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DAVID Y. IGE
GOVERNOR

DR. CHRISTINA M. KISHIMOTO
SUPERINTENDENT

NOV - 8 2017

STATE OF HAWAI'I
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAI'I 96804

OFFICE OF SCHOOL FACILITIES AND SUPPORT SERVICES

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'17 OCT 27 P2:06
OFC. OF ENVIRONMENTAL
QUALITY CONTROL

October 23, 2017

Mr. Scott Glenn
Director, Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813-2437

Re: Waimanalo Elementary & Intermediate School
Science, Technology & Media Building
DOE Job No. Q54001-14
Tax Map Key: 4-1-009: 012 por.
Waimanalo, Oahu, Hawaii

Dear Mr. Glenn:

The Department of Education, State of Hawai'i, has reviewed the Draft Environmental Assessment for the subject project and anticipates a Finding of No Significant Impact (FONSI) determination. Please publish this determination in the next Environmental Notice.

One printed copy of the Draft Environmental Assessment and a CD with the document in PDF format are attached. The Environmental Notice publication form will be e-mailed to the Office of Environmental Quality Control.

Please contact Janna Mihara, Project Coordinator of the Facilities Development Branch, Project Management Section, at 784-5120 or via e-mail at janna_mihara@notes.k12.hi.us.

Sincerely,

Duane Y. Kashiwai
Public Works Administrator
Facilities Development Branch

DYK:lm

c: Facilities Development Branch

B-202

AGENCY
PUBLICATION FORM

Project Name:	Waimanalo Elementary and Intermediate School Science Technology and Media Building
Project Short Name:	WEIS STM Building
HRS §343-5 Trigger(s):	(a)(1) proposed the use of state lands or funds
Island(s):	Oahu
Judicial District(s):	District of Koolau Poko
TMK(s):	[1] 4-1-009: 012 por.
Permit(s)/Approval(s):	Historic Site Review, Variance from Pollution Controls, DCAB Review, Guilding Permit, Grading and Grubbing Permit, Certificate of Occupancy, Fire Protection
Proposing/Determining Agency:	Department of Education, State of Hawaii Project Management Section 3633 Waialae Avenue Honolulu, HI 96816
Contact Name, Email, Telephone, Address	Janna Mihara, Project Coordinator OSSFS-Facilities Development Branch-PMS 3633 Waialae Avenue Honolulu, Hawaii 96816 T: (808) 377-8314 E: janna_mihara@notes.K12.hi.us
Accepting Authority:	(for EIS submittals only)
Contact Name, Email, Telephone, Address	
Consultant:	Gerald Park Urban Planner
Contact Name, Email, Telephone, Address	Gerald Park 95-595 Kanamee Street #324 Mililani, HI 96789 T: (808) 625-9626 E: gpark@gpup.biz

Status (select one)	**Submittal Requirements**
_X_ DEA-AFNSI	Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEA, and 4) a searchable PDF of the DEA; a 30-day comment period follows from the date of publication in the Notice.
____ FEA-FONSI	Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; no comment period follows from publication in the Notice.
____ FEA-EISPN	Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; a 30-day comment period follows from the date of publication in the Notice.
____ Act 172-12 EISPN ("Direct to EIS")	Submit 1) the proposing agency notice of determination letter on agency letterhead and 2) this completed OEQC publication form as a Word file; no EA is required and a 30-day comment period follows from the date of publication in the Notice.
____ DEIS	Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEIS, 4) a searchable PDF of the DEIS, and 5) a searchable PDF of the distribution list; a 45-day comment period follows from the date of publication in the Notice.
____ FEIS	Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEIS, 4) a searchable PDF of the FEIS, and 5) a searchable PDF of the distribution list; no comment period follows from publication in the Notice.

____	FEIS Acceptance Determination	The accepting authority simultaneously transmits to both the OEQC and the proposing agency a letter of its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS; no comment period ensues upon publication in the Notice.
	FEIS Statutory Acceptance	Timely statutory acceptance of the FEIS under Section 343-5(c), HRS, is not applicable to agency actions.
____	Supplemental EIS Determination	The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is or is not required; no EA is required and no comment period ensues upon publication in the Notice.
____	Withdrawal	Identify the specific document(s) to withdraw and explain in the project summary section.
____	Other	Contact the OEQC if your action is not one of the above items.

Project Summary

Provide a description of the proposed action and purpose and need in 200 words or less.

The School's classroom buildings were constructed between 1951 and 1962 and currently does not have space to accommodate the School's STM program. The proposed project will provide a stand-alone facility where students can learn and apply rigorous scientific inquiry and engineering design as an educational process. It is also a facility where students can engage in video and multi-media production.

A rectangular-shaped building with a footprint of approximately 4,543 gross square feet is proposed. Programmed space for the one-story structure is allocated for two Direct Instruction classrooms, one Lab area, and a covered open space separating the classrooms and lab.

The cost of construction is estimated at $3.44 million and will be funded by the State of Hawai‘i. Construction is projected to start in Winter 2018 with completion by Winterl 2019. The facility should be ready for occupancy in Spring 2020.

DRAFT ENVIRONMENTAL ASSESSMENT

WAIMĀNALO ELEMENTARY AND INTERMEDIATE SCHOOL SCIENCE, TECHNOLOGY, AND MEDIA BUILDING

Por. Waiamānalo Ahupuaʻa, District of Koʻolau Poko, Oʻahu, Hawaiʻi
Department of Education Job. No. Q93000-14

Prepared in Partial Fulfillment of the Requirements of Chapter 343, Hawaii Revised Statutes and Hawaii Administrative Rules, Title 11, Chapter 200

Prepared for
Department of Education
State of Hawaiʻi
Office of School Facilities and Support Services
Facilities Development Branch – Project Management Section
3633 Waialae Avenue
Honolulu, Hawaiʻi 96816

Ōkakopa 2017

DRAFT ENVIRONMENTAL ASSESSMENT

WAIMANALO ELEMENTARY AND INTERMEDIATE SCHOOL SCIENCE, TECHNOLOGY, AND MEDIA BUILDING

Por. Waimānalo Ahupua'a, District of Ko'olau Poko, O'ahu, Hawai'i
Department of Education Job. Q93000-14

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

Prepared for

Department of Education
State of Hawai'i
Project Management Section, Facilities Development Branch
Office of School Services and Support Services
3633 Waialae Avenue
Honolulu, Hawai'i 96816

Prepared by

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

and

Collaborative Studio LLC
9 N. Pauahi Street, Suite 300
Honolulu, Hawai'i 96817

Ōkakopa 2017

PROJECT PROFILE

Proposed Action:	Waimānalo Elementary and Intermediate School Science, Technology, and Media Building DOE Job No. Q93000-14
Location:	Portion Waimānalo, District of Ko'olau Poko O'ahu, Hawai'i
Address:	41-1330 Kalanianaole Highway Waimānalo, Hawai'i 96795
Proposing/Determining Agency:	Department of Education State of Hawai'i Facilities Development Branch, Project Management Section Office of School Facilities and Support Services 3633 Waialae Avenue Honolulu, Hawai'i 96816
Tax Map Key:	4-1-009: 012
Land Area:	18.536 acres (807,428 sf)
Landowner:	State of Hawai'i
Existing Use:	Public Elementary and Intermediate School
State Land Use Designation:	Urban
O'ahu General Plan:	Rural
Sustainable Communities Plan (SCP):	Ko'olau Poko
SCP Land Use Map:	Institutional
Zoning:	R-5 Residential District
Special Management Area:	Not in Special Management Area
Need for Assessment:	Chapter 343, Hawai'i Revised Statutes §343-5 (a)(1) Propose the use of state or county lands or the use of state or county funds.
Anticipated Determination:	Finding of No Significant Impact
Contact Person:	Janna Mihara, Project Coordinator Department of Education, State of Hawai'i Facilities Development Branch, Project Management Section Office of School Facilities and Support Services 3633 Waialae Avenue Honolulu, Hawai'i 96816 Telephone: 784-5120

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DESCRIPTION OF THE PROPOSED PROJECT 1

The Department of Education, State of Hawai'i, proposes to construct a new classroom building for the Science, Technology, and Media Program ("STM") at Waimānalo Elementary and Intermediate School. Located in the *ahupua'a* of Waimanalo (portion), District of Ko'olau Poko, O'ahu, Hawai'I, the School is bounded by Kalanianaole Highway on the north, Waimanalo District Park on the south, residential developments on the east and west. A Vicinity Map is shown as Figure 1.

The 18.536 acre School site bears Tax Map Key 4-1-009: 012. A Tax Map is shown as Figure 2.

A. Purpose and Need for the Project

The School's classroom buildings were constructed between 1951 and 1962 and currently does not have space to accommodate the School's STM program. The proposed project will provide a stand-alone facility where students can learn and apply rigorous scientific inquiry and engineering design as an educational process. It is also a facility where students can engage in video and multi-media production.

B. Technical Characteristics

1. STM Building

The site of the proposed STM building is bounded by Building S (Waimānalo Public Library) on the north, Building E on the south, an open field on the east, and Buildings C and D on the west (See Partial Site Plan, Sheet A102). The building site is an unfenced, asphalt play court and grass lawn.

A rectangular-shaped building with a footprint of approximately 4,543 gross square feet is proposed. Programmed space for the one-story structure is allocated for two Direct Instruction classrooms, one Lab area, and a covered open space separating the classrooms and lab (See Sheet A103 Floor Plans and Table 1). Each Direct Instruction Classroom has an occupancy load of 48 persons and the Laboratory 24 persons. The gross area is larger than the program areas because it includes area under roof and non-programmed spaces such as restrooms, storage, data room, and janitor's closet.

Table 1. Space Tabulation

GROSS AREA SUMMARY	
Name	Area (SF)
Covered Open Space	1,821
Enclosed Area Lab 1 Wing	1,672
Enclosed Area Direct Instruction Wing	1,050
Total	4,543

Source: Collaborative Studio, 2017.

The structure will be constructed on poured in place concrete wall footings, column footings, and floor slab. The wall assembly consists of fiber cement board on the exterior, wood studs, and gypsum board siding on the interior. Glue laminated beams, wood rafters, plywood decking with rigid insulation and TPO finish comprise the roof.

Commercial steel fencing will secure the open sides of the covered open space.

The height of the building is approximately 15'-6" measured from finish grade to the roof high point. Sections and Exterior Elevations are shown as Sheets A201 and Sheets A301 and A302, respectively. The finish floor elevation is 26'- 5".

The STM building will be designed according to a high-performance building rating program developed to specifically facilitate the design, construction, and operation of high performance schools. The rating system is termed the Hawaii Collaborative for High Performance Schools or HI-CHPS. A high-performance school is defined as having learning environments that are healthy and comfortable, energy resource and water efficient, safe, secure and adaptable, and easy to operate and maintain.

HI-CHPS criteria will be used in developing sustainability features for the project during design, construction, and performance phases. Design strategies will be developed and documented for the design phase; construction related criteria will be developed and documented for the construction phase; and operation and maintenance criteria documented for the performance phase.

