September 23, 2020

TO: Keith E. Kawaoka  
Acting Director, Office of Environmental Quality Control  
Department of Health

FROM: Tracy Okumura  
For Public Works Administrator  
Facilities Development Branch

SUBJECT: Draft Environmental Assessment for  
Kohala Middle School – Covered Play Court  
DOE Job No. Q16200-17  
TMK: (3) 5-3-010:056  
Kapaau, Hawaii County, Hawaii

The Hawaii State Department of Education has reviewed the Draft Environmental Assessment (DEA) for the subject project and anticipates a Finding of No Significant Impact (FONSI) determination.

The information and the file required for publication, including an electronic copy of the DEA, have been provided via the Office of Environmental Quality Control (OEQC) online submission platform. We respectfully request the publication of this DEA-FONSI in the upcoming issue of the OEQC's, The Environmental Notice.

Should there are any questions, please contact Jolene Velasco, Project Coordinator of the Facilities Development Branch, Project Management Section, at 784-5129.

TO:jv  
Enclosures

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER
<table>
<thead>
<tr>
<th><strong>Action Name</strong></th>
<th>Kohala Middle School New Covered Play Court</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Document/Determination</strong></td>
<td>Draft environmental assessment and anticipated finding of no significant impact (DEA-AFNSI)</td>
</tr>
<tr>
<td><strong>HRS §343-5(a) Trigger(s)</strong></td>
<td>(1) Propose the use of state or county lands or the use of state or county funds</td>
</tr>
<tr>
<td><strong>Judicial district</strong></td>
<td>North Kohala, Hawaiʻi</td>
</tr>
<tr>
<td><strong>Tax Map Key(s) (TMK(s))</strong></td>
<td>(3) 5-3-010:056</td>
</tr>
<tr>
<td><strong>Action type</strong></td>
<td>Agency</td>
</tr>
<tr>
<td><strong>Other required permits and approvals</strong></td>
<td>Numerous</td>
</tr>
<tr>
<td><strong>Proposing/determining agency</strong></td>
<td>Department of Education, State of Hawaii</td>
</tr>
<tr>
<td><strong>Agency contact name</strong></td>
<td>Jolene Velasco</td>
</tr>
<tr>
<td><strong>Agency contact email (for info about the action)</strong></td>
<td><a href="mailto:jolene.velasco@k12.hi.us">jolene.velasco@k12.hi.us</a></td>
</tr>
<tr>
<td><strong>Email address or URL for receiving comments</strong></td>
<td><a href="mailto:jolene.velasco@k12.hi.us">jolene.velasco@k12.hi.us</a></td>
</tr>
<tr>
<td><strong>Agency contact phone</strong></td>
<td>(808) 784-5129</td>
</tr>
<tr>
<td><strong>Agency address</strong></td>
<td>3633 Waialae Avenue&lt;br&gt;Honolulu, Hawaii 96813&lt;br&gt;United States&lt;br&gt;<a href="#">Map It</a></td>
</tr>
<tr>
<td><strong>Was this submittal prepared by a consultant?</strong></td>
<td>Yes</td>
</tr>
</tbody>
</table>
Consultant

AGY LLC

Consultant contact name

Aolani Yamasato-Gragas

Consultant contact email

aolani_y@yahoo.com

Consultant contact phone

(808) 741-6089

Consultant address

1100 Ward Avenue
Suite 1020
Honolulu, Hawaii 96814
United States
Map It

Action summary

The proposed action will provide the students of Kohala Middle School a sheltered area for physical education classes, play during recess and a flexible space for various school related activities. The proposed one-story structure will be located in an open area in the middle of the property and behind the classroom buildings along Akoni Pule Highway.

The structure is approximately 8,653 square feet. The play court will provide one regulation size basketball court, four half-court basketball courts, one regulation size volleyball court and two practice volleyball courts. The covered structure will be completely enclosed and secured by a continuous chain link fence with locking gates.

Reasons supporting determination

Refer to Section 8, DETERMINATION, FINDINGS AND REASONS FOR SUPPORTING DETERMINATION in Draft EA.

Attached documents (signed agency letter & EA/EIS)

- Kohala-Middle-School-Draft-Environmental-Assessment-2020.09.22.pdf
- 9-24-2020 -Kawaoka-DEA-FONSI-Kohala-MS-Q16200-17.pdf

Action location map

- Kohala-Middle-School-Parcels - Hawaii_County-shp.zip

Authorized individual

Aolani Yamasato-Gragas

Authorization

The above named authorized individual hereby certifies that he/she has the authority to make this submission.
KOHALA MIDDLE SCHOOL
New Covered Play Court

North Kohala District, Island of Hawai‘i
TMK [3] 5-3-010:056 por.
Draft Environmental Assessment

Prepared for:
Facilities Development Branch
State of Hawai‘i Department of Education
Office of School Facilities and Support Services
3633 Waialae Avenue
Honolulu, Hawaii‘i 96813

Prepared by:
AGY, LLC
1100 Ward Avenue Suite 1020
Honolulu, Hawaii 96814

October 2020
TABLE OF CONTENTS

1. PROJECT SUMMARY .......................................................... 1
2. DESCRIPTION OF PROPOSED PROJECT .................................. 2
   2.1 Purpose and Need of Project .............................................. 2
   2.2 Site Background and Description ..................................... 2
   2.3 Existing Structures and Uses ........................................... 3
   2.4 Technical Characteristics ............................................... 8
       2.4.1 Covered Play Court ................................................. 8
       2.4.2 Circulation and Off-Street Parking ......................... 9
       2.4.3 Infrastructure ..................................................... 9
       2.4.4 Demolition and Grading ......................................... 11
       2.4.5 Landscaping ...................................................... 11
       2.4.6 Economic Characteristics ...................................... 11
       2.4.7 Social Characteristics .......................................... 23
3. DESCRIPTION OF THE AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES ................................................................. 23
   3.1 Climate ........................................................................ 23
   3.2 Topography and Soils .................................................... 24
   3.3 Hydrology ..................................................................... 26
   3.4 Wastewater ................................................................. 27
   3.5 Flood Hazard ............................................................... 28
   3.6 Biological Resources .................................................... 28
   3.7 Historical, Cultural, and Archeological Resources ............. 29
   3.8 Social Characteristics ................................................... 31
   3.9 Visual Resources .......................................................... 32
   3.10 Air Quality ................................................................. 33
   3.11 Noise ......................................................................... 34
   3.12 Public Services ........................................................... 35
4. RELATIONSHIP TO LAND USE POLICIES AND CONTROLS ............... 36
   4.1 State of Hawai‘i ............................................................. 36
       Hawai‘i State Plan ....................................................... 36
       State Land Use Classification .................................... 37
   4.2 County of Hawai‘i .......................................................... 40
       Zoning ......................................................................... 40
       General Plan ................................................................ 40
       North Kohala Community Development Plan ............... 42
5. ALTERNATIVES TO THE PROPOSED ACTION .................................. 44
   5.1 No Action ................................................................. 44
   5.2 Alternative Site .......................................................... 44
6. PERMITS AND APPROVALS ........................................................................................................ 45
7. CONSULTED PARTIES ............................................................................................................. 46
8. DETERMINATION, FINDINGS AND REASONS FOR SUPPORTING DETERMINATION ... 47
   8.1 Significance Criteria .................................................................................................................. 47
   8.2 Findings .................................................................................................................................. 51
   8.3 Reasons Supporting Determination.......................................................................................... 51

LIST OF FIGURES
Figure 1: Location Map .................................................................................................................. 5
Figure 2: TMK Map .......................................................................................................................... 6
Figure 3: General Site Plan ................................................................................................................ 7
Figure 4: Site Layout Plan ................................................................................................................ 12
Figure 5: Grading Plan ..................................................................................................................... 13
Figure 6: Floor Plan .......................................................................................................................... 14
Figure 7: Floor Plan (Additive Alternate) ....................................................................................... 15
Figure 8: Marking Plan .................................................................................................................... 16
Figure 9: Roof Plan .......................................................................................................................... 17
Figure 10: Exterior Elevations ......................................................................................................... 18
Figure 11: Exterior Elevations (Additive Alternate) ...................................................................... 19
Figure 12: Building Sections .......................................................................................................... 20
Figure 13: Individual Wastewater System ....................................................................................... 21
Figure 14: Individual Wastewater System ....................................................................................... 22
Figure 15: Soil Map .......................................................................................................................... 25
Figure 16: State Land Use Map ....................................................................................................... 38
Figure 17: Zoning Map .................................................................................................................... 39

LIST OF TABLES
Table 1: Existing Buildings ............................................................................................................. 4

APPENDIX
Appendix B – Drainage Runoff Calculation for Kohala Middle School Covered Placourt DOE Job No. Q16200-17
Appendix C - Early Consultation Comment Letters
1. PROJECT SUMMARY

Proposed Action: Kohala Middle School Covered Play Court
DOE Job No. Q16200-17

Applicant: Facilities Development Branch
State of Hawai‘i Department of Education
Office of School Facilities and Support Services
3633 Wai‘alae Avenue
Honolulu, Hawai‘i 96813

Land Owner: State of Hawai‘i

Agent for the Applicant: AGY LLC
1100 Ward Avenue, Suite 1020
Honolulu, Hawai‘i 96814

Project Location: Halaula, North Kohala, Hawai‘i

Approximate Area: 8.606 acres

Tax Map Key: TMK [3] 5-3-010:056

Address: 53-4155 Akoni Pule Highway
Kapaau, Hawai‘i 96755

Existing Uses: Public

Proposed Uses: Public

State Land Use District: Urban District

Zoning District: RS-15

Community Development Plan: North Kohala

Special Management Area (SMA): Outside the SMA

Flood Insurance Rate Map: Flood Zone X: areas designated outside the 2% annual chance flood plain

Need for Assessment: Chapter 343, Hawai‘i Revised Statues §343-5 (a) Use of State Lands and Funds

Anticipated Determination: Finding of No Significant Impact
2. DESCRIPTION OF PROPOSED PROJECT

The State of Hawai’i Department of Education (DOE) proposes to construct a multi-purpose covered play court on the Kohala Middle School campus (Figure 1). Kohala Middle School is located in the town of Halaula, on the island of Hawai’i. The school is within the North Kohala District and located on the makai side of Akoni Pule Highway, approximately 2.8 miles southeast of Kohala High and Elementary School. The property is identified as Tax Map Key 5-3-010:05 with a total area of 8.606 acres (Figure 2).

2.1 Purpose and Need of Project

The purpose of the project is to provide a sheltered play area for the students of Kohala Middle School. Located on the northeast coast of the Big Island, the windward side of Kohala receives approximately 60 inches of rain annually. The significant amount of rain reduces the number of days and times for outdoor recess, recreation, and physical education.

In addition to the physical education classes and a play space during recess, the new covered play court will provide the school with a flexible space for creative projects, school gatherings, and celebrations. The student body currently holds assemblies in the front outdoor courtyard or the back open field. The new space will allow the entire school to gather in one place under shelter during inclement weather conditions.

2.2 Site Background and Description

Kohala High and Elementary School, formerly Honomaka’u School, opened in 1837 and was renamed Kohala High and Grammar School in 1926. Halaula School opened later in 1939 for grades one through eight for the workers of the flourishing Kohala Sugar Plantation Company. In the 1930s there were nine public schools in the district.
However, by the 1950s, local sugar mills began slowing down, new generations were leaving the plantations, and stores and schools began closing. By the 1960s, as schools consolidated to address the dwindling population, only Halaula School and Kohala High School remained. In the mid-1970s the last of the sugar plantations closed in Kohala. During those years, Halaula School was also referred to as the Kohala Annex, and considered a part of the Kohala High and Elementary School.

In the late 1970s Halaula School was briefly used as a preschool and also by other local community organizations. In the late 1990s, a group of staff and community members lobbied the Board of Education for a separate school devoted the unique needs of middle school students in grades six through eight. By 1993 the Halaula School was once again used as a middle school, as a satellite campus of Kohala High and Elementary School, and referred to as Halaula Annex. The school shared a few facilities with the Kohala High and Elementary campus in the 1990s, however by 2000 the school was a separate campus with separate facilities. In 2000, Kohala Middle School was formally created and renamed from Halaula School to Kohala Middle School.

2.3 Existing Structures and Uses

Today the Kohala Middle School campus is comprised of six classroom buildings and an outdoor basketball court (Figure 3). The entire campus is compliant with the Americans with Disabilities Act of 1990 (ADA) requirements. Three of the classroom buildings are modular classrooms, with the most recent modular classroom addition completed in 2006. Most of the campus buildings are located approximately 40 feet to 60 feet from Akoni Pule Highway, with a 3-foot high chain link fence fronting the campus. Tall coconut trees, approximately 35 feet high, line the street front with a large grass courtyard opening up to Building A. The outdoor basketball court and two of the
modular classrooms are located behind Building A, B and C. Two-thirds of the 8.606 acre campus is a large open field at the makai side of the property.

