facility, noise associated with school activities (i.e. softball games) is allowed by regulation between the hours of 7:00 AM and 10:00 PM. The time limit should aid in limiting noise impacts to reasonable hours of the day.

Light spillage and noise will not occur on every day but primarily during high school softball tournaments held once a year. The tournament is usually held 3 to 4 days in May when the days are longer resulting in a shorter period when the stadium lights are energized limiting the hours of light spillage.

11) Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;

The action is not proposed in an environmentally sensitive area.

12) Substantially affects scenic vistas and view planes identified in county or state plans or studies, or;

Scenic vistas and view planes will not be affected.

13) Requires substantial energy consumption.

Electrical energy will be required to energize the stadium lights and safety lights along walkways, and buildings.

REFERENCES CITED

- Cultural Surveys Hawai'i. April 1992. *An Archaeological Assessment of a 5.33 Acre Parcel in the Kapi'olani Business District, Honolulu, Island of O'ahu (TMK: 2-3-009: portion 01)*. Prepared by Rodney Chiogioji and Hallett H. Hammatt. Prepared for Anbe, Aruga and Ishizu, Architects Inc.
- Department of Health, State of Hawai'i. September 1996. Title 11 Administrative Rules, Chapter 46 Community Noise Control.
- Department of Planning and Permitting, City and County of Honolulu. June 2004. Primary Urban Center Development Plan.
- EDAW, Inc. May 2009. *Final Supplemental Environmental Impact Statement Volumes I, II, and III*. Prepared for Hawai'i Community Development Authority.
- Executive Order No. 101. June 1921.
- Federal Emergency Management Agency. September 2004. *Flood Insurance Rate Map*. Community Panel No 15003C0365F.
- Group 70 International. December 2008. *McKinley High School Athletic Complex Master Plan*. DOE Project No. Q69001-07.
- Hawai'i Community Development Authority. June 2005. *Mauka Area Plan Kaka'a'ko Community Development District, Honolulu, Hawai'i*. Unofficial Compilation.
- Hirata, & Associates, Inc. November 2009. *Foundation Investigation McKinley High School Girls Athletic Locker Room, Honolulu, O'ahu, Hawai'i*. W.O. 09-4815. Prepared for Franklin Wong & Associates, Ltd.
- Mink, John F. and L. Stephen Lau. February 1990 Revised. *Aquifer Identification and Classification for Oah'u: Groundwater Protection Strategy for Hawai'i*. Water Resources Research Center, University of Hawai'i at Manoa.
- Park, Gerald Urban Planner. December 2009. *Field Observation*.
- U.S. Department of Agriculture, Soil Conservation Service. August 1972. *Soil Survey Report for Islands of Kauai, O'ahu, Maui, Molokai, and Lanai, State of Hawai'i*. In Cooperation with the University of Hawai'i Agricultural Experiment Station.