General HI-CHPS design measures for sustainability include but are not limited to daylighting in classrooms, outdoor classrooms, enhanced air quality measures, advanced energy management systems, indoor water use reduction, water management systems for landscaping and domestic use, and post-construction stormwater management.

The building will not be equipped with a fire sprinkler system.

A mix mode air conditioning system will cool interior spaces. When temperatures permit, air conditioning will be turned off and rooms cooled by ceiling fans. Air conditioning fans, compressors, and condensers will be mounted on concrete pads under a roof overhang.

Uncovered walkways will connect to walkways at or alongside Buildings C, D, and E.

2. Circulation and Off-Street Parking

Changes to on-campus vehicle circulation patterns and parking area configurations are not proposed with one exception. A fire department access driveway will be constructed from the eastern end of the Library parking lot and along the east side of the Library to the building site. The 20-foot wide surface will be constructed of grass pavers. A fire hydrant will be installed at the end of the driveway.

3. Infrastructure

Potable water will be supplied through a new service line from the existing on-campus water system.

A new wastewater lateral will connect the restrooms to the on-site collection system for collection and discharge into the existing municipal system. An existing wastewater line crossing the site will be rerouted.

Drainage issues have not occurred on or in the vicinity of the building site thus permanent drainage structures are not proposed. Non-structural measures will include sloping the ground away from the building to allow runoff to flow away from the building, collecting runoff in low areas or landscaped areas for infiltration into the ground.

Electrical power will be drawn from the existing main electrical switchboard/HECO transformer vault located *makai* of the Cafeteria (Building J). Electrical power and cabling for the PA system and data transfer will be routed in underground conduits.

4. Demolition

The existing play court, trees, and shrubs within the project limits will be demolished. Existing irrigation lines, wastewater lines, water lines, and electrical systems within the project limits will be cut, plugged and removed, rerouted, or abandoned in place.

5. Grading

The building site will be grubbed and graded to a finish elevation of about 27- feet and the finish floor set at elevation 27'-4". The area to be disturbed by construction is estimated at less than 7,500 sf. A Grading Plan has not yet been completed.

6. Landscaping

Native plants will be used in the landscaping. Planted areas will be equipped with an underground irrigation system. A Landscape Plan is shown as Sheet L102 and a Plant Schedule as Sheet L104.

C. Economic Characteristics

The cost of construction is estimated at $3.44 million and will be funded by the State of Hawai'i. Construction is projected to start in Winter 2018 with completion by Winterl 2019. The facility should be ready for occupancy in Spring 2020.

The 18.536 acre lot is owned by the State of Hawai'i. Land for the School was set aside by three Executive Orders from the Territory of Hawai'i (i.e. State of Hawai'i) to be under the management and control of the Department of Public Instruction (i.e. Department of Education). The land area for the three EO's totals 21.053 acres.

EO 766	Site for Waimanalo Public School	6.0 acres	August 30, 1937
EO 1521	Waimanalo School Addition	6.563 acres	August 14, 1952
EO 1648	Addition to Waimanalo Public School	8.490 acres	August 8, 1952

In 1989, the DOE returned 2.66 acres to the Department of Land and Natural Resources for public housing. Subsequently, Executive Order 3600 set aside approximately 2.53 acres of the returned acreage to the Hawaii Housing Authority for a public housing project.

D. Social Characteristics

The project will not displace any school buildings or classrooms.

Source: Google Maps 2017 Aerial

Figure 1
Vicinity Map

Waimānalo Elementary and Intermediate School STEM Building

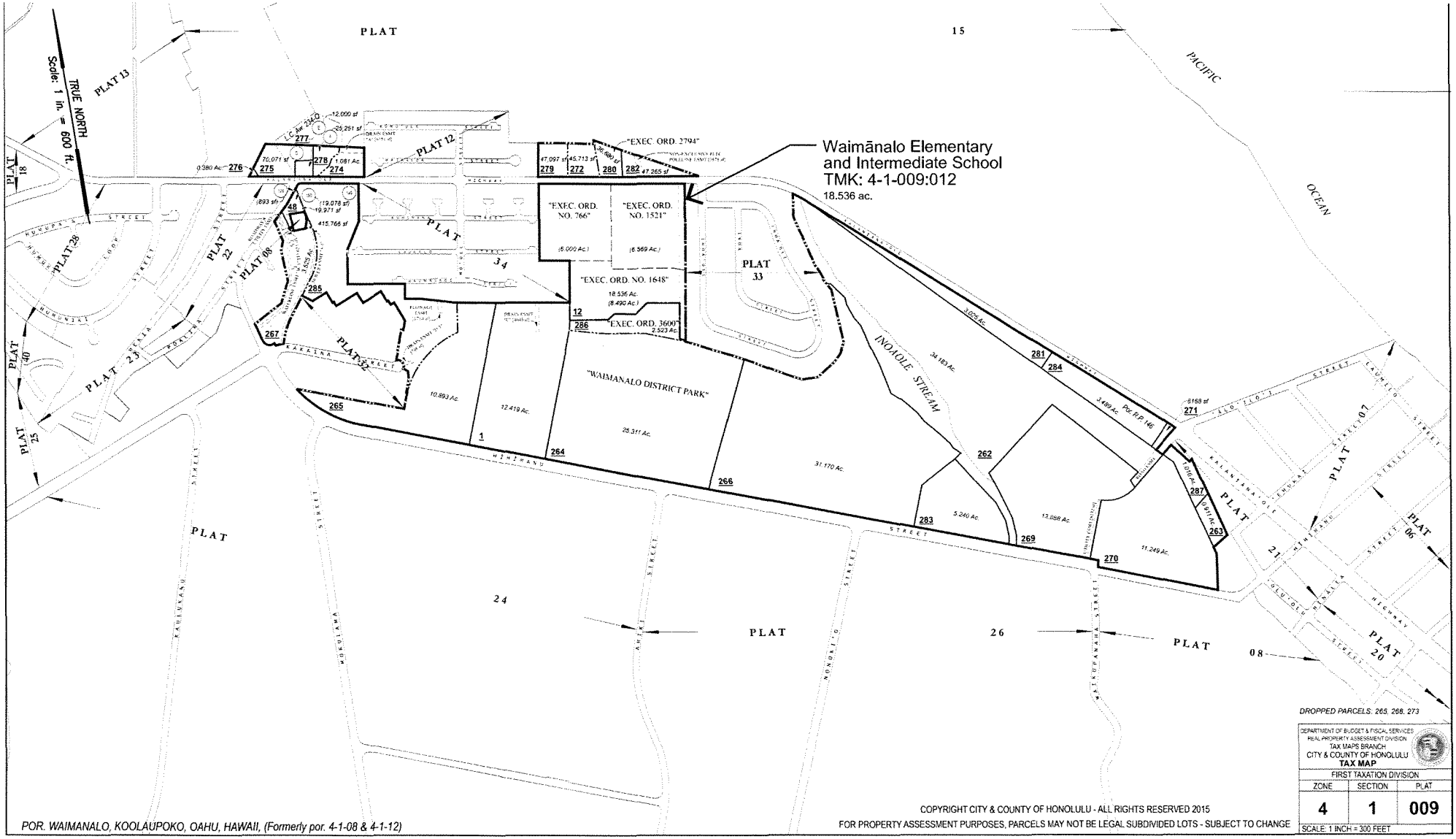
Gerald Park
Urban Planner
June 2017

LINEAL SCALE (FEET)
250 125 0 125 250 500

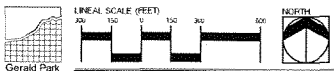
NORTH

Waimānalo, District of Ko'olau Poko, O'ahu, Hawai'i

Department of Education, State of Hawai'i



Source: City & County Website Online Services

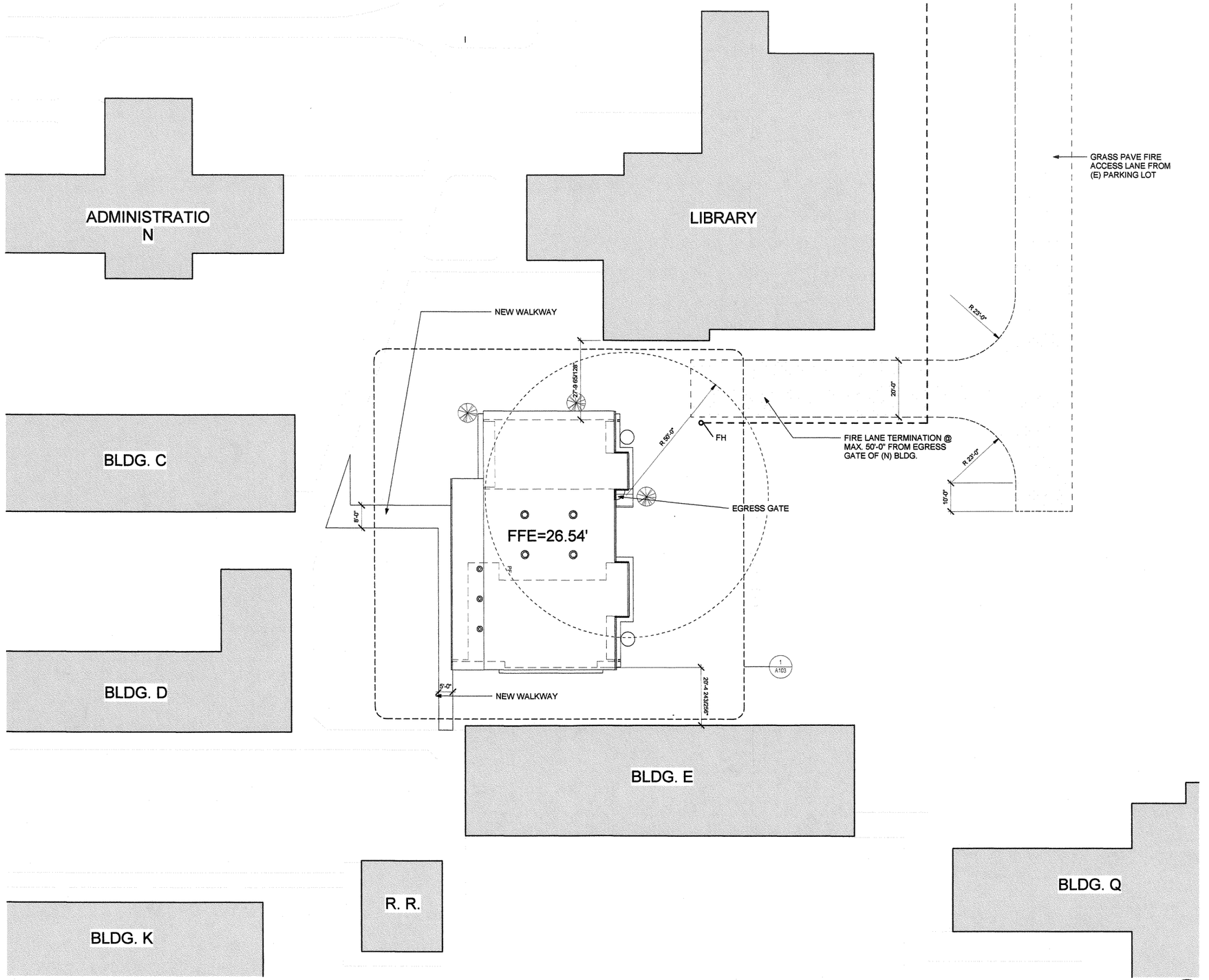


Gerald Park
Urban Planner
June 2017

Waimānalo, District of Ko'olau Poko, O'ahu, Hawai'i

Figure 2
Tax Map
Waimānalo Elementary and Intermediate School STEM Building

Department of Education, State of Hawai'i



1 A102 SITE PLAN
1/16" = 1'-0"

GRAPHIC SCALES 1"=60'-0" 0 30' 60' | 1/16"=1'-0" 0 4' 8' 16' | 1/8"=1'-0" 0 2' 4' 8' | 3/16"=1'-0" 0 1' 2' 4' | 1/4"=1'-0" 0 1' 2' 4' | 1/2"=1'-0" 0 1' 2' 4' | 3/4"=1'-0" 0 1' 2' 4' | 1-1/2"=1'-0" 0 6' 12' | 3"=1'-0" 0 3' 6' 12'

REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED

Seal: CATHI L. SCHAR LICENSED PROFESSIONAL ARCHITECT No. 13620 HAWAII, U.S.A.