Table 1: Existing Buildings

<table>
<thead>
<tr>
<th>Building</th>
<th>Function</th>
<th>Square Feet (sf)</th>
<th>Year Built</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building A</td>
<td>Administrative Offices, General Classrooms, Cafeteria (Lower Level), Kitchen (Lower Level), Health Room (Lower Level)</td>
<td>11,969 sf</td>
<td>1939</td>
</tr>
<tr>
<td>Building B</td>
<td>General Classrooms</td>
<td>2,000 sf</td>
<td>1940</td>
</tr>
<tr>
<td>Building C</td>
<td>Restrooms</td>
<td>457 sf</td>
<td>1940</td>
</tr>
<tr>
<td>P-1</td>
<td>General Classrooms</td>
<td>750 sf</td>
<td>1991</td>
</tr>
<tr>
<td>P-2/P-3</td>
<td>General Classrooms</td>
<td>1,500 sf</td>
<td>1991</td>
</tr>
<tr>
<td>TB-1/TB-2</td>
<td>General Classrooms</td>
<td>1,800 sf</td>
<td>1996</td>
</tr>
</tbody>
</table>

There are six additional dwelling structures on the lower Kapaau side of the property boundary, but not part of the Kohala Middle School campus. These dwellings are used as teachers’ cottages and managed by the DOE Project Control System Accountability Branch.
FIGURE 1
KOHALA MIDDLE SCHOOL LOCATION MAP

KOHALA MIDDLE SCHOOL
NEW COVERED PLAY COURT
FIGURE 2
TAX MAP

KOHALA MIDDLE SCHOOL
NEW COVERED PLAY COURT

POR. HALAULA SUB'D., L.D. CT. APP. II16, N. KOHALA, HAWAII. (Formerly por. 5-3-04 B 07)
2.4 Technical Characteristics

2.4.1 Covered Play Court

The proposed covered play court is approximately 8,653 square feet (sf), with current layout dimensions measuring approximately 108’-6” by 74’-0” for the play court and an additional 15-8” by 39’-8” for storage and restrooms. The play court will be marked for one regulation size basketball court, four half-court basketball courts, one regulation size volleyball court, and two practice volleyball courts. The court surface is an all-weather court surface per Department of Education specifications. The courts will have six basketball backboards and five sleeve boxes for volleyball net poles. The interior walls and columns will be padded with matching foam pads for safety. The covered structure will be completely enclosed and secured by a continuous chain link fence with locking gates.

The structure will be built on a poured in place concrete foundation with a rigid steel frame and topped with a pitched standing seam metal roof. The storage and restrooms, on the east side of the structure, will be framed with cement masonry unit (CMU) walls for protection and privacy. Chain link fencing around the remainder of the structure will allow for natural ventilation and visual security. The roof eves will extend over the concrete walkways around the building to provide cover and prevention of rain on the play court.

The maximum building height allowed within the Residential District, in the Hawai‘i County Code Section 25-5-5, is 35’-0”. The new single-story structure is approximately 33’-6” in height measured from finished grade to top of roof vent (Figure 10, Figure 11). The structure meets the building height requirements for Hawai‘i County Code. The roof height for the new covered play court is required to meet the interior clear ceiling
height standards for basketball and volleyball courts. The DOE Education Specifications (EDSPECS) for Middle/Intermediate Schools (March 2006) Subsection 372 Covered Playcourt provides the standards for the development of the given space.

The new structure is surrounded on the west, south and east by existing structures, and has a large open field to the south. The new structure is well within Hawai‘i County Yard and Setback Requirements for Residential zoned properties on all sides.

2.4.2 Circulation and Off-Street Parking

A new 20-foot wide asphalt driveway will be built to provide a fire apparatus access to the new structure. The existing school driveway is approximately 12 feet wide and located off of Akoni Pule Highway, west of the modular classrooms at the front of the campus. The existing school driveway veers west after about 150 feet then extends north along the entire western property boundary. The new fire lane will commence connecting to the existing school driveway, near the drive bend, about 160 feet from Akoni Pule Highway (Figure 4). A new 21’-6” wide pipe gate will be constructed to secure access to the new fire lane driveway.

A new ADA accessible walkway will connect the proposed structure with existing ADA walkways and ramps connecting to the buildings on campus.

Changes to on-campus vehicle circulation and parking configurations are not proposed. Short-term modifications may be required to accommodate the movement of construction equipment and traffic to and from the building site.

2.4.3 Infrastructure

Domestic water will be supplied from the existing on-campus water system. A new 1.5-inch water line will tie into an existing copper 1.5-inch service water line near the
northwest corner of Building A to the proposed structure (Figure 4). New boys’ and girls’ restrooms are also included in the Additive Alternate for development. The new individual wastewater system for the restrooms is comprised of a 4-inch wastewater line, septic tank system and 41-foot by 24-foot absorption bed (Figure 13, Figure 14).

Electrical power will be routed in underground conduits from the existing electrical system to an electrical panel installed in the utility closet.

Fire sprinklers are not required for the structure. A fire lane with a latching pipe gate will be constructed to provide access to the new fire hydrant as required by fire department standards. A new fire hydrant will be installed between Building B and the new covered play court. The new 6-inch fire water line will connect to the existing 12-inch water line along Akoni Pule Highway, on the west side of the campus driveway. The new fire line will be installed with a new 6-inch detector check meter and box and 6-inch backflow preventor near the point of connection in compliance with the rules and regulations of the Hawai‘i County Department of Water Supply.

Roof runoff will be collected and discharged into the existing campus drainage system. The new driveway, walkways and drain lines off of the south side of the new structure will exit to the two existing drain sumps, one located between Building C and the new covered play court, and the other located between Building A and the new covered play court (Figure 5). Runoff from the new driveway, walkways and drain lines exiting on the west, north and east sides of the new structure will surface flow to the large grass area north of the project site. Surface flow drainage between existing and new paved surfaces will be guided via gently grassed swales dissipating to the large grass field. The large open grass area has gentle slopes of around two percent to the north, in the makai direction.
2.4.4 Demolition and Grading

The construction project limit is approximately 39,000 sf which includes 11,225 sf for the covered play court, walkways and utilities and 5,175 sf for the fire lane driveways. The project limits are defined in the Grading and Erosion Control Plan (Figure 5).

The open, grass field is free of above ground structures, therefore, demolition will not be required for the covered play court. However, there is a banyan tree with a 35 foot height and 60 foot spread, as well as an octopus tree with an 18 foot height and 20 foot spread located in the fire lane access route. Both trees are considered invasive with aggressive roots and not recommended for replanting. Trees, root ball and stumps will be properly removed and disposed.

Earthwork quantities are estimated at removing approximately 247 cubic yards (cy) of material and importing 523 cy of fill for the topping off of the ground surface. Areas disturbed by construction will be restored to pre-construction conditions or better.

2.4.5 Landscaping

Aside from re-grassing disturbed areas with construction, landscaping is not proposed.

2.4.6 Economic Characteristics

The construction costs are estimated at $3.6 million and will be funded by the State of Hawai‘i. The project will be completed in one phase with construction to commence around Spring / Summer 2021 with completion by Spring / Summer 2022.
Figure 4: Site Layout Plan
Figure 5: Grading Plan

EROSION CONTROL PLAN (ECP) LEGEND
- S FENCE
- D STABILIZED CONSTRUCTION ENTRANCE
- PS PERMEABLE ROOF BARER
- G GRATED INLET FILTER
- S SLOPE STABILIZATION
- C CONTAINMENT AREA

1. SEE SHEET OFG "WATER POLLUTION & EROSION CONTROL PLANNING AND DESIGN"
2. THE CONTRACTOR SHALL MAKE NECESSARY ON-SITE SPECIFIC ADJUSTMENTS TO EROSION CONTROL MEASURES TO PROTECT SURFACE WATER RUNOFF AND GROUNDWATER QUALITY.
3. THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL MEASURES IF IT IS NECESSARY TO THE AVOID PROLIFERATION AND OUTBREAK GROUNDWATER QUALITY DUE TO EARTHANDING ACTIVITIES.
Figure 6: Floor Plan

Playcourt Floor Plan (Base Bid)
Scale: 1/8" = 1'-0"

Enlarged Closet Plan (Base Bid)
Scale: 1/8" = 1'-0"

Provide foam pads at CMU walls to match column pads.

Metal grate covers @ all columns typ.

Provide padded column covers @ all columns typ.

FOAM PADDING TO MATCH COLUMNS

H.M. Door/Frame w/Paint Fin. typ.

Program Bell Jr

Flyway Backed

Flyway Backed

Foam Pads to match columns

Kohala Middle School
Covered Playcourt
53-4155 Akoni Pule Highway
Kapaa, Hawaii 96755

This work was prepared by me or under my supervision and construction will be under my observation.
NOTE: ENSURE SEPARATION MEMBRANE BETWEEN ALL DISSIMILAR METALS, TYP.

STANDING SEAM MTL ROOF TYP.

FALL PROTECTION HOOK (TYP. OF 9)

NOTE:

STANDING SEAM MTL ROOF TYP.

RIDGE VENT

HIPS

METAL GUTTER, TYP.

FALL PROTECTION HOOK (TYP. OF 9)

FALL PROTECTION HOOK (TYP. OF 9)

NOTE:

ENSURE SEPARATION MEMBRANE BETWEEN ALL DISSIMILAR METALS, TYP.

STANDING SEAM MTL ROOF TYP.

RIDGE VENT

HIPS

METAL GUTTER, TYP.

ROOF PLAN (ADDITIVE ALTERNATE #1)

SCALE: 1/8" = 1'-0"

Figure 9: Roof Plan
Figure 11: Exterior Elevations (Additive Alternate)
METAL STANDING SEAM ROOFING ON METAL PURLINS @ 4'-0" O.C.

METAL STANDING SEAM ROOFING ON METAL TRUSSES PER STRUCTURAL.

METAL OR TRANSLUCENT SIDING, WHERE OCCURS - SEE ELEV.

STEEL RIGID FRAME PER STRUCTURAL, TYP.

METAL SOFFIT, TYP.

CHAIN-LINK FENCE (ADDITIVE ALTERNATE #2)

METAL STANDING SEAM ROOFING ON METAL PURLINS @ 4'-0" O.C.

STEEL BACKBOARDSUPPORTS W/ PAINT FIN, TYP. - SEE STRUCTURAL

FIXED BACKBOARD W/ STEEL SUPPORTS PER STRUCTURAL TYP.

BIRD SCREEN TYP.

METAL STANDING SEAM ROOFING ON METAL PURLINS @ 4'-0" O.C.

METAL OR TRANSLUCENT SIDING WHERE OCCURS - SEE ELEV.

STEEL RIGID FRAME PER STRUCTURAL, TYP.

METAL SOFFIT, TYP.

CHAIN-LINK FENCE (ADDITIVE ALTERNATE #2)

METAL STANDING SEAM ROOFING ON METAL TRUSSES PER STRUCTURAL.

PROVIDE PAINT FINISH AT ALL STRUCTURAL MEMBERS

GRADE

FIN. GRADE

6" MTL STUDS @ 24" O.C.

5/8" TYPE "X" GYP BD CLNG W/PAINT FIN

T.O. PLATE FIN. FLR

BIRD SCREEN

FINISH AT ALL STRUCTURAL MEMBERS

18'-0"

2/13/16" BIRD SCREEN TYP.

12'-8"

TYP.

12" CONT. SPLASH BLOCK (TYP)

TMK: 5-3-010:056

DEPARTMENT OF EDUCATION
STATE OF HAWAII

KOHALA MIDDLE SCHOOL
COVERED PLAYCOURT
53-4155 AKONI PULE HIGHWAY
KAPAAU, HAWAII 96755

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION WILL BE UNDER MY OBSERVATION

EXPIRATION DATE

OF THE LICENSE

APPROVED BY:

CHECKED BY:

DRAWN BY: DESIGNED BY:

DATE

JOB NO.

OF

SHTS

SHEET

DRAWING NO.

APPROVED:

DATESHT.

OF

DESCRIPTION

SYM.

NO.

REVISION

Q16200-17LMH LMH

KN/JM LMH

AS SHOWN MAY  2020 64

DEPARTMENT OF EDUCATION
STATE OF HAWAII

04/30/22

JV

CROSS SECTION (BASE BID)

LONGITUDINAL SECTION (BASE BID)

CROSS SECTION (ADDITIVE ALTERNATE #1)

LONGITUDINAL SECTION (ADDITIVE ALTERNATE #1)

Figure 12: Building Sections

20
Figure 13: Individual Wastewater System
2.4.7 Social Characteristics

The new covered play court will have an occupant load of 401 persons. The new structure will provide a place, during inclement weather, for students to play and for physical education classes, as well as a space large enough for all-school gatherings, celebrations, and other classes and events. The student body currently holds assemblies on the outdoor courtyard along Akoni Pule Highway or the back, open field.

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES

3.1 Climate

Existing Conditions

The island of Hawai‘i is subtropical. The prevailing east and east-northerly trade winds occur approximately 70 percent of the year with higher percentages in the summer months than winter. This results in light and variable wind conditions. The climate in the area is warm and temperate with temperatures ranging between 50 and 90 degrees Fahrenheit. The area also receives a significant amount of rain with a mean annual rainfall amount of approximately 60 inches.

Potential Impacts and Mitigative Measures

The proposed covered play court is a single-story open air structure. The ground preparation for the new building, driveway, walkway and utilities will involve removing existing landscaping, but new landscaping will not be involved besides re-grassing of disturbed areas. The proposed play court is not expected to have any impact on the climate. As such, no significant impacts to local temperature, rainfall, or wind patterns are anticipated for either the short-term or long-term. No mitigation measures are proposed.
3.2 Topography and Soils

Existing Conditions

The Kohala Middle School property has been leveled and graded for school site development. The site elevation ranges from 335 feet to 305 feet. The campus is primarily an administration building, classrooms, outdoor play court and a large grassy field. The location for the covered play court will be near the outdoor basketball court in the large field area with slopes at roughly 1 to 3 percent in the northerly direction. The entire campus is generally sloping from the southeast to the northwest. The proposed driveway and walkways associated with the new structure are located on slopes ranging from 3 to 7 percent. The construction of the covered play court would be occurring around the 317-foot elevation area.