EXPIRATION DATE: 04.30.18

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

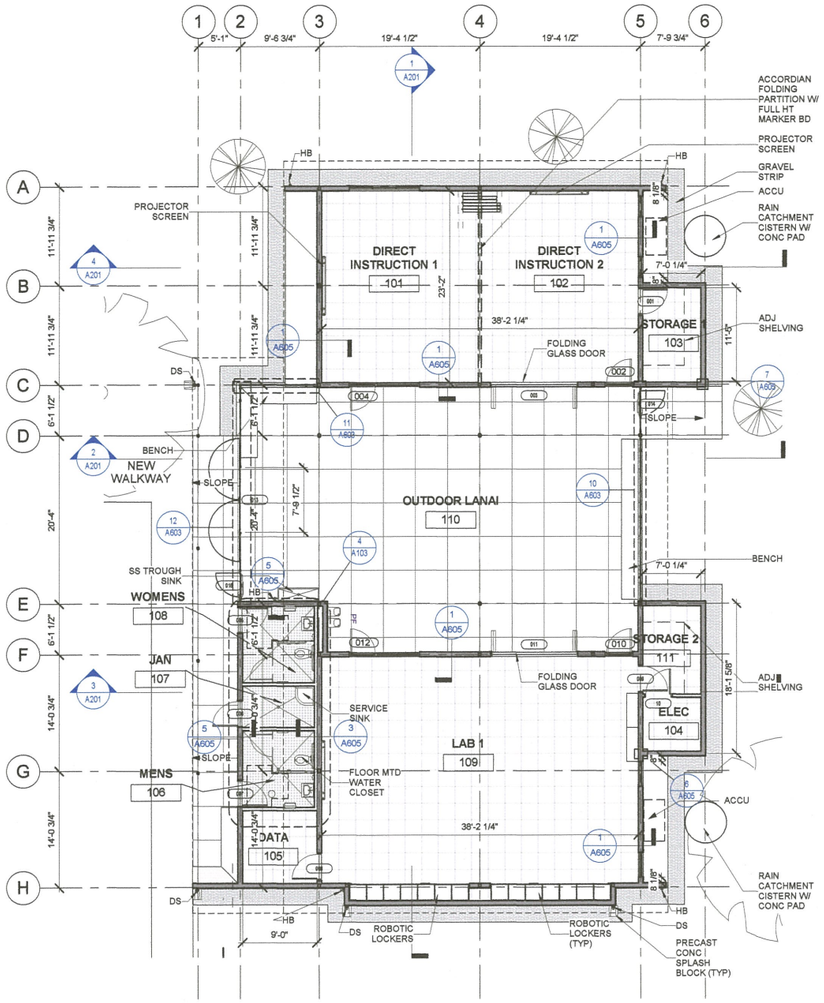
DEPARTMENT OF EDUCATION
STATE OF HAWAII

WAIMANALO INTERMEDIATE SCHOOL
STEM BUILDING
WAIMANALO, OAHU, HAWAII
TMK:4-1-009:012

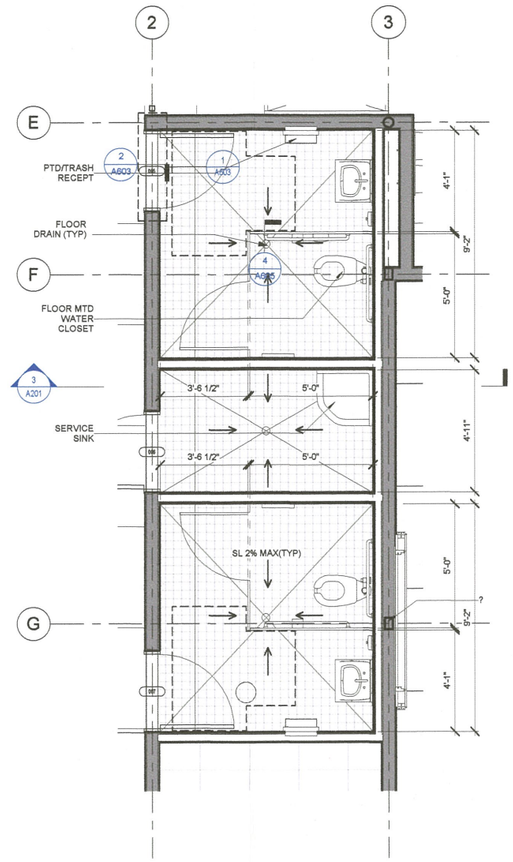
PARTIAL SITE PLAN

COLLABORATIVE STUDIO		DOE JOB NO.	DRAWING NO.
DESIGNED BY: CS	CHECKED BY: Checker	P81004-13	A102
DRAWN BY: Author	APPROVED BY: Approver	DATE 9/22/17	SHEET
SCALE: AS NOTED			OF SHTS.

FILE _____ DRAWER _____ FOLDER _____



1 A103 OVERALL FLOOR PLAN
1/8" = 1'-0"

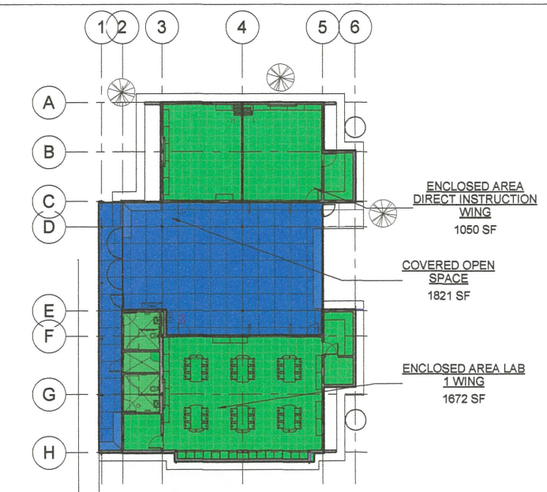


4 A103 RESTROOM DETAIL PLAN
3/8" = 1'-0"

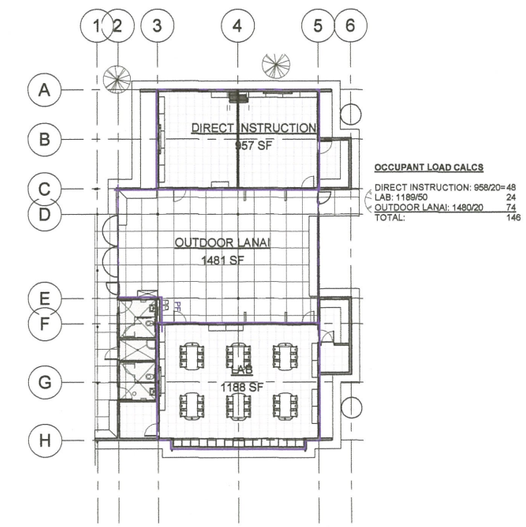
1. PROGRAM AREAS		
Room Name	Revised FADS (Net sf)	Actual (Net sf)
DIRECT INSTRUCTION 1	1000	438 SF
DIRECT INSTRUCTION 2	1000	438 SF
ELEC		46 SF
LAB 1	2400	1109 SF
OUTDOOR LANAI		1481 SF
Grand total: 5	4400	3512 SF

2. NON-PROGRAM AREAS	
Room Name	Actual (Net sf)
DATA	79 SF
ELEC	46 SF
JAN	44 SF
MENS	81 SF
OUTDOOR LANAI	1481 SF
STORAGE 1	80 SF
STORAGE 2	75 SF
WOMENS	81 SF
Grand total: 8	1965 SF

GROSS AREA SUMMARY	
Name	Area
COVERED OPEN SPACE	1821 SF
ENCLOSED AREA LAB 1 WING	1672 SF
ENCLOSED AREA DIRECT INSTRUCTION WING	1050 SF
Grand total: 3	4544 SF



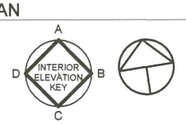
2 A103 GROSS AREA SUMMARY
1/16" = 1'-0"

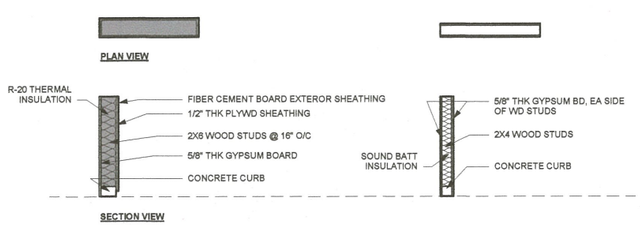


OCCUPANT LOAD CALCS

DIRECT INSTRUCTION: 958/20=	48
LAB: 1188/50	24
OUTDOOR LANAI: 1480/20	74
TOTAL:	146

3 A103 OCCUPANT LOAD
1/16" = 1'-0"





WALL TYPES
1/2" = 1'-0"

GRAPHIC SCALES 1"=60'-0" 1/16"=1'-0" 1/8"=1'-0" 3/16"=1'-0" 1/4"=1'-0" 1/2"=1'-0" 3/4"=1'-0" 1-1/2"=1'-0" 3"=1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT ___ OF ___	DATE	APPROVED

Seal: CATHI L. SCHAR LICENSED PROFESSIONAL ARCHITECT No. 13620 HAWAII, U.S.A.