Soil for the entire campus is Kohala silty clay, 0 to 3 percent slopes (Figure 15). The Kohala silty clay soil type are deep, well-drained soils formed from weathered basic volcanic ash and residuum from basaltic lava.

Potential Impacts and Mitigative Measures

The proposed project will involve grading and site preparation for the new structure, utilities, driveway and walkway which will cause a minor change in topography. The soil type will remain unchanged and erosion will be controlled. The proposed covered play court will not involve any change to the topography or soils since the construction will occur in the middle of the campus.

Short-term construction related impacts associated with the construction may include minor soil loss or erosion. Construction will employ Best Management Practices (BMPs) to minimize or prevent such occurrences. BMPs include silt fences, periodic watering to minimize dirt particles, and stabilized construction road access.
<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>416</td>
<td>Kohala silty clay, 3 to 12 percent slopes</td>
</tr>
<tr>
<td>435</td>
<td>Kohala silty clay, 0 to 3 percent slopes</td>
</tr>
<tr>
<td>436</td>
<td>Kohala silty clay, 12 to 20 percent slopes</td>
</tr>
</tbody>
</table>

**FIGURE 15**

**SOIL SURVEY MAP**

**KOHALA MIDDLE SCHOOL**

**NEW COVERED PLAY COURT**

SOURCE: UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCE CONSERVATION SERVICE,
WEB SOIL SURVEY,
NATIONAL COOPERATIVE SOIL SURVEY
3.3 Hydrology

Existing Conditions

The project area is situated between two perennial stream gulches, Wainaia and Halelua Gulch. Halelua Stream is approximately 900 feet to the east of the school. Wainaia Stream is approximately 2000 feet to the east of the school. Surface drainage flows on the subject property run in the northerly direction. There are no surface water features on the premises.

The project area is within the Hawi aquifer system, which has a sustainable yield of approximately 27 million gallons per day (MGD). The existing water use is only 0.582 MGD.

Potential Impacts and Mitigative Measures

The proposed project does not involve any activities that would alter existing stream channels, wetlands, or other surface water bodies.

Short-term construction related impacts associated with the construction may include minor soil erosion. Construction will employ BMPs to prevent contaminants such as sediment, petroleum products, and debris from leaving the site via storm water runoff. BMPs include scheduling work during periods of minimal rainfall, placement of permanent erosion control measures on lands where vegetation is removed as quickly as possible, silt fences, dust fences and stabilized construction vehicle access ways.

The contractor will comply with Hawai‘i Administrative Rules, Chapter 11-55 Water Pollution Control, Department of Health, regarding clean water and consult with the Clean Water Branch of the State of Hawai‘i Department of Health, to ensure acceptable
construction methodology and materials. The contractor will also secure permits, if required, prior to construction activities.

Since the disturbed area is expected to be under an acre, National Pollutant Discharge Elimination System (NPDES) Construction Storm Water General Permit Coverage is not required.

The drainage study completed for this project estimated new construction will increase runoff volume by about 0.4 cubic feet per second (CFS). Mitigation measures for the construction include directing approximately 0.25 CFS to existing sumps and dissipating 0.15 CFS on the existing play field and grassed area. Due to the mitigation measures, there will be no increase to the existing runoff volume with the new construction. The proposed improvements will have negligible drainage impact.

Water will be connected to the school existing system. Only a small fraction of the sustainable yield for the Hawi Aquifer is currently being used. The proposed improvements will have negligible impact on surface or groundwater resources.

3.4 Wastewater

Existing Conditions

The North Kohala community is not served by a municipal wastewater treatment facility. In 2009, Kohala Middle School campus converted from a cesspool system to a septic tank system. Sewage effluent generated by the proposed project will be handled with an on-site individual wastewater system based on the requirements of Hawai‘i Administrative Rules Chapter 11-62 Wastewater Systems, Department of Health.
Potential Impacts and Mitigation Measures

Sewage disposal will be handled by the new on-site individual waste water system designed for the proposed covered play court and approved by the Department of Health Wastewater Branch.

3.5 Flood Hazard

Existing Conditions

The project area is designated Zone X, outside flood prone areas, as determined by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM). The project site a located a mile south from Keawaeli Bay and outside the tsunami evacuation area.

Potential Impacts and Mitigative Measures

The campus is not within a flood prone area or the tsunami evacuation area. The proposed project will not increase flood hazards to the surrounding area. No mitigation measures are required.

3.6 Biological Resources

Existing Conditions

The Kohala Middle School campus is located in a cleared and graded area. There are no native plant or animal species in the project area, located on campus grounds. As such, no threatened or endangered species of plants or animals are anticipated within the project area.
Potential Impacts and Mitigative Measures

A banyan tree with a 35’ height and 60’ spread and an octopus tree with an 18’ height and 20’ spread are located in the path of the fire lane access route. Both trees are not native and considered invasive with aggressive roots, therefore not recommended for replanting in the project area. Both trees, root balls and stumps will be properly removed and disposed.

There will be no significant impact to native flora or fauna or habitats, as the vegetation was altered long ago.

3.7 Historical, Cultural, and Archeological Resources

Existing Conditions

The project area is located within the Pueke and Kukuiwaluhia Ahupua’ā. The greater North Kohala region has been inhabited for centuries and was once a place of residence for Native Hawaiian chiefs and rulers, including Kamehameha I. In 1841, the first Christian missionaries settled in North Kohala, building homes, churches and schools. In 1863, the Kohala Sugar Company was established and the sugar plantations eventually proliferated in the area due to the ideal growing conditions. By the 1880s, six sugar mills were operating in North Kohala. In a 1911 map of the Kohala Sugar Company, the entire project area is shown as sugar cane fields.

According to State Historic Preservation Division an archeological inventory survey was conducted in 1994 in which no archeological historic properties were identified. The report stated that any pre-contact surface features that may have once been in the project area have probably been destroyed by mechanized land modifications associated with sugar cane cultivation and/or construction of the school grounds.
Archeological monitoring work was completed in 2009 during construction for the wastewater system upgrades at Kohala Middle School. At the time, no historic or cultural materials were discovered. Standard monitoring practices were followed, including documenting the project area and excavations trenches, and taking profiles of representative trench walls for soil analysis. According to the report, the stratigraphic sequences from the project indicated the importation of fill sediments associated with previous construction activities over natural silty clay. No burial pits, cultural features, or cultural layers were exposed, nor were pre-contact or historic cultural materials found.

There are no known cultural or subsistence gathering places, on property or nearby, to which the subject property must be travelled en route.

Potential Impacts and Mitigative Measures

Construction of the proposed covered play court, utility connections, and access improvements will involve ground disturbance in the form of grading and excavation. It is anticipated that no subsurface cultural or historical resources are present; however, should subsurface remains, artifacts, or other historical deposits be discovered during excavation activities, all work shall cease and the appropriate agencies and authorities, including the State Historic Preservation Division, will be notified.

State Historic Preservation Division requested archeological monitoring for identification purposes and archeological monitoring proceeding under the monitoring provisions provided by the Tulchín and Hammatt Archeological Monitoring Plan (January 2009). On-site archeological work is recommended for ground disturbing work due to the potential for hearths, storage pits, burials, or remains associated with the early founding of the school to be present below the former agricultural plow zone or at depths not impacted by initial school construction. Based on initial monitoring results, a written request may be made to the State Historic Preservation Division to change from on-site
to weekly spot monitoring, ensuring the archaeologists have the opportunity to observe and document appropriate stratigraphic and archaeological data within the project area.

The proposed project and school activities will have no effect on the existing public use of any uplands, beach or ocean waters, or traditional or customary gathering activities. No mitigation is proposed.

### 3.8 Social Characteristics

#### Existing Conditions

Kohala Middle School is a part of the Hawai‘i State Department of Education, Hawai‘i District Kohala Complex, which also includes Kohala High and Elementary School. The district serves a small community of about 6,000 people. The student enrollment at Kohala Middle School is about 180 students. The design enrollment for the school is 325 students.

The school currently uses the outdoor basketball court for physical education and recess. For school-wide assemblies or activities, the school uses the open space areas in the front and back of campus.

#### Potential Impacts and Mitigative Measures

The outdoor basketball court will remain open for use during most of the construction period but will be closed during certain construction phases. Temporary use of neighboring facilities at the Kohala High and Elementary School campus, as well as use of recreational facilities at Kamehameha Park can be arranged with the County of Hawai‘i Department of Parks and Recreation and the administration at Kohala High and Elementary School, if needed, during school hours. Kamehameha Park is located 1.7 miles from Kohala Middle School. Kamehameha Park is a district park with a large
community center complex, gymnasium, playfield, tennis courts, swimming pool, outdoor courts and ball fields. The Kohala High and Elementary School campus has a gym, track and field, playground and outdoor courts. Kohala High and Elementary School is located approximately 2.8 miles from the proposed project.

Additional staffing will not be required with the new structure. The use of the new covered play court by grade level, day, and time will be scheduled by teachers and school administrators. Custodial staff will maintain the structure and open and secure the facility as needed.

In addition to the physical education classes and a play space during recess, the new covered play court will provide the school with a flexible space for creative projects, school gatherings, and celebrations. The new covered play court will have an occupant load of 401 persons. The new space will allow the entire school to gather in one place under shelter during inclement weather conditions.

3.9 Visual Resources

Existing Conditions

The County of Hawai‘i General Plan and North Kohala Community Development Plan both identify the views of the Kohala Mountains and the views of the green grazing lands and panoramic vistas of the coastline from Akoni Pule Highway and Kohala Mountain Road as important views to maintain.

Building A is the only two-story building on campus, approximately 25 feet high on the mauka side of the building with one floor, and two-floors on the makai side. Views of the coastline are not visible from Akoni Pule Highway due to existing structures on the property and the surrounding vegetation. The proposed structure does not exceed the County of Hawai‘i Residential zoning district height limit of 35 feet.
Potential Impacts and Mitigative Measures

The proposed project, over the short-term and long term, will not significantly alter the views of the coastline from Akoni Pule Highway or Kohala Mountain Road. The proposed covered play court is a single story structure located behind other structures on campus, looking toward the coastline from the highway. Views of the Kohala Mountains from Akoni Pule Highway will not be affected since the entire campus is located on the makai side of the highway.

3.10 Air Quality

Existing Conditions

The air quality at Kohala Middle School is primarily affected by pollutants derived from the volcanic emissions from Kilauea Volcano. The emissions of sulfur dioxide occasionally affect the air quality, but are usually carried to the southwest around the island and not likely to affect the project site. Vehicle exhaust emissions from Akoni Pule Highway and neighboring roads also contribute to local air pollution. In general, the ambient air quality of the project area meets all federal and state standards as regulated by the State Department of Health, Clean Air Branch.

Potential Impacts and Mitigative Measures

Short-term noise impacts would be generated from construction-related activities, such as exhaust emissions and dust, at the project site. However, these impacts are not anticipated to be significant as they would be short term and temporary in nature and would not result in long-term adverse impacts to the surrounding environment.

Proposed mitigation measures include the installation of dust screen barriers, periodic watering to minimize air borne particles, and proper maintenance of construction vehicles. Construction activities will be conducted in accordance with State air pollution
control regulations as outlined in Hawai‘i Administrative Rules, Chapter 11-60 Fugitive Dust, Department of Health. Construction will employ Best Management Practices to minimize or prevent such occurrences.

3.11 Noise

Existing Conditions

The noise at Kohala Middle School is typical of common noises at middle schools and include students playing and learning activities, school bells and facility grounds keeping and maintenance activities. The sound levels outside of the project site are typical of residential areas. Surrounding ambient sound levels are minimal and are influenced primarily by ambient noise typical of residential environments derived mainly from resident activities and motor vehicles along Akoni Pule Highway, such as emergency vehicle sirens, buses and heavy and medium duty trucks.

Potential Impacts and Mitigative Measures

Changes in ambient noise levels at the project site will be negligible because the proposed action will not subsequently alter existing land use and activities. As such, long-term, significant adverse noise impacts are not anticipated as the noise generated by the proposed covered play court would be consistent with the existing ambient noise typical of a middle school and residential environment. The noise is generally limited to school days between the hours of 7:30 AM and 4:30 PM.

Short-term noise impacts would be generated from construction-related activities at the project site. Noise generated by activities, such as construction vehicles, can generate intermittently high noise levels. However, these impacts are not anticipated to be significant as they would be short term and temporary in nature and would not result in long-term adverse impacts to the surrounding environment.
Short-term noise-generating activities would be conducted in accordance with Hawai’i Administrative Rules, Chapter 11-46 Community Noise Control, Department of Health. Mitigation includes limiting the hours and days of construction to daylight hours between 7:00 AM and 6:00 PM, Monday through Friday, excluding certain holidays, and 9:00 AM and 6:00 PM on Saturdays. Construction is not permitted on Sundays. The contractor will develop a time and work schedule in consultation with the school administration to minimize the interference while classes are in session.