EXPIRATION DATE: 04.30.18

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

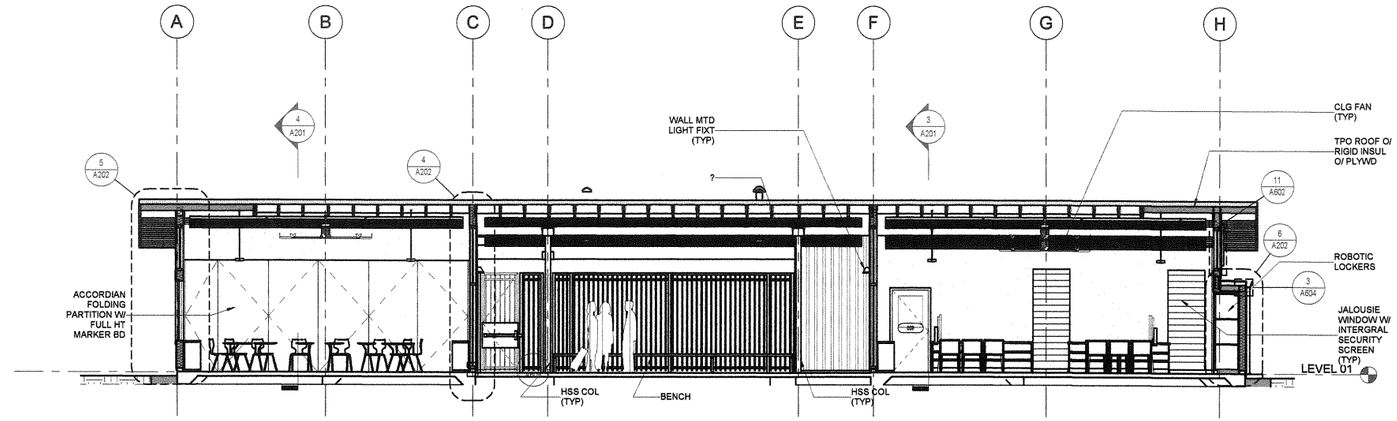
DEPARTMENT OF EDUCATION
STATE OF HAWAII

WAIMANALO INTERMEDIATE SCHOOL
STEM BUILDING
WAIMANALO, OAHU, HAWAII
TMK:4-1-009:012

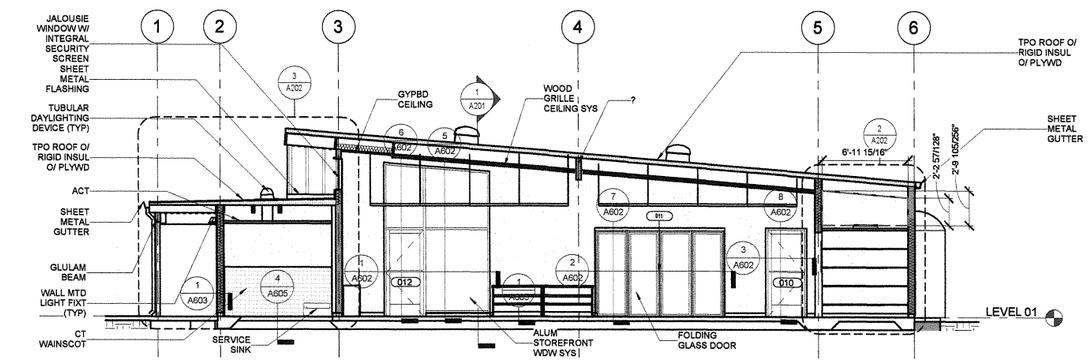
FLOOR PLANS

COLLABORATIVE STUDIO		DOE JOB NO.	DRAWING NO.
DESIGNED BY: CS	CHECKED BY: Checker	P81004-13	A103
DRAWN BY: Author	APPROVED BY: Approver	DATE 9/22/17	SHEET OF ___ SHTS.
SCALE: AS NOTED			

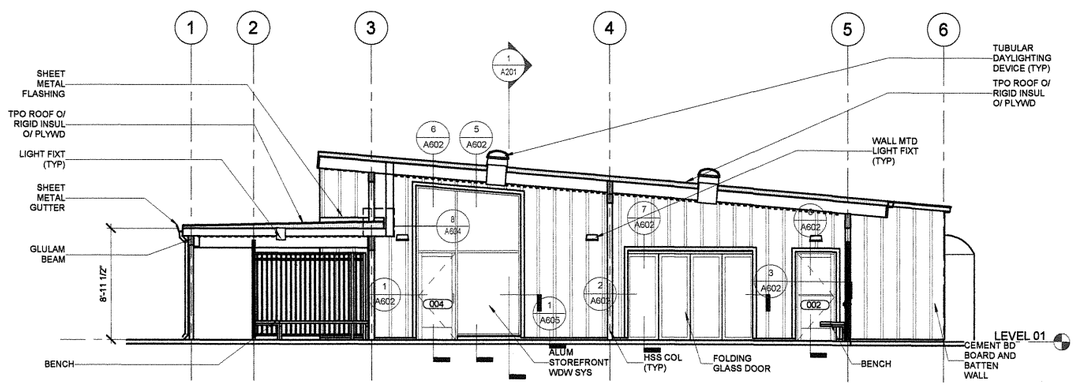
FILE ___ DRAWER ___ FOLDER ___



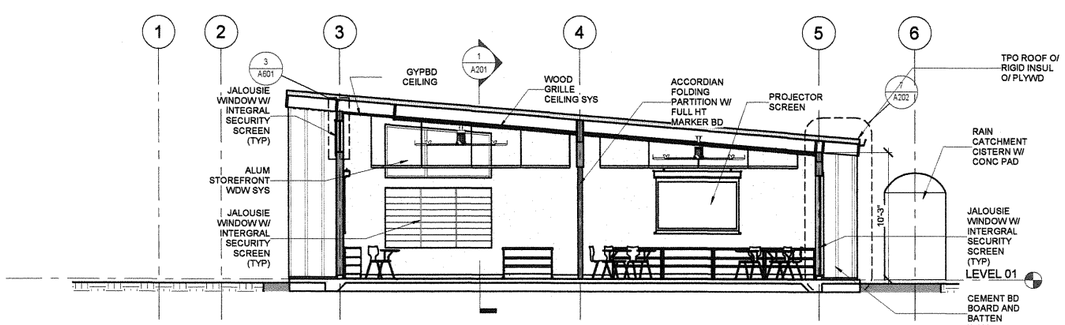
1 A201 NORTH-SOUTH SECTION
3/16" = 1'-0"



3 A201 EAST-WEST SECTION
3/16" = 1'-0"



2 A201 COVERED COURTYARD SECTION
3/16" = 1'-0"



4 A201 EAST-WEST SECTION
3/16" = 1'-0"

GRAPHIC SCALES 1"=60'-0" 0 30' 60' | 1/16"=1'-0" 0 4' 8' 16' | 1/8"=1'-0" 0 2' 4' 8' | 3/16"=1'-0" 0 1' 2' 4' | 1/4"=1'-0" 0 1' 2' 4' | 1/2"=1'-0" 0 1' 2' 4' | 3/4"=1'-0" 0 1' 2' 4' | 1-1/2"=1'-0" 0 6" 12" | 3"=1'-0" 0 3" 6" 12"

REVISION NO.	SYM.	DESCRIPTION	SHT___ OF___	DATE	APPROVED

Seal: CATHI L. SCHAR LICENSED PROFESSIONAL ARCHITECT No. 13620 HAWAII, U.S.A.

EXPIRATION DATE: 04.30.18

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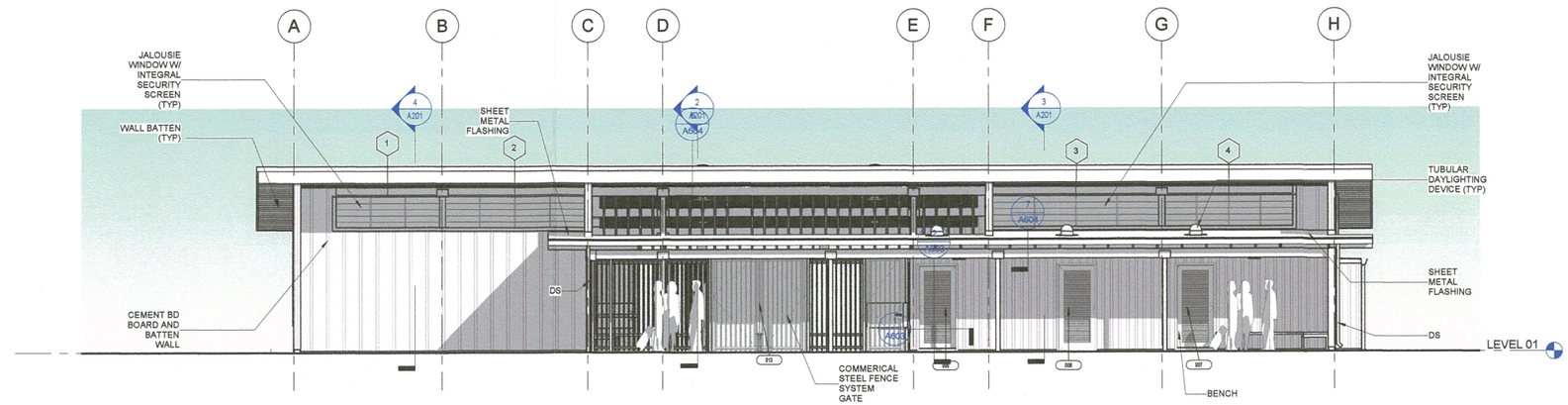
DEPARTMENT OF EDUCATION
STATE OF HAWAII

WAIMANALO INTERMEDIATE SCHOOL
STEM BUILDING
WAIMANALO, OAHU, HAWAII
TMK:4-1-009:012

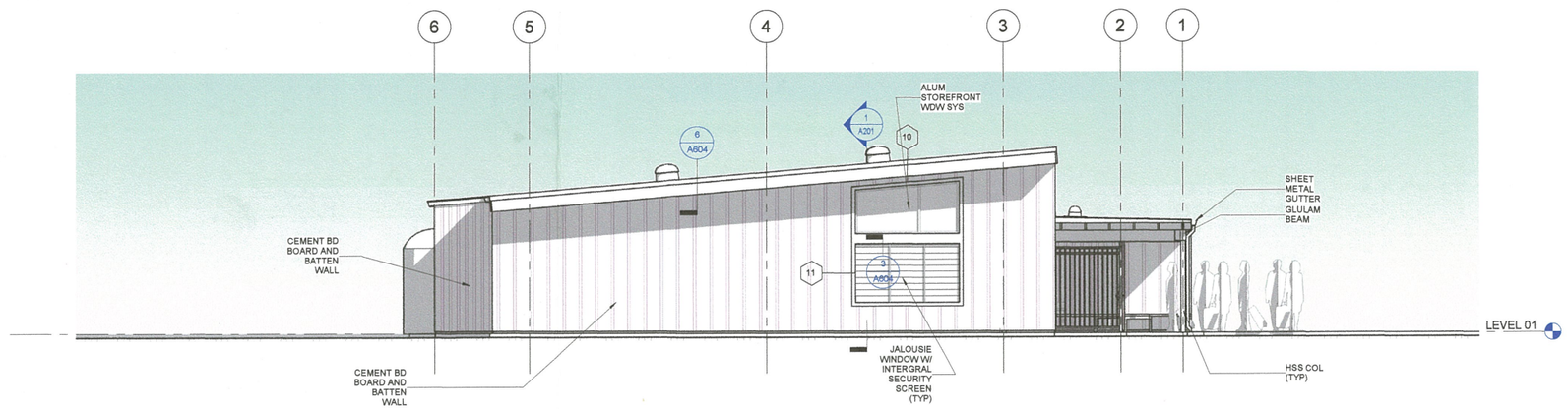
BUILDING SECTIONS

COLLABORATIVE STUDIO		DOE JOB NO.	DRAWING NO.
DESIGNED BY: CS	CHECKED BY: Checker	P81004-13	A201
DRAWN BY: Author	APPROVED BY: Approver	DATE 9/22/17	SHEET OF ___ SHTS.
SCALE: AS NOTED			

FILE _____ DRAWER _____ FOLDER _____



1 A401 WEST ELEVATION
3/16" = 1'-0"



2 A401 NORTH ELEVATION
3/16" = 1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT OF	DATE	APPROVED

Seal: CATHI L. SCHAF LICENSED PROFESSIONAL ARCHITECT No. 13620 HAWAII, U.S.A.

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DEPARTMENT OF EDUCATION
STATE OF HAWAII

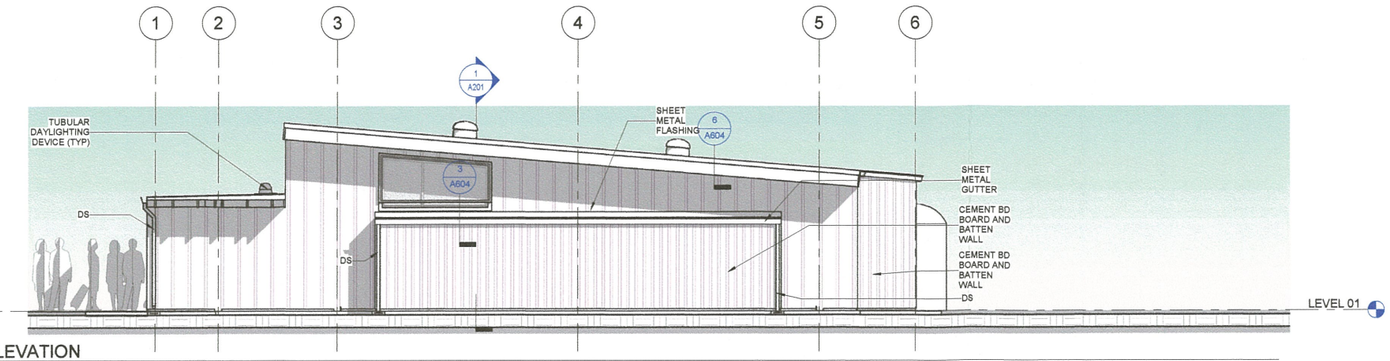
WAIMANALO INTERMEDIATE SCHOOL
STEM BUILDING
WAIMANALO, OAHU, HAWAII
TMK:4-1-009:012

ELEVATIONS

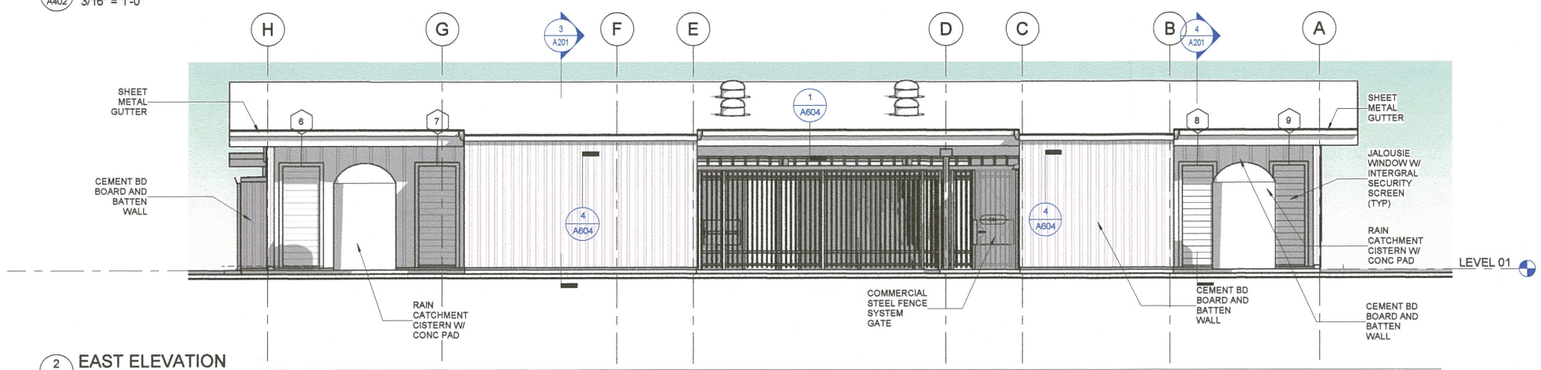
COLLABORATIVE STUDIO		DOE JOB NO.	DRAWING NO.
DESIGNED BY: CS	CHECKED BY: Checker	P81004-13	A401
DRAWN BY: Author	APPROVED BY: Approver	DATE 9/22/17	SHEET OF SHTS.
SCALE: AS NOTED			

GRAPHIC SCALES 1"=60'-0" 0 30' 60' | 1/16"=1'-0" 0 4' 8' 16' | 1/8"=1'-0" 0 2' 4' 8' | 3/16"=1'-0" 0 1' 2' 4' | 1/4"=1'-0" 0 1' 2' 4' | 1/2"=1'-0" 0 1' 2' 4' | 3/4"=1'-0" 0 1' 2' 4' | 1-1/2"=1'-0" 0 6" 12" | 3"=1'-0" 0 3" 6" 12"

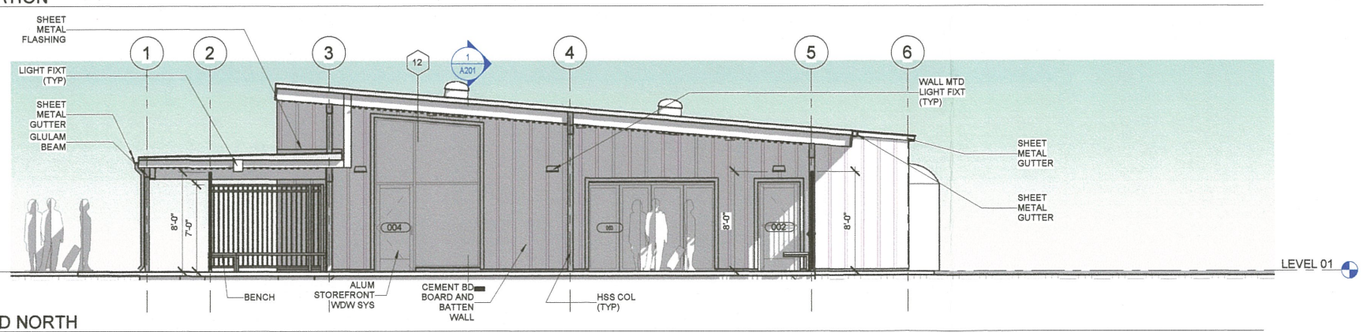
FILE _____ DRAWER _____ FOLDER _____



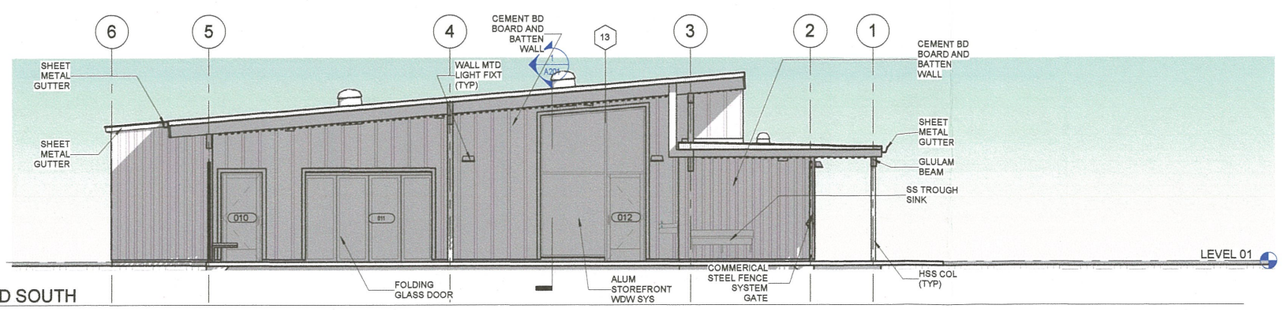
1 A402 SOUTH ELEVATION
3/16" = 1'-0"



2 A402 EAST ELEVATION
3/16" = 1'-0"



3 A402 COURTYARD NORTH
3/16" = 1'-0"



4 A402 COURTYARD SOUTH
3/16" = 1'-0"

GRAPHIC SCALES 1"=60'-0" 0 30' 60' | 1/16"=1'-0" 0 4' 8' 16' | 1/8"=1'-0" 0 2' 4' 8' | 3/16"=1'-0" 0 1' 2' 4' | 1/4"=1'-0" 0 1' 2' 4' | 1/2"=1'-0" 0 1' 2' 4' | 3/4"=1'-0" 0 1' 2' 4' | 1-1/2"=1'-0" 0 6" 12" | 3"=1'-0" 0 3" 6" 12"

REVISION NO.	SYM.	DESCRIPTION	SHT ___ OF ___	DATE	APPROVED

Seal: CATHI L. SCHAP LICENSED PROFESSIONAL ARCHITECT No. 13620 HAWAII, U.S.A.