3.12 Public Services

Existing Conditions

Police service for Kohala Middle School is provided by the Hawai’i Police Department, Kapaau Police Station. The station is located approximately 1.3 miles northwest from the project site. The Hawai’i Fire Department North Kohala Fire Station No. 15 is located on the same property as the Police Station. Kohala Hospital is also located in Kapaau, near the fire and police stations, approximately 1.4 miles northwest from Kohala Middle School.

Potential Impacts and Mitigative Measures

The proposed project will improve public service in the form of education and will not significantly increase the demand or create a burden on other public services, such as police, fire, trash, medical and other services. As such, no mitigation is proposed.
4. RELATIONSHIP TO LAND USE POLICIES AND CONTROLS

4.1 State of Hawai‘i

Hawai‘i State Plan

The Hawai‘i State Plan (Chapter 226, Hawai‘i Revised Statutes) establishes a statewide planning system with an overall theme, goals, objectives, policies, and priority guidelines to guide future long-range development of the State.

The proposed project components are consistent with the Hawai‘i State Plan objectives and policies for socio-cultural advancement-health (§226-20), which states:

   (b) To achieve the health objectives, it shall be the policy of this State to:

      (1) Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.

The proposed project components are consistent with the Hawai‘i State Plan objectives and policies for socio-cultural advancement-education (§226-21), which states:

   (a) Planning for the State’s socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of education opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.

   (b) To achieve the education objective, it shall be the policy of this State to:

      (1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.
(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.

(3) Provide appropriate education opportunities for groups with special needs.

(4) Promote educational programs which enhance understanding of Hawai’i’s cultural heritage.

(5) Provide higher educational opportunities that enable Hawai’i’s people to adapt to changing employment demands.

The new covered play court will promote these goals, objectives and policies by supporting educational programs relating to personal health and physical fitness. Enhancing school educational facilities in North Kohala also improves the quality of life, community, and social well-being of the region.

State Land Use Classification

State Land Use Districts are established by the State Land Use Commission in accordance with Chapter 205, Hawai’i Revised Statutes. There are four classifications of land under this districting system: Conservation, Agricultural, Rural, and Urban. Uses in the Conservation District are regulated by the Board of Land and Natural Resources; Agricultural District by the Land Use Commission; uses in the Rural District by the Land Use Commission and county governments; and uses in the Urban District by the respective county government. Kohala Middle School is within the Urban district (Figure 16). The following sections describe the County of Hawai’i regulations.
FIGURE 16
STATE LAND USE MAP
KOHALA MIDDLE SCHOOL
NEW COVERED PLAY COURT
FIGURE 17

ZONING MAP

KOHALA MIDDLE SCHOOL
NEW COVERED PLAY COURT
4.2 County of Hawai‘i

Zoning

The County zoning for the proposed project is Residential (RS-15) (Figure 17). Schools are a permitted use in Residential zoned districts. The 8.6 acre TMK parcel has a split zoning approximately 60% Residential (RS-15) and 40% Agricultural (A-20). Kohala Middle School campus is entirely located in the RS-15 zone, and the Agricultural zoned portion is on the northern portion of the property. Adjacent parcels are zoned Agricultural (A-20a) and Residential (RS-15). Nearby parcels are also zoned Neighborhood Commercial (CN-10) and General Industrial (MG-10).

General Plan

The General Plan for the County of Hawai‘i is “the blueprint that guides the long-term development of Hawai‘i Island”. The document provides the goals, policies, standards, and courses of action for the entire County. The General Plan guides the regional plans or Community Development Plans, as well as the County’s functional plans and Area Improvement Plans.

The proposed project for construction of the Covered Play Court is consistent with the policies and goals of the County of Hawai‘i General Plan, particularly the following:

2.1. Economic

2.3 Policies

(f) Support all levels of educational, employment and training opportunities and institutions.
3.1. Energy

3.3 Policies

(n) Encourage energy-saving design in the construction of buildings.

7.1. Natural Beauty

7.2 Goals

(b) Protect scenic vistas and view plants from becoming obstructed.

7.5.5. Table 7-9, Natural Beauty Sites, District of North Kohala

- Coastline view plane from Akoni-Pule Highway
- Coastline view plane from Kohala Mountain Road

8.1. Natural Resources and Shoreline

8.2 Goals

(b) Provide opportunities for recreational, economic, and educational needs without despoiling or endangering natural resources.

(f) Ensure that alterations to existing land forms, vegetation, and construction of structures cause minimum adverse effect to water resources, and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation, or failure in the event of an earthquake.

10.1. Public Facilities

10.2 Education

10.2.2 Policies

(d) Encourage implementation of the Department of Education’s Educational Specifications and Standards for Facilities.
10.2.4.4.2 Courses of Action (North Kohala)

(a) Encourage the expansion of the public school and library facilities as needs arise.

(c) Encourage continual improvements to existing educational facilities.

12.1. Recreation

8.2 Goals

(a) Provide a wide variety of recreational opportunities for the residents and visitors of the County.

(b) Maintain the natural beauty of recreation areas.

(c) Provide a diversity of environments for active and passive pursuits.

12.3 Policies

(g) Facilities for compatible multiple uses shall be provided.

The proposed project complies with the policies and goals of the General Plan through the improvement of a public school facility and also providing increased recreational opportunities for the students of Kohala Middle School. The proposed new covered play court will not compromise the area’s natural beauty, will not obstruct important views, endanger natural resources or pose environmental hazards.

North Kohala Community Development Plan

The County of Hawai’i’s Community Development Plan (CDPs) further refines the General Plan policies by courses of action. The proposed project is consistent with the following North Kohala CDP priority issues and goals, and action program:
3.1. Priority Issues & Goals

**Infrastructure and Community Facilities** - to update Kohala’s infrastructure systems that are aging or in disrepair, and provide infrastructure, community facilities, and services that adequately serve the community on an on-going basis, and especially in times of emergency.

4.4. Infrastructure & Public Facilities

GOAL - revamp, repair, and/or replace aging or damaged infrastructure; improve emergency preparedness; prioritize and implement future improvement to public facilities and service; and develop and implement rural infrastructure standards.

4.12c: Support Enhancement of Educational Facilities and Programs for the District

**Background**

Supporting improvements to educational faculties and programs continues to stand as a top priority of the community. With the exception of Private, Charter and on-line facilities, education in Kohala has been the charge of the State of Hawai’i’s Department of Education. Nonetheless, the CDP recognizes the need for Hawai’i County to joining in supporting enhancement of educational opportunities for all Kohala’s students regardless of age. To that end, the CDP recommends that, at a minimum, any land use applications for expansion or creation of educational facilities in the North Kohala District be considered favorable as long as the proposal will not adversely impact nearby land owners or significantly diminish Kohala’s great natural beauty. For the same reasons and with the same conditions, enhancement of Educational
Outreach Programs for the community should also be supported by Hawai‘i County whenever feasible.

The proposed project is consistent with the above as it will replace and modernize aged facilities and equipment, as well as improve the overall quality of the school. The proposed project will not adversely impact nearby land owners or significantly diminish the natural beauty of North Kohala.

The proposed use of the covered play court will provide additional physical education and recreational opportunities for the school, improving the facility and programs provided by the school.

5. ALTERNATIVES TO THE PROPOSED ACTION

5.1 No Action

Under the No-Action alternative, there would be no change to the Kohala Middle School campus. The students and teachers will continue to use the limited indoor areas during rainy weather. Resources committed to planning and design of the facility will be foregone and the purpose of the project not achieved.

5.2 Alternative Site

An alternative location was considered was near the eastern edge of the property behind the portables along to the tree line. This location was dropped primarily to minimize ground disturbance and keeping the area of work more central to the campus. Requirements for the installation of a fire line would increase the ground disturbance,
as the alternative location would require the fire lane and utilities to cross through the entire property.

The current location preserves sightlines, located near the existing basketball courts and structures. With the proposed covered play court, the students can be comfortably accommodated in a protected structure.

6. PERMITS AND APPROVALS

Several approvals and permits will be or may be required from various agencies within the County of Hawai‘i, the State of Hawai‘i, and/or federal government to implement the proposed project. A summary listing is as follows:

**State of Hawai‘i**

Department of Health

- National Pollutant Discharge Elimination System (NPDES) Storm Water Permit
- Individual Wastewater System Permit
- Noise Permit
- Disability and Communication Access Board (DCAB) Approval

**County of Hawai‘i**

Planning Department

- Plan Approval
- Construction and Building Permits
- Grading, Grubbing and Stockpiling Permits
Utility Connection Permits
Sewer Connection Application
Industrial Wastewater Discharge Permit
Department of Water Supply
    Construction/ Connection Permit

Consultation with the County of Hawai‘i Planning Department is on-going and this list may change.

7. CONSULTED PARTIES

State of Hawai‘i
    Department of Land and Natural Resources
        State Historic Preservation Division (SHPD)

County of Hawai‘i
    Planning Department
    Department of Public Works
    Department of Water Supply
    Hawai‘i Fire Department
    Engineering Department

Other
    Hawai‘i Electric Light Company
8. DETERMINATION, FINDINGS AND REASONS FOR SUPPORTING DETERMINATION

8.1 Significance Criteria

According to the Department of Health Hawai‘i Administrative Rules §11-200-12, thirteen “Significance Criteria” shall be considered for determining if an action will have a significant impact on the environment. This includes all phases of a project, its expected consequences both primary and secondary, its cumulative impact with other projects, and its short and long term effects. According to the Rules, an action shall be determined to have a significant impact on the environment if it meets any one of the criteria listed below.

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

The project will not result in an irrevocable commitment to loss or destruction of any natural or cultural resource. The proposed project would be constructed within the school campus, which has been leveled and graded for campus development. Due to the area’s history, there is a possibility of encountering sub-surface archaeological resources during the construction of the project. Should that occur, all work will be stopped and following action will be in consultation and accordance with the State Historic Preservation Division.

2. Curtails the range of beneficial uses of the environment.

The project will not curtain the range of beneficial uses of the environment. Opened as Halaula School over 80 years ago, the campus will remain as school use. The underlying Urban land use classification and RS-15 Residential zoning commits the subject property
to residential development and use, which include community facilities that service the residences, such as a public school.

3. **Conflicts with the State’s long-term environmental policies or goals as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.**

The proposed project is consistent with the environmental policies established in Chapter 344, Hawai‘i Revised Statutes. The proposed project will not alter the area’s existing natural processes or resources and will not lower the quality of life for Hawai‘i residents. The new covered play ground will provide a facility to support the educational needs of students at Kohala Middle School. Construction will produce some short-term impacts to air quality and voice, but these impacts are minor and will be mitigated in accordance with Department of Health regulations.

4. **Substantially affects the economic or social welfare of the community or State.**

The project will not significantly affect the socio-economic welfare of the community or state. The new covered play court will contribute to the improvement of the campus facilities, and used to meet the educational needs of the students. The proposed structure will not have an adverse effect to the economic or social welfare of the community.

5. **Substantially affects public health.**

The proposed project will not have an adverse effect on public health. The proposed project will create more opportunities for physical education and activities, which in turn will help improve physical and mental health of the students. Construction of the new covered play court and the associated utilities, driveways and walkways will produce some short-term impacts to air quality and noise, but these impacts are minor
and will be mitigated in accordance with Department of Health regulations. Other mitigation measures, described in the assessment, such as BMPs for erosion control, will be submitted with construction plans and documents. The new covered play court will help provide quality facilities for physical exercise in public schools which is important to community and public health.

6. **Involves substantial secondary impacts, such as population changes or effects on public facilities.**

The proposed project is part of a public facility and will have positive secondary impacts to the existing Kohala Middle School campus. The proposed use of the covered play court will provide additional physical education and recreational opportunities for the school, despite poor weather conditions. The proposed project is not expected to increase student enrollment. Substantial secondary impact on resident population is not expected since the surrounding communities are limited in density and the area is fairly remote. Demand on other public facilities, including utilities, will not increase significantly due to the proposed covered play court.

7. **Involves a substantial degradation of environmental quality.**

The proposed project will not degrade overall environmental quality. Minor impacts to air quality as the result of construction will be short-term. The proposed project will fit into the existing campus and will not substantially change or disturb the existing natural processes occurring in the area.
8. Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment for larger actions.

The proposed project is individually limed, will have an insignificant effect on the environment, and does not involve a commitment of larger actions. The proposed covered play court is for the Kohala Middle School campus only.

9. Substantially affect a rare, threatened or endangered species or its habitat.

There are no rare, threatened, or endangered plants or animal species on the Kohala Middle School campus. The project area and vicinity have been cleared and the vegetation has been altered.

10. Detrimentally affects air or water quality or ambient noise levels.

Construction will produce temporary impacts to air quality, water quality, and noise levels. These impacts are short-term and will be mitigated using BMPs in compliance with the County of Hawai‘i and the State of Hawai‘i rules and regulations regarding construction and related activities. Long-term impacts to air and water quality, and ambient noise levels will be negligible.

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

The project area or campus are not in an environmentally sensitive area. The campus is not along the coastline or within a Special Management Area. It is outside of flood prone and tsunami inundation areas.
12. **Substantially affects scenic vistas and view planes identified in county or state plans or studies.**

The proposed project is located on campus and will not significantly alter the views of the coastline from Akoni Pule Highway. The proposed covered play court is a single-story structure will be located behind other single-story structures of the school. Views of the Kohala Mountains from Akoni Pule Highway will not be affected since the campus is located makai of the highway.