EXPIRATION DATE: 04.30.18

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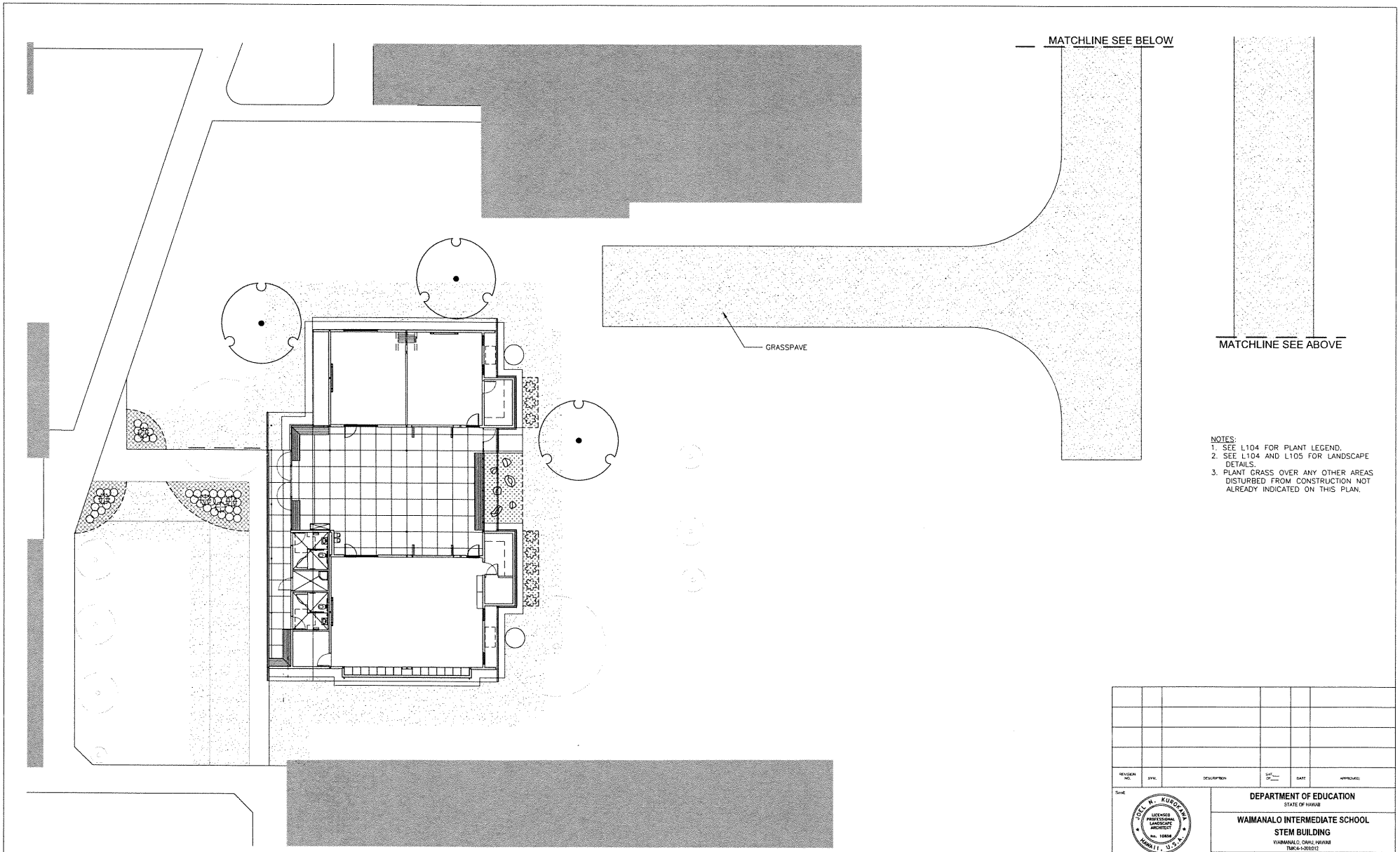
DEPARTMENT OF EDUCATION
STATE OF HAWAII

WAIMANALO INTERMEDIATE SCHOOL
STEM BUILDING
WAIMANALO, OAHU, HAWAII
TMK:4-1-009:012

ELEVATIONS

COLLABORATIVE STUDIO		DOE JOB NO.	DRAWING NO.
DESIGNED BY: CS	CHECKED BY: Checker	P81004-13	A402
DRAWN BY: Author	APPROVED BY: Approver	DATE 9/22/17	SHEET OF ___ SHTS.
SCALE: AS NOTED			

FILE ___ DRAWER ___ FOLDER ___



NOTES:
1. SEE L104 FOR PLANT LEGEND.
2. SEE L104 AND L105 FOR LANDSCAPE DETAILS.
3. PLANT GRASS OVER ANY OTHER AREAS DISTURBED FROM CONSTRUCTION NOT ALREADY INDICATED ON THIS PLAN.

1 / L102 LANDSCAPE PLAN
1" = 10'-0"

10' 0 10'

GRAPHIC SCALES 1"=60'-0" 0 30' 60' | 1/16"=1'-0" 0 4' 8' 16' | 1/8"=1'-0" 0 2' 4' 8' | 3/16"=1'-0" 0 1' 2' 4' | 1/4"=1'-0" 0 1' 2' 4' | 1/2"=1'-0" 0 1' 2' 4' | 3/4"=1'-0" 0 1' 2' 4' | 1-1/2"=1'-0" 0 6" 12" | 3"=1'-0" 0 3' 6' 12"

REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED:

Seal:

JOEL N. KUROSAWA
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 10858
HAWAII, U.S.A.

EXPIRATION DATE 04-30-18

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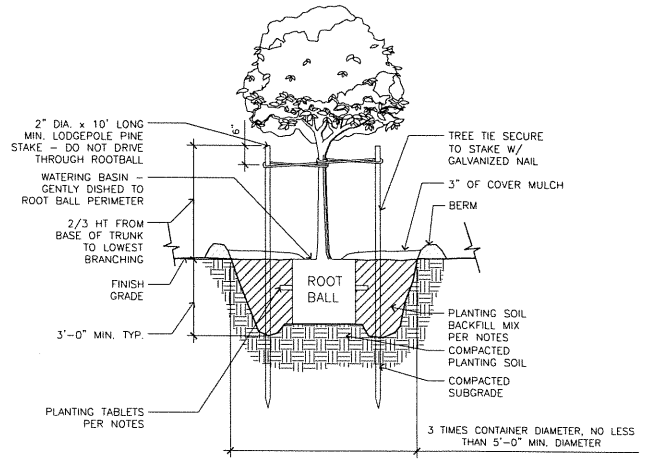
DEPARTMENT OF EDUCATION
STATE OF HAWAII

WAIMANALO INTERMEDIATE SCHOOL
STEM BUILDING
WAIMANALO, OAHU, HAWAII
TMK:4-1-005012

LANDSCAPE PLAN

COLLABORATIVE STUDIO		DOE JOB NO.	DRAWING NO.
DESIGNED BY: KS	CHECKED BY: JK	P81004-13	L102
DRAWN BY: KS	APPROVED BY: JK	DATE: 9/22/17	SHEET OF SHTS.
SCALE: AS NOTED			

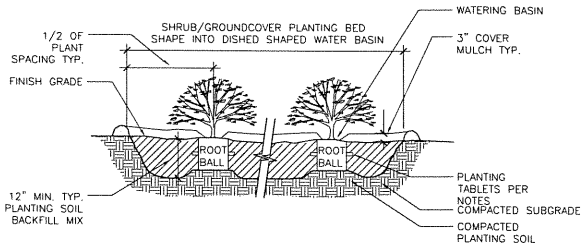
FILE _____ DRAWER _____ FOLDER _____



NOTES: FOR TREES IN LAWN, PRIOR TO PROJECT COMPLETION REMOVE WATERING BASIN AND REPLENISH COVER MULCH RING, TYP.

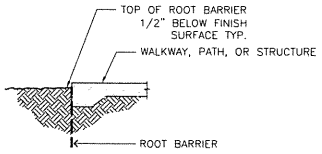
1 TREE PLANTING AND STAKING DETAIL

SCALE: NTS



2 SHRUB & GROUNDCOVER PLANTING AREA DETAIL

SCALE: NTS

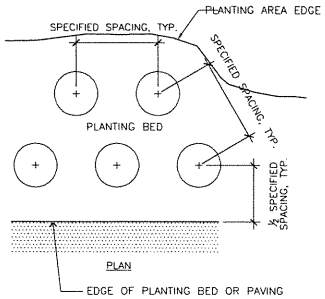


NOTES:

1. SEE PLANTING PLANS FOR LOCATIONS
2. INSTALL PER MANUFACTURER'S INSTRUCTIONS

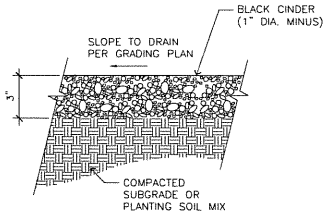
3 ROOT BARRIER DETAIL

SCALE: NTS



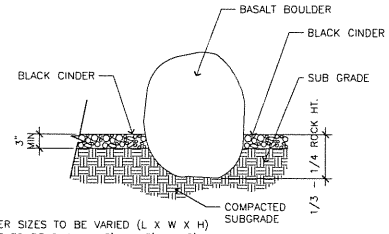
4 SHRUB & GROUND COVER SPACING DETAIL

SCALE: NTS



5 BLACK CINDER MULCH DETAIL

SCALE: 3" = 1'–0"



NOTES:

1. BOULDER SIZES TO BE VARIED (L X W X H)
   - 1/3 TO BE SMALL, 1.5' X 1.5' X 1.5'
   - 1/3 TO BE MEDIUM, 2.5' X 2' X 2'
   - 1/3 TO BE LARGE, 3' X 2' X 3'
   SET ASIDE IN FIELD FOR FINAL SELECTION BY CONTRACTING OFFICER
2. BURY 1/3 – 1/4 ROCK HEIGHT BELOW FINISH GRADE

6 BASALT BOULDER DETAIL

SCALE: AS NOTED

PLANT SCHEDULE

TREES	QTY	COMMON NAME	BOTANICAL NAME	SIZE
	3	TRUE KOU	CORDIA SUBCORDATA	25 GAL., 2"CAL., 8'HT., 4' SPD. MIN.

SHRUBS	QTY	COMMON NAME	BOTANICAL NAME	SIZE
	37	AHINAHINA	ARTEMISIA AUSTRALIS	1 GAL
	5	KULU'I	NOTOTRICHIUM SANDWICENSE	5 GAL., 24" HT., 18"SPD. MIN.
	8	SUGAR CANE	SACCHARUM OFFICINARUM	15 GAL

GROUND COVERS	QTY	COMMON NAME	BOTANICAL NAME	CONT
	10,230 SF	BERMUDA GRASS	CYNODON DACTYLON	HYDROSEED
	226 SF	NEHE	WOLLASTONIA INTEGRIFOLIA	6" POT, 12" O.C.
	295 SF	BLACK CINDER		3" DEPTH
	6	BOULDERS		
	127 LF	METAL EDGING		
	18 LF	ROOT BARRIER		

PLANTING NOTES:

1. REFER TO "LANDSCAPE PLANTING" SECTION 02480 PRIOR TO THE START OF WORK. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL MATERIALS, SCHEDULING, PRODUCTS, WARRANTIES AND METHODS FOR EXECUTION OF WORK WHICH MAY NOT BE INDICATED WITHIN THE DRAWINGS.
2. PROVIDE A 2" LAYER OF ORGANIC SOIL CONDITIONER OVER ALL PLANTING AREAS (SEE SPECIFICATIONS).
3. BACKFILL MIX SHALL CONSIST OF THREE (3) PARTS OF AMENDED IMPORTED PLANTING SOIL TO ONE (1) PART ORGANIC SOIL CONDITIONER (SEE SPECIFICATIONS). ADD ONE (1) POUND OF 10–30–10 FERTILIZER TO ONE (1) CUBIC YARD OF BACKFILL MIX. MIX THOROUGHLY ON PROJECT SITE PRIOR TO ANY PLANTING OPERATIONS.
4. PLANTING TABLETS FOR TREES AND SHRUBS SHALL BE AS FOLLOWS:

A) FIELD SPECIMEN	12 TABLETS
B) 25 GALLON	8 TABLETS
C) 15 GALLON	5 TABLETS
D) 5 GALLON	3 TABLETS
E) 3 GALLON	2 TABLETS
F) 1 GALLON	1 TABLET

USE SLOW RELEASE FERTILIZER TABLETS 20–10–5, 21 GRAM SIZE.