13. **Requires substantial energy consumption.**

The proposed project will not require substantial energy consumption, primarily using natural lighting and ventilation.

8.2 **Findings**

Based on the foregoing information presented, it is anticipated that the proposed covered play court will not have a significant effect. As such, a Finding of No Significant Impact is appropriate for the proposed project.

8.3 **Reasons Supporting Determination**

The nature and scale of the proposed project within the existing school campus is such that no significant environmental effects are anticipated. Potential impacts, if any, can be mitigated through design and careful construction management practices and compliance with all governmental requirements including those of the Department of Public Works, State Department of Health and State Historic Preservation Division.
REFERENCES


Memories of Hawai‘i – Big Island. 2011. Island of Hawai‘i the Big Island in 1880. Hilo: Memories of Hawai‘i – Big Island.


Appendix A

Final
Addendum Archaeological Monitoring Plan for the Hawai‘i DOE Cesspool Conversion Project, Honoka‘a School District, Kohala Middle School, Pueke & Kukuiwaluhia Ahupua‘a, North Kohala District, Hawai‘i Island
TMK: [3] 5-3-010:056 por.

Prepared for
CH2M Hill

Prepared by
Jon Tulchin, B.A.
and
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawai‘i, Inc.
Kailua, Hawai‘i
(Job Code: DOEC 2 H26)

January 2009
# Management Summary

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>January 2009</td>
</tr>
<tr>
<td>Project Number (s)</td>
<td>Cultural Surveys Hawai‘i Inc. (CSH) Project Number: DOEC 2 H26</td>
</tr>
<tr>
<td>Investigation Permit Number</td>
<td>The monitoring component of the archaeological monitoring program will be carried out under archaeological permit number 08-14 (or subsequent 2009 permit when issued) to Cultural Surveys Hawai‘i, Inc. (CSH) by the Hawai‘i State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR), per Hawai‘i Administrative Rules (HAR) Chapter 13-282.</td>
</tr>
<tr>
<td>Project Location</td>
<td>The project area is located at 54-4155 Akoni Pule Highway and comprises TMK: [3] 5-3-010:056 por., which is bounded by Akoni Pule Highway to the south and by Maulili Loop to the north and west. This area is depicted on the 1995 Hawi USGS 7.5-minute topographic quadrangle.</td>
</tr>
<tr>
<td>Land Jurisdiction</td>
<td>Public, State of Hawai‘i</td>
</tr>
<tr>
<td>Agencies</td>
<td>State of Hawai‘i Department of Land and Natural Resources / State Historic Preservation Division (DLNR / SHPD)</td>
</tr>
<tr>
<td>Project Description</td>
<td>The proposed wastewater system improvements will include the installation of new sewer lines and a septic tank. Project related ground disturbance will involve excavations at existing cesspool locations and at locations proposed for the installation of new sewer lines and a septic tank.</td>
</tr>
<tr>
<td>Project Acreage</td>
<td>8.6 acres</td>
</tr>
<tr>
<td>Historic Preservation Regulatory Context</td>
<td>This archaeological monitoring program is to be implemented to facilitate the identification and treatment of any burials that might be discovered during subsurface disturbance and to mitigate the project’s effect on any non-burial archaeological deposits that might be uncovered during project construction. At the request of CH2MHill, CSH has prepared this addendum archaeological monitoring plan. In consultation with SHPD, this monitoring plan is designed to fulfill the state requirements for monitoring plans [HAR Chapter 13-279-4]. This document was prepared to support the proposed project’s historic preservation review under Hawai‘i Revised Statutes (HRS) Chapter 6E-8 and HAR Chapter 13-275.</td>
</tr>
<tr>
<td>Historic Properties Potentially Affected</td>
<td>No historic properties have been identified within the project area.</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-------------------------------------------------------------------</td>
</tr>
<tr>
<td>Recommended Monitoring</td>
<td>On-site archaeological monitoring is recommended for all initial ground-disturbance to facilitate the identification and treatment of any burials that might be discovered during project construction, and to mitigate the project’s effect on non-burial archaeological deposits. Any departure from this will only follow consultation with and written concurrence from, DLNR/SHPD.</td>
</tr>
</tbody>
</table>
# Table of Contents

**Management Summary** ........................................................................................................... i

**Section 1 Introduction** ............................................................................................................. 1
  1.1 Project Background ....................................................................................................................... 1
  1.2 Environmental Setting ................................................................................................................... 5
    1.2.1 Natural Environment ............................................................................................................... 5
    1.2.2 Built Environment .................................................................................................................. 5

**Section 2 Background Research** ............................................................................................. 8
  2.1 Historic Background ...................................................................................................................... 8
    2.1.1 Kohala Middle School ............................................................................................................ 8
    2.1.2 Land Commission Awards in the Immediate Area ............................................................... 10
  2.2 Previous Archaeological Studies in the Vicinity ......................................................................... 10
  2.3 Predictive Model .......................................................................................................................... 14

**Section 3 Archaeological Monitoring Provisions** ................................................................ 18

**Section 4 References Cited** .................................................................................................... 21

**Appendix A SHPD Acceptance of Monitoring Plan** ............................................................. 1

**Appendix B Construction Plans** .............................................................................................. 1

**Appendix C LCA Documentation** .......................................................................................... 1
List of Figures

Figure 1. U.S. Geological Survey 7.5-Minute Series Topographic Map, Hawi Quadrangle (1995), showing the location of the project area ................................................................. 2
Figure 2. Tax Map Key [3] 5-3-010, showing the location of the project area .................... 3
Figure 3. Aerial photograph showing the location of the project area (source: Google Earth 2008) 4
Figure 4. Overlay of Soil Survey of the State of Hawai‘i (Foote et al. 1972), indicating sediment types within the project area ................................................................................. 6
Figure 5. Photograph of Kohala Middle School soccer field, view to northeast .................. 7
Figure 6. Photograph of Kohala Middle School administration building, view to north ........ 7
Figure 7. 1911 map of Kohala Sugar Company cane lands showing the project area within lands used for sugarcane cultivation (source: Condé & Best 1973) ......................... 9
Figure 8. Portion of Land Court Application Map 1116, showing LCAS in the vicinity of the project area .............................................................................................................. 11
Figure 9. USGS 7.5-Minute Series Topographic Map, Hawi quadrangle (1995), showing archaeological studies in the vicinity of the project area ........................................... 13
Figure 10. Diagram of earthen crypts utilized at unmarked cemetery sites within the Kohala Plantation Village study area (source: Erkelens & Athens 1994) ....................... 15
Figure 11. USGS 7.5-Minute Series Topographic Map, Hawi quadrangle (1995), showing historic properties in the vicinity of the project area .................................................... 16
Figure 12. USGS 7.5-Minute Series Topographic Map, Hawi quadrangle (1995), showing cemeteries within 1.5 miles of the project area .............................................................. 17
List of Tables

Table 1. Land Commission Awards Located in the vicinity of the Project Area ..................12
Section 1  Introduction

1.1 Project Background

The State of Hawai‘i Department of Education (DOE) has entered into an agreement with the Environmental Protection Agency to carry out improvements to existing wastewater systems at Hawai‘i’s public schools. The firm CH2MHill has been chosen to design and implement wastewater system improvements at public schools located on five of the Hawaiian Islands. In 2007, Cultural Surveys Hawai‘i, Inc. (CSH) prepared an archaeological monitoring plan for eight schools in the Honoka’a School District designated for wastewater system improvements (O’Hare et al. 2007). The monitoring plan was reviewed and approved by the State Historic Preservation Division of the Department of Land and Natural Resources (SHPD/DLNR) on January 24, 2008 (LOG NO: 2007.2637; DOC NO: 0801TD05; see Appendix A). This document serves as an addendum to the original monitoring plan as it incorporates a new location, Kohala Middle School, into the monitoring program for wastewater system improvements at Honoka’a School District public schools.

At the request of the project proponent, CH2MHill, CSH has prepared this addendum archaeological monitoring plan for the Hawai‘i DOE Cesspool Conversion Project, Honoka’a School District, Kohala Middle School, Pueke and Kukuiwaluhia Ahupua’a, North Kohala District, Hawai‘i Island. The project area is within land publicly owned by the State of Hawai‘i and comprises TMK: [3] 5-3-010:056 por., which is bounded by Akoni Pule Highway to the south and by Maulili Loop to the north and west. This area is depicted on the 1995 Hawi USGS 7.5-minute topographic quadrangle, a Tax Map Key (TMK), and an aerial photograph (Figure 1, Figure 2, & Figure 3).

The proposed wastewater system improvements will include the installation of new sewer lines and a septic tank (see Appendix B). Project related ground disturbance will involve excavations at existing cesspool locations and at locations proposed for the installation of new sewer lines and a septic tank.

This archaeological monitoring program is to be implemented to facilitate the identification and treatment of any burials that might be discovered during subsurface disturbance and to alleviate the project’s effect on any non-burial archaeological deposits that might be uncovered during project construction. At the request of CH2MHill, CSH has prepared this archaeological monitoring plan. In consultation with SHPD, this monitoring plan is designed to fulfill the state requirements for monitoring plans [HAR Chapter 13-279-4]. This document was prepared to support the proposed project’s historic preservation review under Hawai‘i Revised Statutes (HRS) Chapter 6E-8 and HAR Chapter 13-275.
Figure 1. U.S. Geological Survey 7.5-Minute Series Topographic Map, Hawi Quadrangle (1995), showing the location of the project area.
Figure 2. Tax Map Key [3] 5-3-010, showing the location of the project area
Figure 3. Aerial photograph showing the location of the project area (source: Google Earth 2008)
1.2 Environmental Setting

1.2.1 Natural Environment

The project area is located approximately 1 mile (1.6 km) south of Keawaeli Bay and is situated in between two perennial stream gulches, Waiania and Halelua. Lands within the project area are level with an elevation of 320 ft (97 m) A.M.S.L. (Average Mean Sea Level).

According to U.S. Department of Agricultural (USDA) soil survey data (Foote et al. 1972) the sediments within the project area consist entirely of Kohala Silty Clay (KhA) (Figure 4). Soils of the Kohala Series are described as “well-drained silty clays that formed in material from basic igneous rock influenced by volcanic ash...used mostly for sugarcane” (Foote et al. 1972).

The project area receives an average of 59 in. (1500 mm) of annual rainfall (Giambelluca et al. 1986). The entire project area has been extensively disturbed and transformed by human activity leaving no naturally occurring vegetation within the subject parcel.

1.2.2 Built Environment

The entire project area has been leveled and graded due to the development of the existing Kohala Middle School. A large grassy field makes up approximately two-thirds of the project area (Figure 5), with classrooms and administrative buildings located within the western and southern borders of the project area accounting for the other third (Figure 6).
Figure 4. Overlay of Soil Survey of the State of Hawai‘i (Foote et al. 1972), indicating sediment types within the project area
Figure 5. Photograph of Kohala Middle School soccer field, view to northeast

Figure 6. Photograph of Kohala Middle School administration building, view to north
Section 2  Background Research

2.1 Historic Background

North Kohala District was long associated with sovereignty over the entire island of Hawai‘i. In the early 1300s, political control of most of North Kohala was located at Niuli‘i, some seven kilometers east of Honomaka‘u. Around 1781, Hawai‘i’s ruling chief Kalani‘ōpu‘u moved his court to Kohala, where his headquarters were fixed at Kapa‘au. Kamehameha the Great is traditionally said to have been born at Kokoiki in North Kohala approximately seven kilometers to the west of Honomaka‘u (Schweitzer and Gomes (2003:20-21).

Prior to 1873, the only sugar plantation in North Kohala was the Kohala Sugar Plantation Company at Hala‘ula (founded in 1863). Between 1873 and 1883, no less than nine plantations were begun. Much of North Kohala was transformed into a sea of cane in that decade. A 1911 map of Kohala Sugar Company cane lands indicates that the entire project area was utilized for sugarcane cultivation (Figure 7).

2.1.1 Kohala Middle School

The Kohala Middle School is located approximately 1.6 kilometers mauka (inland) of the coast in the district of North Kohala. The school buildings are on the makai (seaward) side of Akoni Pule Highway, which parallels the coastline (see Figure 1, Figure 2, & Figure 3).

The web site for Kohala Elementary School provided the history of Kohala Middle School’s origin:

Kohala Elementary’s roots start back 158 years ago. In the 1800’s, there were many one and two room schools in Kohala, which served small geographical areas. These schools usually took the name of the area it served. Honomakau School was such a school started sometime after 1837. Through the ensuing years, sugar cane became the chief economic crop resulting in a more diverse population as immigrant plantation workers settled in Kohala. As the population grew, the small one and two room schools began consolidating. Thus, Honomakau School expanded adding classrooms to accommodate the increasing student enrollment. In 1926, Honomakau School was renamed Kohala High and Grammar School. In 1940, Kohala High and Grammar was renamed Kohala High and Elementary. This situation remained stable until 1995 when the school was split into two separate schools . . . . Kohala Elementary (grades K-5) and Kohala High and Intermediate (grades 6-12). Finally, in 2001, Kohala High and Intermediate separated into Kohala High School (grades 9-12) and Kohala Middle School (grades 6-8) [http://www.kohalael.k12.hi.us/home.nsf/dd5cab6801f1723585256474005327c8/cd971ae79f3746360a256a8500820442?OpenDocument].
Figure 7. 1911 map of Kohala Sugar Company cane lands showing the project area within lands used for sugarcane cultivation (source: Condé & Best 1973)
2.1.2 Land Commission Awards in the Immediate Area

The Organic Acts of 1845 and 1846 initiated the process of the Māhele, the division of Hawaiian lands, which introduced private property into Hawaiian society. In 1848, the crown and the ali`i received their land titles. The common people (makaʻaiina) received their kuleana awards (individual land parcels) in 1850. It is through records for Land Commission Awards (LCAs) generated during the Māhele that the first specific documentation of life in Hawai‘i, as it had evolved up to the mid-nineteenth century come to light. Although many Hawaiians did not submit or follow through on claims for their lands, the distribution of LCAs can provide insight into patterns of residence and agriculture. Many of these patterns of residence and agriculture probably had existed for centuries past. By examining the patterns of kuleana (commoner) LCA parcels in the vicinity of the project area, insight can be gained to the likely intensity and nature of Hawaiian activity in the area.