5. GROUNDCOVER SHALL BE PLANTED UNDER ALL TREES AND SHRUBS (UNLESS OTHERWISE NOTED ON PLANS).

REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED

Seal: JOCE N. KUROKAWA LICENSED PROFESSIONAL LANDSCAPE ARCHITECT No. 10858 HAWAII, U.S.A.

EXPIRATION DATE 04-30-18

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DEPARTMENT OF EDUCATION
STATE OF HAWAII

WAIMANALO INTERMEDIATE SCHOOL
STEM BUILDING
WAIMANALO, OAHU, HAWAII
TMK(4-1-30)16/12

PLANT SCHEDULE AND LANDSCAPE DETAILS

COLLABORATIVE STUDIO		DGE JOB NO.	DRAWING NO.
DESIGNED BY: KS	CHECKED BY: JK	PS1204-13	L104
DRAWN BY: KS	APPROVED BY: JK	DATE 9/22/17	SHEET
SCALE: AS NOTED			OF SHTS.

FILE _____ DRAWER _____ FOLDER _____

GRAPHIC SCALES 1"=60'-0" 0 30' 60' 1/16"=1'-0" 0 4' 8' 16' 1/8"=1'-0" 0 2' 4' 8' 3/16"=1'-0" 0 1' 2' 4' 1/4"=1'-0" 0 1' 2' 4' 1/2"=1'-0" 0 1' 2' 4' 3/4"=1'-0" 0 1' 2' 4' 1-1/2"=1'-0" 0 6' 12' 3"=1'-0" 0 3' 6' 12'

DESCRIPTION OF THE AFFECTED ENVIRONMENT 2

A. Existing Uses and Structures

The building site is an unfenced, outdoor asphalt play court with two basketball backboards surrounded by a grass lawn and some trees (See Photographs 1 and 2). Several school buildings enclose the space on three sides. The area is used during recess and P.E. classes but for no other school activity.

Photograph 1. South Facing View of the Play Court. Building E in the Background.

Photograph 2. North Facing View of the Play Court. From Left to Right Buildings C, A, and Waimānalo Public Library in the Background.

Improvements include a drain inlet in the southwest corner and drinking water faucets in the northwest corner.

Waimānalo Elementary and Intermediate School comprises part of the Kailua-Kalaheo Complex Area of the Windward O'ahu School District. The Kailua Complex consists of the following public schools: Enchanted Lakes Elementary, Ka'elepulu Elementary, Keolu Elementary, Maunawili Elementary, Pope Elementary, and Waimānalo Elementary and Intermediate, and Kailua High Schools. Elementary schools 'funnel' students to intermediate schools which in turn 'funnel' students to high schools

Twenty permanent structures are arrayed over the campus (See Table 2) and all are single-level buildings. The earliest structure on record was built in 1950 (Building C) with seven others built by 1958. The last two permanent structures---the Administration and Library---were built in 1976. Almost all the buildings are named after a flower. The naming was initiated by a student (or students) many years ago but the names are still used today.

Table 2. Permanent Structures

Building	Name	Function	SF	Year Built
A	Ilima	Admin	4,450	1976
B	Plumeria	Classroom	2,895	1961
C	Water Lilies	Classroom	3,313	1950
D	Night Blooming Cereus	Classroom	3,959	1952
E	Lehua	Classroom	4,592	1953
E/ER	Pink Flower			
J	Honohono	Kitchen	9,199	1958
J/RR	Angel's Trumpet			
K	Ginger	Classroom	2,700	1955
L	Hibiscus	Classroom	3,720	1957
M	Gardenia	Classroom	4,806	1955
M/RR	Bromeliad			
N	Puakenikeni	Classroom	5,037	1955
O	Woodrose	Classroom	4,456	1961
Q	Orchid	Classroom	11,535	1962
S	Protea	Library	8,317	1976
T	Bougainvillea	Toilet	1,799	1972
U	Heliconia	Classroom	4,722	1972
V	Bird of Paradise	Classroom	3,288	1972
W		Classroom	5,541	1961

Source: DOE Facilities Inventory System Comprehensive Report, 2006.
Gerald Park Urban Planner, Site Visit, 2017.

The School year typically commences in early August and ends at the end of May. For school year 2016-2017, the Department of Education (2016) reported a school enrollment of 828 students in grades Kindergarten to 8th Grade including Special Education students. The design enrollment is 850 students.

Source: Google Maps 2017 Aerial & Gerald Park

Figure 3
Campus Map
Waimānalo Elementary and Intermediate School STEM Building

Gerald Park
Urban Planner
June 2017

LINEAL SCALE (FEET)
60' 30' 0 30' 60' 120'

NORTH

Waimānalo, District of Ko'olau Poko, O'ahu, Hawai'i

Department of Education, State of Hawai'i

828 students in grades Kindergarten to 8th Grade including Special Education students. The design enrollment is 850 students.

School staffing includes 2 Administrators, 22 Classified Staff Members, and 42 Teachers.

School bus service is provided. Buses usually drop off students at 7:20 am and pick them up at 2:05 pm.

A-Plus and Uplink after school programs are provided from 2:30 to 5:00 pm.

Solid waste (non-food) is collected by a State contracted private hauler. Plastic bottles and paper products are collected in separate trash receptacles for recycling.

B. Climate

The climate of Waimānalo can be characterized as mild and dry throughout the year. Temperatures are indicative of Hawaii's semi-tropical climate with temperatures averaging 80^0 F with lows in the mid 60s during the winter months to highs near 90^0 F from May to September. Annual rainfall averages less than 40 inches (Atlas of Hawaii, 1998) with more than half the rainfall occurring during the winter months. The prevailing winds, as elsewhere in Hawaii, are the northeast trade winds.

C. Topography

The site has been graded, paved, and landscaped. Ground elevation averages 22 to 24 feet above mean sea level. Although relatively flat, the terrain slopes slightly from *mauka* to *makai*.

D. Soils

Two clay soils are "layered" north to south over the width of the property (Soil Conservation Service, 1972). In plan view, Ewa silty clay loam (Code: EmA) comprises the northern most layer and Malama stony silty clay loam (Code: MnC) the southern layer.

Ewa clay which comprises about 70% of the soil is a shallow soil with a depth to limestone of about 20 to 50 inches. Runoff is very slow and the erosion hazard is no more than slight. Mamala stony silty clay also is a shallow soil with a depth to coral limestone or calcareous sand of 8 to 20 inches. The soil is moderately permeable, runoff is slow to medium slow, and the erosion hazard is slight to moderate. This soil makes up about 25% of the site soils.

A third soil type, Haleiwa silty clay (HeB) sparingly occurs in the southeastern corner.

Extensive site improvements over time have blurred the distinction between soil types. More than likely the surface soil is a mixture of the prevailing soil types and imported engineered fill and topsoil.

E. Water Resources

1. Surface Water

There are no surface water bodies on the school campus.

USGS maps depict a stream paralleling the southern property boundary. A stream used to be there but is no longer.

2. Groundwater

According to Mink and Lau (See Table 3), the Waimānalo aquifer system of the Windward aquifer sector underlies Waimānalo. Groundwater in the Windward aquifer, (Aquifer/Status Code: 30604212) is high level (not in contact with seawater) unconfined fresh water (where the water table is in the upper surface of the aquifer) segmented by dike compartments. Based on its groundwater status code (1111), the aquifer is currently used as a source of drinking water (salinity is <250 mg/l Cl^{-}), irreplaceable, and highly vulnerable to contamination.

Table 3. Aquifer Classification System

Aquifer Code	**30604212**
Island Code	3 - Oahu
Aquifer Sector	06 - Windward
Aquifer System	04 - Waimānalo
Aquifer Type, Hydrogeology	2 - High Level
Aquifer Condition	1 - Unconfined
Aquifer Type, Geology	2 - Dike
Status Code	**11111**
Developmental Stage	1 - Currently Used
Utility	1 - Drinking
Salinity (in mg/l Cl-)	1 – Fresh (<250)
Uniqueness	1 - Irreplaceable
Vulnerability to Contamination	1 - High

Source: Mink and Lau, 1990.

The estimated sustainable yield of the Waimānalo aquifer is 12 million gallons per day. All aquifer sectors on the island of Oahu with the exception of the Wai'anae sector are considered to be ground water management areas (Wilson Okamoto Corporation, 2008).

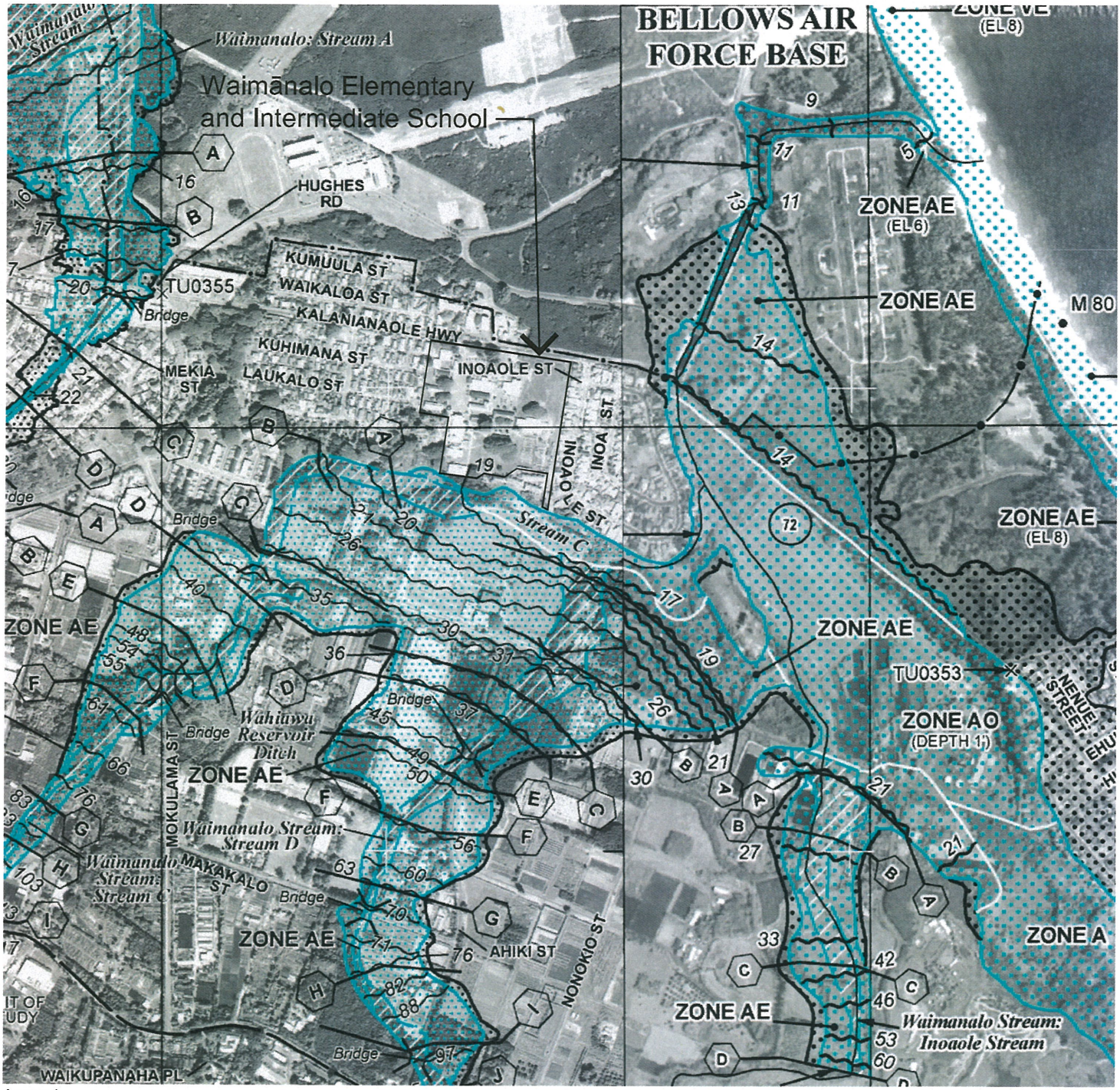
Board of Water Supply Waimānalo Wells I and II are located in the Ko'olau Range about two miles south of the School.