A review of Land Court Application Map 1116 indicates two LCAs (8734 & 10620) in the general vicinity of the project area (Figure 8). Documentation from the LCAs was reviewed in an attempt to reconstruct indigenous Hawaiian land use patterns in the vicinity of the project area during the mid nineteenth century (Table 1; see Appendix C). LCA documentation indicates that the project area was utilized for indigenous Hawaiian habitation and agriculture. The presence of house lots and kīhāpai (cultivated patch, garden, orchard, field, small farm) are indicated, suggesting indigenous Hawaiian land use in the vicinity the project area.

2.2 Previous Archaeological Studies in the Vicinity

In 1994, International Archaeological Research Institute, Inc. (IARII) conducted an archaeological inventory survey of the Kohala Plantation Village, consisting of a 720-acre study area located makai (seaward) of Akoni Pule Highway and bounded by Hana`ula Gulch on the west and Hālawa Gulch to the east (Erkelens & Athens 1994; Figure 9). 17 historic properties were identified. All but one of the identified historic properties were determined to be of post-contact origin, consisting of railroad constructions, road embankments, clearing mounds, wire stations (utilized to transport cane and other various material), flumes and ditches, a taro pond field, and both marked and unmarked cemeteries. The single pre-contact historic property consisted of an amorphous rock alignment with an associated subsurface cultural layer containing evidence of indigenous Hawaiian occupation in the form of midden, charcoal, and volcanic glass flakes. All of the documented historic properties were observed in gulches with the exception of the cemetery sites.

Of note are the numerous cemeteries documented within the Kohala Plantation Village study area. Two of the documented cemeteries were marked with tombstones, while four of the documented cemeteries were unmarked, though it was noted that a shrub called copper leaf (Acalypha wilkesiana and A. marginata) was present at all of the unmarked cemetery sites and appeared to demarcate the extent of burial distribution within each site. Of further interest was the type of interment employed at the unmarked cemeteries. Many of the burials were interred within a crypt that was excavated into the ground. The crypts resembled a boot with a vertical
Figure 8. Portion of Land Court Application Map 1116, showing LCAS in the vicinity of the project area
Table 1. Land Commission Awards Located in the vicinity of the Project Area

<table>
<thead>
<tr>
<th>Land Claim #</th>
<th>Claimant</th>
<th>‘Ili</th>
<th>Land Use</th>
<th>Landscape Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>8734</td>
<td>Kailihau</td>
<td>Pahoa</td>
<td>House lot, 2 kīhāpai (cultivated patch, garden, orchard, field, small farm)</td>
<td>Bounded on all sided by “waste land”.</td>
</tr>
<tr>
<td>10620</td>
<td>Puaiowaha</td>
<td>Kekiki, Waiau, Koaloa</td>
<td>House lot, 5 kīhāpai (cultivated patch, garden, orchard, field, small farm)</td>
<td>Bounded by land of other Hawaiians.</td>
</tr>
</tbody>
</table>
Figure 9. USGS 7.5-Minute Series Topographic Map, Hawi quadrangle (1995), showing archaeological studies in the vicinity of the project area.
excavation utilized as an access pit and a horizontal excavation used for the placement of the burial, which was sealed off with basalt boulders (Figure 10).

The IARII study noted that the mechanized land modifications associated with sugarcane cultivation observed within the study area has virtually erased the pre-contact archaeological record through extensive earth moving and erosion. It is believed that if there are any additional pre-contact historic properties within the study area, they are few in number and buried.

A review of IARII’s site location map indicates three historic properties in the vicinity of the current project area: SIHP -17825, an unmarked cemetery; SIHP -17826, a marked cemetery; and SIHP -17827, irrigation flume network remnants (Figure 11).

### 2.3 Predictive Model

Based on background research, historic properties (i.e. archaeological sites) in the form of pre- and post-contact subsurface cultural deposits may be encountered during archaeological monitoring of ground disturbance within the project area. Historic research has indicated two LCAs in the vicinity of the project area, suggesting indigenous Hawaiian land use in the form of habitation and agriculture. Previous archaeological research has documented evidence of both pre- and post contact land use in the area. Of note are the numerous post-contact cemetery sites identified *makai* of the current project area (Erkelens & Athens 1994). A review of IARII’s site maps (Erkelens & Athens 1994) as well as modern topographic maps indicates 9 cemeteries within 1.5 miles of the current project area (Figure 12).

Evidence of indigenous Hawaiian land use could include subsurface cultural deposits containing midden, artifacts, and/or human burials. Evidence of post-contact land use could include subsurface cultural deposits in the form of trash pits, privies, building foundations, and/or human burials.

It should be noted that the due to the documented sugarcane cultivation within the project area, mechanized land modifications associated with sugarcane cultivation have likely disturbed and/or destroyed any subsurface historic properties that may have been present. Thus the probability of encountering subsurface historic properties during ground disturbance within the project area is low.
Figure 10. Diagram of earthen crypts utilized at unmarked cemetery sites within the Kohala Plantation Village study area (source: Erkelens & Athens 1994)
Figure 11. USGS 7.5-Minute Series Topographic Map, Hawi quadrangle (1995), showing historic properties in the vicinity of the project area.
Figure 12. USGS 7.5-Minute Series Topographic Map, Hawi quadrangle (1995), showing cemeteries within 1.5 miles of the project area
Section 3  Archaeological Monitoring Provisions

In consultation with SHPD, it was determined that an archeological monitoring program was warranted as a historic preservation mitigation measure for the proposed project.

On-site archaeological monitoring is recommended for all ground disturbances to facilitate the identification and treatment of any burials that might be discovered during project construction, and to alleviate the project’s effect on non-burial archaeological deposits. Any departure from this will only follow consultation with and written concurrence from, DLNR/SHPD.

Under Hawai‘i State historic preservation legislation, “Archaeological monitoring may be an identification, mitigation, or post-mitigation contingency measure. Monitoring shall entail the archaeological observation of, and possible intervention with, on-going activities which may adversely affect historic properties” (HAR Chapter 13-279-3). For this project, the proposed monitoring program will serve as a mitigation measure that insures proper documentation should historic properties be encountered during development work.

Hawai‘i State historic preservation legislation governing archaeological monitoring programs requires that each monitoring plan discuss eight specific items (HAR Chapter 13-279-4). The monitoring provisions below address those eight requirements in terms of the archaeological monitoring for the construction within the project area.

1. **Anticipated Historic Properties:**

   Based on background research, historic properties (i.e. archaeological sites) in the form of pre- and post-contact subsurface cultural deposits may be encountered during archaeological monitoring of ground disturbance within the project area.

   Evidence of indigenous Hawaiian land use could include subsurface cultural deposits containing midden, artifacts, and/or human burials. Evidence of post-contact land use could include subsurface cultural deposits in the form of trash pits, privies, building foundations, and/or human burials.

2. **Locations of Historic Properties:**

   Historic properties may be encountered anywhere within the project area.

3. **Fieldwork:**

   On-site archaeological monitoring is recommended for all ground disturbance activities. Any departure from this will only follow consultation with and written concurrence from, SHPD/DLNR.

   The monitoring fieldwork may encompass the documentation of subsurface archaeological deposits (e.g, trash pits and structural remnants) and will employ current standard archaeological recording techniques. This will include drawing and recording the stratigraphy of excavation profiles where cultural features or artifacts are exposed as well as representative profiles. These exposures will be photographed, located on project area maps, and sampled. Photographs and representative profiles of
excavations will be taken even if no historically-significant sites are documented. As appropriate, sampling will include the collection of representative artifacts, bulk sediment samples, and/or the on-site screening of measured volumes of feature fill to determine feature contents.

If human remains are identified, no further work will take place, including no screening of back dirt, no cleaning and/or excavation of the burial area, and no exploratory work of any kind unless specifically requested by the SHPD. All human skeletal remains that are encountered during construction will be handled in compliance with HRS Chapter 6E-7 and 6E-8 and HAR Chapter 13-300 and in consultation with SHPD/DLNR.

4. Archaeologist's Role:

The on-site archaeologist will have the authority to stop work immediately in the area of any findings so that documentation can proceed and appropriate treatment can be determined. In addition, the archaeologist will have the authority to slow and/or suspend construction activities in order to insure that the necessary archaeological sampling and recording can take place.

5. Coordination Meeting:

Before work commences on the project, the on-site archaeologist shall hold a coordination meeting to orient the construction crew to the requirements of the archaeological monitoring program. At this meeting the monitor will emphasize his or her authority to temporarily halt construction and that all historic finds, including objects such as bottles, are the property of the landowner and may not be removed from the construction site. At this time it will be made clear that the archaeologist must be on site during subsurface excavations, if warranted.

6. Laboratory work:

Laboratory analysis of non-burial related finds will include standard artifact and midden recording, as follows: Artifacts will be documented as to provenience, weight, length, width, type of material, and presumed function. Bone and shell midden materials will be sorted down to species, when possible, then tabulated by provenience, and presented in table form.

7. Report Preparation:

One of the primary objectives of the report will be to present a stratigraphic overview of the project area which will allow for predictive assessments of adjacent properties, which may be the subject of future development. The report will contain a section on stratigraphy, description of archaeological findings, monitoring methods, and results of laboratory analyses. The report will address the requirements of a monitoring report (HAR section 13-279-5). Photographs of excavations will be included in the monitoring report even if no historically-significant sites are documented. Should burial treatment be completed as part of the monitoring effort, a summary of this treatment will be included in the monitoring report. Should burials and/or human
remains be identified, then other letters, memos, and/or reports may be requested by the Burial Sites Program.

8. Archiving Materials:

   All burial materials will be addressed as directed by the SHPD/DLNR. Materials not associated with burials will be temporarily stored at the contracted archaeologist’s facilities until an appropriate curation facility is selected, in consultation with the landowner and SHPD.
Section 4  References Cited

Condé, Jesse C. and Gerald M. Best  

Erkelens, Conrad, and J. Stephen Athens  
1994  Archaeological Inventory Survey, Kohala Plantation Village, North Kohala, Hawai‘i. International Archaeological Research Institute, Inc., Honolulu, HI.

Foote, Donald E., E.L. Hill, S. Nakamura, and F. Stephens  

Giambelluca, Thomas W., Michael A. Nullet, and Thomas A. Schroeder  

O’Hare, Constance R., Hallett H. Hammatt, and David W. Shideler  
2007  Archaeological Monitoring Plan for Eight DOE Schools, Honoka’a School District, Island of Hawai‘i, Hawai‘i Inter-Island DOE Cesspool Project. Cultural Surveys Hawai‘i, Inc., Kailua, HI.

Schweitzer, Sophia with Michael Gomes  
Appendix A  SHPD Acceptance of Monitoring Plan

January 24, 2008

Dr. Hallett H. Hammatt
Cultural Surveys Hawai‘i, Inc.
P.O. Box 1114
Kailua, Hawaii 96734

Dear Dr. Hammatt:

Subject: Chapter 6E-8 Historic Preservation Review of an Archaeological Monitoring Plan for Eight DOE Schools, Hawai‘i Inter-Island Cesspool Project, Honoka‘a School District, Island of Hawai‘i

TMKs: (3) 5-4-007:08 & 14; 5-4-08:21; 5-5-08:24; 6-7-02:15; 4-5-03:20; 4-5-05:01 & 02; 4-5-10:76; 4-5-12:21 & 25; 4-3-03: 25 & 02; 3-5-04:26 & 59; and 3-4-05:01

Thank you for re-submitting the subject plan for archaeological monitoring, to be conducted at eight schools in the Honoka‘a School District (Constance R. O’Hara, Hallett H. Hammatt and David W. Shideler, February 2007). We apologize for the delay in responding to this re-submittal, which was received at the Kapolei office August 1, 2007.

The plan documents the setting and background information for DOE schools to be affected by the installation of new sewer lines and/or septic tanks. These include 1) Kohala Elementary, 2) Kohala Intermediate, 3) Kohala High, 4) Waimea Elementary and Middle, 5) Honoka‘a Elementary, 6) Honoka‘a Intermediate and High, 7) Waiaula Elementary and Intermediate, and 8) Luapahoehoe High and Elementary. All of the school sites are over 50 years in age, and three of the schools are listed in the Hawai‘i Register of Historic Places (HRHP Site 50-10-08-7522). The HRHP sites include the two schools in Honoka‘a and the Luapahoehoe School.

The plan contains the appropriate background information, maps and procedural stipulations as specified in Hawaii Administrative Rule §13-270-4 regarding monitoring plans. We accept the plan; however, we request that future submittals include the relevant TMK information on the cover, or on the title page.

Please direct any questions or comments regarding this review to Theresa K. Donham, Hawai‘i Island lead archaeologist (808-281-4620).

Aloha,

Nancy A. McMahon
Acting Archaeology Branch Chief
Addendum Archaeological Monitoring Plan for the Hawai‘i DOE Cesspool Conversion Project

TMK: [3] 5-3-010:056 por.
## Appendix C  LCA Documentation

### Mahele Database Documents

<table>
<thead>
<tr>
<th>Number: 08734</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claim Number: 08734</td>
</tr>
<tr>
<td>Claimant: Kalilihau</td>
</tr>
<tr>
<td>Other claimant: Kenao, makuaalmea</td>
</tr>
<tr>
<td>Other name: Kaliliho</td>
</tr>
<tr>
<td>Island: Hawaii</td>
</tr>
<tr>
<td>District: Kohala, North</td>
</tr>
<tr>
<td>Ahupuaa: Apuakohau</td>
</tr>
<tr>
<td>Il: Pahoa</td>
</tr>
<tr>
<td>Apana: 1</td>
</tr>
<tr>
<td>Loli: FR</td>
</tr>
<tr>
<td>Plus: NR</td>
</tr>
<tr>
<td>Maka Taro: FT</td>
</tr>
<tr>
<td>Kula: NT</td>
</tr>
<tr>
<td>House lot: 1</td>
</tr>
<tr>
<td>Kihapali/Pakanu: 2</td>
</tr>
<tr>
<td>Number of Royal Patents: 1</td>
</tr>
<tr>
<td>Salt lands: Koeler/Poalima</td>
</tr>
<tr>
<td>Wauke: Loko</td>
</tr>
<tr>
<td>Oloa: Lokoia</td>
</tr>
<tr>
<td>Noni: Fishing Rights: No</td>
</tr>
<tr>
<td>Hala: Seal/Seal/Dunes: No</td>
</tr>
<tr>
<td>Sweet Potatoes: Aruwi/Path: No</td>
</tr>
<tr>
<td>Irish Potatoes: Other Edifice: No</td>
</tr>
<tr>
<td>Bananas: Spring/Well: No</td>
</tr>
<tr>
<td>Breadfruit: Pigpen: No</td>
</tr>
<tr>
<td>Coconut: Road/Path: No</td>
</tr>
<tr>
<td>Coffee: Burial/Graveyard: No</td>
</tr>
<tr>
<td>Oranges: Wall/Fence: No</td>
</tr>
<tr>
<td>Bitter Melon/Gourd: Stream/Muliwai/River: No</td>
</tr>
<tr>
<td>Sugar Cane: Pali: No</td>
</tr>
<tr>
<td>Tobacco: Disease: No</td>
</tr>
</tbody>
</table>

**Addendum Archaeological Monitoring Plan for the Hawai‘i DOE Cesspool Conversion Project**

TMK: [3] 5-3-010:056 por.
Cultural Surveys Hawai‘i Job Code: DOEC 2 H26

Appendix C: LCA Documentation

Addendum Archaeological Monitoring Plan for the Hawai‘i DOE Cesspool Conversion Project

TMK: [3] 5-3-010:056 por.

Koa/Kou Trees: Claimant Died: No
Other Plants: Other Trees:
Other Mammals: No Miscellaneous: 2 houses

No. 8734, Kailihau, January 31, 1848
N.R. 75v8

The Ahupuaa is Apukohau, and the ʻili is Pahoa. I have a garden in this ʻili which is 200 fathoms long by 80 fathoms wide. The interest was from Kuakini to Kailawa, from Kailawa to Haupu, and from him to Kekoa, who was my makuake. On his death I inherited it. I have been on that land 24 years.

KAILIHAU

F.T. 33v4
No. 8734, Kailihau

Kekua, sworn, testifies that claimant occupies one piece of land in the ʻili of Pahoa, Ahupuua Apukohau, which is thus bounded:
South, West, North & East by waste land.

Said piece of dry land, unfenced, cultivated. Two houses on the premises owned by husband, J. Wilson[?], an Englishman. Claimant’s title to the above lot of land in descent from her parents who received it in [time of] Kamemaraha ʻii.

Kekoa, sworn, affirms as above.

N.T. 79v4
No. 8734, Kailihau /female/, September 28, 1848

Kekua, sworn and stated, I have seen 1 section in the Pahoa ʻili of the Apukohau ahupuaa. The surrounding boundaries are for the konohiki. There are two gardens and 2 houses for him [her]. The land has been cultivated. It is an old place from his [her] parents who had acquired it during the time of Kamemaraha ʻii; no one had objected.

Kekoa, sworn and stated, I have known exactly as Kekuae has stated here.

[ Award 8734, R.P. 5938, Apukohau N. Kohala; 1 ap.; 14.52 Acs]

Number: 10620

Claim Number: 10620
Claimant: Pualowaha
Other claimant:
Other name: Kuaiowaha
Island: Hawai‘i
District: Kohala, North
Ahupuua: Apukohau, Niulii
ʻIli: Keiki, Waiau, Koaioa
Apana: 1 Awarded: 1
Loi: FR:
Plus: NR: 8v8
<table>
<thead>
<tr>
<th>Malia Taro:</th>
<th>FT:</th>
<th>32v4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kula:</td>
<td>NT:</td>
<td>78v4</td>
</tr>
<tr>
<td>House lot:</td>
<td>1</td>
<td>RP:</td>
</tr>
<tr>
<td>Kihapai/Pakanu:</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Salt lands:</td>
<td>Koeele/Poalima:</td>
<td>No</td>
</tr>
<tr>
<td>Wauke:</td>
<td>Loko:</td>
<td>No</td>
</tr>
<tr>
<td>Olona:</td>
<td>Lokola:</td>
<td>No</td>
</tr>
<tr>
<td>Noni:</td>
<td>Fishing Rights:</td>
<td>No</td>
</tr>
<tr>
<td>Hala:</td>
<td>Sea/Shore/Dunes:</td>
<td>No</td>
</tr>
<tr>
<td>Sweet Potatoes:</td>
<td>Auwai/Ditch:</td>
<td>No</td>
</tr>
<tr>
<td>Irish Potatoes:</td>
<td>Other Edifice:</td>
<td>No</td>
</tr>
<tr>
<td>Bananas:</td>
<td>Spring/Wall:</td>
<td>No</td>
</tr>
<tr>
<td>Breadfruit:</td>
<td>Pigpen:</td>
<td>No</td>
</tr>
<tr>
<td>Coconut:</td>
<td>Road/Path:</td>
<td>No</td>
</tr>
<tr>
<td>Coffee:</td>
<td>Burial/Graveyard:</td>
<td>No</td>
</tr>
<tr>
<td>Oranges:</td>
<td>Wall/Fence:</td>
<td>No</td>
</tr>
<tr>
<td>Bitter Melon/Gourd:</td>
<td>Stream/Muliwai/River:</td>
<td>No</td>
</tr>
<tr>
<td>Sugar Cane:</td>
<td>Pali:</td>
<td>No</td>
</tr>
<tr>
<td>Tobacco:</td>
<td>Disease:</td>
<td>No</td>
</tr>
<tr>
<td>Koa/Kou Trees:</td>
<td>Claimant Died:</td>
<td>No</td>
</tr>
<tr>
<td>Other Plants:</td>
<td>Other Trees:</td>
<td></td>
</tr>
<tr>
<td>Other Mammals:</td>
<td>No</td>
<td>Miscellaneous:</td>
</tr>
</tbody>
</table>

No. 10620, Puaiowaha, February 9, 1848
N.R. 8v8

Greetings to the Land Commissioners, I hereby state my claim at Kohala. Kekikiki is the name of the `i`i where my house is, in the Ahupua`a of Apaukahau, which is from the time of Kamehameha I through Kamehameha III. That is where my house and land claims are. The `i`is of Waiau and Kosolua, in Nu`ili, with claims for lots, are also from Kamehameha I through III.

PUAIOWAHA

F.T. 32v4
No. 10620, Puaiowaha

Kama`i, sworn, testifies that claimant occupies one piece of land in the `i`i of Kekikiki, Ahupuaa Apaukahau, thus bounded:

South by land held by witness
West by land held by Moopuu
North by land held by Pepe
East by `i`i of Ka`iihi.

Said section is dry land, unfenced & partly cultivated. No house on premises.

Keawekolole (konohiki) gave claimant the above mentioned premises in [time of] Kamehameha II. Uncontested.

Moopuu, sworn, confirms the above testimony.
N.T. 78-79:v4
No. 10620, Kuaiohaha [Puaiohaha], September 28, 1848

Kamai, sworn and stated, "I have seen in the ili land of Keiki, Apuakohau ahupuaa, in Kohala, Hawaii, 1 section where:

Mauka is my land
Kohalawa is Moopu's land
Makai is Pepe's land
Hanakua is Kahi ili land.

There are 5 dry gardens and a portion of this has been cultivated. There is no house and his interest is from Keawekeokehe. No one has objected."

Moopu, sworn and stated, "I have known exactly as Kamai has stated here."

[Award 10620; Apuakohau Kohala; 1 ap.; 12.63 Acs]
Appendix B

Drainage Runoff Calculation for Kohala Middle School Covered Playcourt DOE Job No. Q16200-17
DRAINAGE RUNOFF CALCULATION

For

Kohala Middle School
Covered Playcourt
DOE Job No. Q16200-17

Halaula, North Kohala
Island of Hawaii, Hawaii
Tax Map Key: 3rd Div. 5-3-10: 056
53-4155 Akoni Pule Highway
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TABLE OF CONTENT</td>
<td>1</td>
</tr>
<tr>
<td>SITE:</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>2</td>
</tr>
<tr>
<td>General</td>
<td>2</td>
</tr>
<tr>
<td>Topography</td>
<td>2</td>
</tr>
<tr>
<td>Flood Zone</td>
<td>2</td>
</tr>
<tr>
<td>On Site Pre-Development Runoff</td>
<td>3</td>
</tr>
<tr>
<td>On Site Post-Development Runoff</td>
<td>3</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>3</td>
</tr>
</tbody>
</table>

-o0o-

## ATTACHMENTS

<table>
<thead>
<tr>
<th>MAPS:</th>
<th>Sheets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Island Location Plan</td>
<td>1</td>
</tr>
<tr>
<td>General Site Plan</td>
<td>1</td>
</tr>
<tr>
<td>Site Layout Plan</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CALCULATIONS:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rational Method Form</td>
<td>1</td>
</tr>
<tr>
<td>Pre - Development</td>
<td>1</td>
</tr>
<tr>
<td>Post - Development</td>
<td>1</td>
</tr>
<tr>
<td>Storm Drainage Standard, Plate 1, Plate 3 &amp; 4</td>
<td>2</td>
</tr>
</tbody>
</table>
SITE:

Location;

The proposed project is located on the northern tip of the island of Hawaii, in Halaula, North Kohala District, Island of Hawaii, State of Hawaii. The Kohala Middle School Campus address is 53-4155 Akoni Pule Highway. (North side of highway.)

General;

The campus is situated on a rectangular shaped parcel approximately 610 feet x 650 ft., which contains an area of 8.6 acres. The lot has split zoning, residential, RS-15 and Agricultural, A-20a, approximately 60% and 40% respectively. Current campus improvements include, a main classroom/administration building, restrooms, classroom building, and five portable classrooms, open playcourt and access driveways. Along the west boundary there are five teacher cottages. Approx existing impervious area is 64,000 sf or 1.45 acres.

The new improvements will include an access driveway (5,175 sf / 0.12 acres), covered playcourt (11,225 sf / 0.26 acres) and optional walkways, and a 6" fire line.

Topography;

The site elevation ranges from 335' to 305', generally sloping from south east to north west at an average slope of approx. ±3 percent. The playcourt will be located on the existing grassed play field area which has an approx. slope of ±1%.

Flood Zone;

F.E.M.A.'s Insurance Rate Map and the County of Hawaii, Department of Public Works have determined that the project site is considered to be in Zone "X".

F.E.M.A. defines Zone "X" as; 1) "Areas determined to be outside the 500-year flood plain." 2) "Areas of 500-year flood; areas of 100-year flood with depths of less than 1 foot or with drainage areas of less than 1 square mile; and areas protected by levees from 100-year flood.
On Site Pre-Development Runoff by Rational Method;

A 10 year design storm interval will be used for onsite pre-development and post-development runoff calculations.

A pre-development 10 yr. storm runoff quantity was estimated to be 4.1 cfs peak from a drainage area of 8.3 acres, using the Rational Method. The runoff coefficient for the site is based on a weighted average of existing improvement areas and grassed play field and other areas. (See attached Rational Method calculation sheet.)

On Site Post-Development Runoff;

A post-development 10 yr storm runoff was calculated to be 4.5 cfs peak from the same drainage area. This runoff quantity is base on the following assumptions:
1) Increased CN value due to estimated increase in impervious areas from playcourt and driveway improvements.

CONCLUSION:

The increase in runoff for Tm 10 yr. design storm due to new improvements is estimated at approximately 0.4 cfs. The new playcourt is located adjacent to two existing drain sumps. Down spouts for the south side of structure will be directed to these sumps. Down spouts on north side of structure will be directed to the grassed play field. Runoff from the driveway will be dissipated along its length and into existing sumps. Estimated distribution of runoff: 0.25 cfs from driveway and structure will be directed to the sumps and 0.15 cfs will be dissipated on the play field and other grassed areas.
HYDROLOGY FOR SMALL WATERSHEDS BY RATIONAL METHOD

DESIGN STORM:  
- Tm10 YR
- Tm25 YR
- Tm50 YR

DEVELOPMENT CONDITION:  
- Present Condition
- Future Condition

A - DRAINAGE AREA:
DIFFERENCE IN ELEVATION: _____ FT.
LENGTH: _____ FT.
AVERAGE SLOPE: .02 FT/FT.
DRAINAGE AREA: 8.3 ACRES.
(See copy of map showing drainage area.)

C - RUNOFF COEFFICIENT: 0.33

SOIL TYPE: KhA (Class B)

WATERSHED CHARACTERISTICS

<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>EXTREME</th>
<th>HIGH</th>
<th>MODERATE</th>
<th>LOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>INfiltration</td>
<td>Negligible</td>
<td>Slow</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>0.20</td>
<td>0.14</td>
<td>0.07</td>
<td>0.0</td>
</tr>
<tr>
<td>RELIEF</td>
<td>Steep</td>
<td>Hilly</td>
<td>Rolling</td>
<td>Flat</td>
</tr>
<tr>
<td></td>
<td>(&gt;25%)</td>
<td>(15-25%)</td>
<td>(5-15%)</td>
<td>(0-5%)</td>
</tr>
<tr>
<td></td>
<td>0.08</td>
<td>0.06</td>
<td>0.03</td>
<td>0.0</td>
</tr>
<tr>
<td>VEGETAL COVER</td>
<td>None</td>
<td>Poor</td>
<td>Good</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>(&lt;10%)</td>
<td>(10-50%)</td>
<td>(50-90%)</td>
<td>(0-50%)</td>
</tr>
<tr>
<td></td>
<td>0.07</td>
<td>0.05</td>
<td>0.03</td>
<td>0.0</td>
</tr>
</tbody>
</table>

DEVELOPMENT TYPE

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Industrial/business</th>
<th>Hotel/Apartment</th>
<th>Residential</th>
<th>Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>0.55</td>
<td>0.45</td>
<td>0.40</td>
<td>0.15</td>
</tr>
</tbody>
</table>

((0.22 FOR SCHOOL YARD) (6.6 AC) + (0.90 FOR BLDG & WALK) (1.7))/6.3=0.36

RUNOFF COEFFICIENT = _______ + _______ + _______ + _______ = _______

Coef. Table from "Storm Drainage Standard" County of Hawaii. - (Circle & Sum watershed characteristics)

i - RAINFALL INTENSITY: 1.5

TIME OF CONCENTRATION = 60 MIN. From: S.D.S. page 17, Plate 3
1 HOUR INTENSITY RAINFALL= 1.5 IN. From: ☑ Plate 1 ☐ Plate 2
RAINFALL INTENSITY (i) = 1.5 From: page 17, Plate 4

Q - RUNOFF QUANTITY: Q = (C) x (i) x (A)

<table>
<thead>
<tr>
<th>AREA (A)</th>
<th>INTENSITY (i)</th>
<th>COEFFICIENT (C)</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.3</td>
<td>1.5</td>
<td>0.36</td>
<td>4.5 CFS</td>
</tr>
</tbody>
</table>

MKI © - 04/04/05 - R-TORM.wpd
Plate 3
Overland Flow Chart

Plate 4
INTENSITY DURATION
1 HR RAINFALL CURVES

RAINFALL INTENSITY (IN/HR.) FOR INDICATED DURATIONS

TC=30 MIN (2)
=60 MIN.
**HYDROLOGY FOR SMALL WATERSHEDS BY RATIONAL METHOD**

**DESIGN STORM:**
- **Tm10 YR**
- **Tm25 YR**
- **Tm50 YR**

**DEVELOPMENT CONDITION:**
- **Present Condition**
- **Future Condition**

### A - DRAINAGE AREA:
- **DIFFERENCE IN ELEVATION:** __________ FT.
- **LENGTH:** __________ FT.
- **AVERAGE SLOPE:** __________ FT/FT.
- **DRAINAGE AREA:** __________ ACRES.

(See copy of map showing drainage area.)

### C - RUNOFF COEFFICIENT: 0.33

**SOIL TYPE:** Kha (Class B)

**WATERSHED CHARACTERISTICS**

<table>
<thead>
<tr>
<th>INFILTRATION</th>
<th>EXTREME</th>
<th>HIGH</th>
<th>MODERATE</th>
<th>LOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negligible</td>
<td>0.20</td>
<td>0.14</td>
<td><strong>Medium</strong></td>
<td>0.07</td>
</tr>
<tr>
<td>Slow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RELIEF</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Steep (&gt;25%)</td>
<td>0.08</td>
<td>0.06</td>
<td><strong>Rolling</strong> (5-15%)</td>
<td>0.03</td>
</tr>
<tr>
<td>Hilly (15-25%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VEGETAL COVER</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>None (&lt;10%)</td>
<td>0.07</td>
<td>0.05</td>
<td><strong>Good</strong> (10-50%)</td>
<td>0.03</td>
</tr>
<tr>
<td>Poor (10%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DEVELOPMENT Type**
- Industrial/business: 0.55
- Hotel/Apartment: 0.45
- Residential: 0.40
- Agriculture: 0.15

\[
\text{RUNOFF COEFFICIENT} = \frac{(0.22 \text{ FOR SCHOOL YARD}) (7.0 \text{ AC}) + (0.90 \text{ FOR BLDG & WALK}) (1.3))}{8.3} = 0.33
\]

Coef. Table from "Storm Drainage Standard" County of Hawaii. - (Circle & Sum watershed characteristics)

### i - RAINFALL INTENSITY: 1.5

**TIME OF CONCENTRATION** = \( \frac{60}{\text{MIN.}} \) From: S.D.S. page 17, Plate 3

**1 HOUR INTENSITY RAINFALL** = \( \frac{1.5}{\text{IN.}} \) From: \( \checkmark \) Plate 1 \( \Box \) Plate 2

**RAINFALL INTENSITY (i) = 1.5** From: page 17, Plate 4

### Q - RUNOFF QUANTITY: \[ Q = (C) \times (i) \times (A) \]

<table>
<thead>
<tr>
<th>AREA (A)</th>
<th>INTENSITY (i)</th>
<th>COEFFICIENT (C)</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.3</td>
<td>1.5</td>
<td>0.33</td>
<td>4.1 CFS</td>
</tr>
</tbody>
</table>

MKI © - 04/04/00 - R-FORM.wpd
Plate 3

Overland Flow Chart

Plate 4

Intensity Duration
1 HR Rainfall Curves

Rainfall Intensity (in/hr.) for Indicated Durations
Appendix C
Early Consultation Comment Letters
July 29, 2020

Duane Y. Kashiwai, Administrator
Facilities Development Branch
State of Hawaii, Department of Education
Office of School Facilities and Support Services
3633 Waialae Avenue
Honolulu, Hawaii 96813
c/o, Jolene Velasco
jolene.velasco@k12.hi.us

Dear Mr. Kashiwai:

SUBJECT: HRS Chapter 6E-8 Historic Preservation Review — Kohala Middle School – Covered Play-court, DOE Job No. Q16200-17
Request for Concurrence with “No historic properties Affected”
Pueke and Kukuwiluhia Ahupua’a, North Kohala District, Island of Hawai‘i
TMK: (3) 5-3-010:056

This letter provides the State Historic Preservation Division’s (SHPD’s) HRS §6E-8 review of the Hawaii State Department of Education’s (HIDOE’s) proposed project titled, Kohala Middle School, Covered Playcourt, HIDOE Job No.: Q16200-17. The SHPD received this submittal on July 8, 2020. The submittal included the HIDOE’s cover letter, TMK map and photographs, construction plans, a SHPD HRS 6E Submittal Form, and the supporting document titled, Addendum Archaeological Monitoring Plan for the Hawai‘i DOE Cesspool Conversion Project, Honoka’a School District, Kohala Middle School, Pueke & Kukuwiluhia Ahupua’a, North Kohala District, Hawai‘i Island [TMK: (3) 5-3-010:056 por.] (Tulchin and Hammatt, January 2009). The HIDOE requests concurrence with the determination of “effect, with proposed mitigation commitments.”

The Kohala Middle School campus was constructed over time. Building A (classroom/administration/cafeteria) was constructed in 1939, and Buildings CT1 and CT2 are cottages built in 1940. According to the HIDOE, Building A (SIHP # 50-10-08-7522) generally retains its original appearance and features, except for the recently constructed off grade ramps leading to the raised main floor, and qualifies for listing on the Hawaii Register of Historic Places.

The school is located at 53-4155 Akoni Pule Highway, Kapaa, Hawai‘i. The campus lies on 8,606 acres, and the project area is 8,835 square ft. The scope of work includes a new covered play-court, connecting walkway, and a 20-ft.-wide fire apparatus route and fire hydrant. The new play court will be installed in the large grassy field located west of the existing outdoor play-court. It is an independent structure and does not alter the aesthetic of the existing buildings. The entire project area has been previously leveled and graded during the development of the school. Ground disturbance will include roughly 420 ft. of utility trenching (water, sewer, power) to a depth of 2-6 ft below surface. Excavation for the IWS absorption bed is estimated to be 7 ft. deep.

A review of SHPD’s records show that an archaeological inventory survey was conducted (Erkelens and Athens 1994). No archaeological historic properties were identified, and the report stated that any pre-contact surface features that may have once been in the project area have probably been destroyed by mechanized land modifications associated with sugarcane cultivation and/or construction on school campus ground. Additionally, the USDA (Foote et. al 1972) identifies the soils within the project area as Kohala silty clay (ash fields on lava flows), 0 to 3 percent slopes (435).
The proposed new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired and would not destroy the historic materials, features and spatial relationships that characterize the historic school campus. Therefore, the proposed project will not affect the design, materials, workmanship, setting, location, association and feeling of the historic school campus.

The HIDOE proposes the use of the Tulchin and Hammatt (2009) archaeological monitoring plan (AMP) prepared for an earlier on-campus project. SHPD Accepted this earlier AMP in a letter dated February 3, 2009 (Log No. 2009.0092, Doc. No. 0902TD01). Additionally, the HIDOE requests SHPD concur with on-call rather than on-site archaeological monitoring due to the low potential to encounter historic properties. Although no archaeological historic properties or cultural materials were identified during project archaeological monitoring, the archaeological monitoring report (Wilkinson et al. 2009) recommended on-site archaeological monitoring for future ground disturbing work due to the potential for hearths, storage pits, burials, or remains associated with the early founding of the school to be present below the former agricultural plow zone or at depths not impacted by school construction. SHPD approved the archaeological monitoring report in a letter dated September 16, 2009 (Log No. 2009.3342, Doc. No. 0909MD25).

**SHPD does not concur** with the HIDOE’s project effect determination of “effect, with proposed mitigation commitments” for the current project. No archaeological historic properties have been identified and the proposed project will not adversely affect the campus buildings. **SHPD requests** archaeological monitoring be conducted for identification purposes and approves archaeological monitoring proceeding under the monitoring provisions provided in the Tulchin and Hammatt (2009) AMP with the stipulation that archaeological monitoring shall initially proceed on an on-site basis. Based on initial monitoring results, a written request may be made to change from on-site to weekly spot monitoring, ensuring the archaeologists have the opportunity to observe and document appropriate stratigraphic and archaeological data within the project area.

Please contact Tanya Gumapac-McGuire, Architecture Branch Chief, at Tanya.Gumapac-Mcguire@hawaii.gov for any concerns regarding architectural resources, and Sean Nāleimaile, Hawaii Island Lead Archaeologist, at (808) 933-7651 or at Sean.P.Naleimaile@hawaii.gov for any questions regarding archaeological resources or this letter.

Mahalo,

*Alan Downer*

Alan S. Downer, PhD  
Administrator, State Historic Preservation Division  
Deputy State Historic Preservation Officer

cc: May Price, may.price@k12.hi.us  
Terryann Oshiro, terryann.oshiro@k12.hi.us  
Marjorie Vicari, marjorie.vicari@k12.hi.us
August 25, 2020

Jason K. Inaba, P.E.
Inaba Engineering, Inc.
273 Waianuenue Avenue
Hilo, Hawaii 96720
(sent via email to inabaeng@hawaii.rr.com)

SUBJECT: DRAINAGE PLAN IN ACCORDANCE WITH SECTION 25-2-72(3)
Proposed Project: Kohala Middle School Covered Playcourt
Tax Map Key: 5-3-010:056

We have reviewed the Drainage Report (submitted 8/6/2020) for the proposed development submitted in accordance with Section 25-2-72(3) of the Hawaii County Code and provide the following:

As detailed in the Drainage Report, its calculations and drainage map, the developmental runoff increase of 0.4 cfs is considered minimal with approximately 0.25 cfs directed to existing sumps and 0.15 cfs dissipated on an existing playfield and grassed area. Due to the minimal increase in runoff and the distance from the project site to neighboring properties, no drainage measures are proposed. We approve the subject drainage plan based on the stated negligible effect.

Should you have any questions or concerns, please contact Melanie DeMello of the Engineering Division at 961-8327.

Melanie DeMello

For BEN E. ISHI, Division Chief
Engineering Division

MD

C: ENG-KON