F. Flood Hazard

The Flood Insurance Rate Map ("FIRM") for this section of Waimānalo places almost the entire School site in Other Areas Zone "X" which is defined as "areas determined to be outside the 0.2% annual chance flood (Federal Emergency Management Agency, 2014)".

A small section in the southwest corner is designated a "Special Flood Hazard Area Subject to Inundation by the 1% Annual Chance Flood", Flood Zone A01' where the average flood depth is 1 foot.

Flood hazard areas and designations are shown as Figure 4.



Legend

Special Flood Hazard Zone Subject to Inundation by the 1% Annual Chance Flood

Zone A — No Base Flood Elevations Determined.

Zone AE — Base Flood Elevation Determined.

Zone VE — Coastal Flood Zone with Velocity Hazard (Wave Action); Base Flood Elevations Determined.

Floodway Areas in Zone AE

Other Flood Areas

Zone X — Areas of 0.2% Annual Chance Flood; Areas of 1% Annual Chance Flood with Average Depths of Less than 1 Foot or with Drainage Areas Less than 1 Square Mile; and Areas Protected by Levees from 1% Annual Chance Flood.

Other Areas

Zone X — Areas Determined to be Outside the 0.2% Annual Chance Floodplain.

Source: Federal Emergency Management Agency Flood Insurance Rate Map, Map Number 15003C0380H & 15003C0385G Date: Nov. 5, 2014.

LINEAL SCALE (FEET) 500 250 0 250 500 1000

NORTH

Gerald Park
Urban Planner
June 2017

Figure 4
FIRM Map
Waimānalo Elementary and Intermediate School STEM Building

Waimānalo, District of Ko'olau Poko, O'ahu, Hawai'i

Department of Education, State of Hawai'i

G. Biological Resources

The play court and adjoining area is sparsely vegetated. A grass lawn surrounds the play court with royal poinciana and kukui trees arrayed around the perimeter. A stand of crown flower faces the court on its south side. Plumeria, ti, croton, and hibiscus are planted next to adjoining buildings and broad canopied monkey pod shade a grassy knoll beyond (south) the play court. Plant material is common to Hawai'i and none are considered rare, threatened, or endangered.

Chirping birds were heard but not seen. Cattle egret and a feral rooster were observed on the School grounds but not at the building site.

H. Archaeological Resources

Cultural Surveys Hawaii (2017) conducted a Literature Review / Field Inspection for two locations proposed for the STEM Building.

The consulting archaeologist concluded "the vicinity of the central STEM Building location and the southeast STEM Building location appear to have been extensively graded of long standing as part of the school grounds. No historic properties were observed."

I. Cultural Resources

A description of cultural resources is found in the Archaeological Literature Review and Field Inspection Report in Appendix A. Excerpts from the Report and edited/condensed for this section.

- Traditional accounts present some generally recurring themes about Waimānalo including the scarcity of water, except for small springs and Waimānalo Stream; the abundance of food crops along Waimānalo Stream; the broad reef and good fishing resources in the ocean fronting Waimānalo; and the somewhat isolated nature of Waimānalo, especially in terms of land routes, but with a sandy beach frontage allowing easy access by sea.

- It is said the coastal area of central Waimānalo, *makai* (seaward) of the current project area, was named 'Āpuakea or Fair 'Āpua, for the maiden "whose skin was very fair and whose behavior was so loveable that the people named the place for her and for her fair skin". The ancient village of Kapu'a, the setting of the 'Āpuakea story, was also said to have been the location of the legendary Muliwai'ōlena Stream:

- After Kamehameha's conquest of O'ahu and his division of the island among his chiefs, Waimānalo was apparently retained as Kamehameha's personal property. This seems to be the case as in 1845, Kamehameha III, Kauikeaouli, who had "inherited" the land as a son of Kamehameha I, claimed the *ahupua'a* of Waimānalo "to be the private lands of his Majesty Kamehameha III, to have and to hold to himself, his heirs and successors, forever; and said lands shall be regulated and disposed of according to his Royal will and pleasure, subject only to the rights of tenants".

- In 1828, Englishman Thomas Cummins arrived in Hawai'i. Soon after, he married the High Chiefess Kaumakaokane, a relative of Kamehameha I, who provided Cummins

with connections to the throne. Cummins received a Royal Patent to an estate of crown lands in Waimānalo in 1842 and in 1850, Kamehameha III leased 6,970 acres of land in Waimānalo to Cummins for a period of 50 years at $350.00 per annum. Thomas Cummins and his son John A. Cummins then proceeded to turn Waimānalo into a large cattle and horse ranch. Cummins constructed a landing at Waimānalo Bay, as access to Waimānalo prior to the construction of the Nu'uanu Pali road was primarily by sea. A railroad line was also constructed to connect the landing to the Cummins Estate:

- In 1876, the Hawaiian Kingdom entered into a Reciprocity Treaty with the United States. This allowed the growing Hawaiian sugar industry a free market and the potential for great profits. One of the Chinese rice farmers, Tai Lee, began sugar cultivation on Cummins' Waimānalo lands. Eventually Tai Lee and other Chinese farmers cultivated up to 1,200 acres of cane in Waimānalo.

- John A. Cummins saw the potential of sugar production at Waimānalo. He organized the Waimanalo Sugar Company and began construction of a sugar mill in 1880 approximately 700 m west of the present project area. There was little development near the present project area in the early years of the Waimanalo Sugar Company. The Government Road at the time was slightly seaward of the present alignment of Kalaniana'ole Highway. In 1890, J. A. Cummins renegotiated his father's original lease on the Waimānalo lands for an additional 30 years, and sublet the lands to the Waimanalo Sugar Company. The Waimanalo Sugar Company continued to buy sugar from the Chinese farmers until ca. 1900, when the plantation began to do most of its own cultivation.

- The Waimanalo Sugar Company continued operations into the 1940s and ceased operations in 1947. Following the closure of the Waimanalo Sugar Company, the plantation's water license and irrigation ditch system reverted to the Territory of Hawaii.

Waimānalo Elementary and Intermediate School was located in sugar cane fields cultivated by Waimanalo Sugar Cane Company.

- The Waimanalo Military Reservation, including approximately 1,500 acres along the northern, coastal portion of Waimānalo, was established in 1917. Limited development and little activity occurred on the military reservation through the 1920s. In 1933, Waimanalo Military Reservation was renamed Bellows Field. Bellows Field then consisted of an infantry and artillery training area, also including a runway for the Air Corps. With the onset of World War II, even more accelerated development occurred at Bellows Field, which became a permanent military post in 1941. Following World War II, activity at Bellows Field declined with much of the area only being used for military recreational purposes and as an emergency landing field. Bellows Field was subsequently renamed Bellows Air Force Base and later, Bellows Air Force Station. Bellows Air Force Station continues to be used for military training and recreational purposes.

Waimānalo Elementary and Intermediate School is located across Kalanianaole Highway from Bellows Air Force Station.

- The Waimanalo Sugar Company sold its fee-simple land holdings and the remaining years of its lease of government-owned lands to the Waimanalo Agricultural Development Company. The Waimanalo Agricultural Development Company then sublet 1- to 20-acre farm lots and up to 150-acre pastoral lots to individual farmers in Waimānalo Valley for diversified agriculture. Following the expiration of the agricultural leases in 1953, the Territorial Government began selling approximately 9-acre agricultural parcels in the central valley, known as the Waimanalo Farm Lots subdivision.

Waimānalo Elementary and Intermediate School is located north of the Waimānalo Farm Lots Subdivision and separated from it by Waiamānalo District Park.

- The primary residential area in Waimānalo in the early 1900s was located in the vicinity of the Waimanalo Sugar Company's sugar mill. Waimanalo Village was established as housing for plantation workers and their families. In 1925, the first large-scale sale of Waimānalo lands to the public occurred with the establishment of the Waimanalo Beach Lots subdivision. The subdivision, located 900 m southeast of the present project area, included 266 lots on 90 acres of land (Bartholomew and Associates 1959:16). Kalaniana'ole Highway, which opened in 1924 and greatly improved transportation to Waimānalo.

- Additional residential development occurred in the coastal portion of central Waimānalo with the establishment of Waimanalo Homestead by the Hawaiian Homes Commission in 1925. Qualified homesteaders with 50% or more Hawaiian blood were awarded residential lots located inland of Kalaniana'ole Highway, in the vicinity of Waimanalo Landing. In modern times, additional residential development has occurred in the Waimanalo Village, Waimanalo Beach Lots, and Waimanalo Hawaiian Homelands subdivisions.

J. Land Use Controls

The State Land Use Commission under the authority of Chapter 205, Hawai'i Revised Statutes classifies all land in the State of Hawaii as Agricultural, Conservation, Rural, and Urban. Uses in the Agricultural District are regulated by the Land Use Commission; uses in the Conservation District by the Board of Land and Natural Resources, uses in the Rural District by the Land Use Commission, and uses in the Urban District by the respective county government. The zoning powers of the respective counties also govern uses in other than the Conservation District.

- Most developed areas in Waimānalo are classified Urban or Agricultural by the State Land Use Commission. Waimānalo Elementary and Intermediate School is classified Urban and bounded by Urban districts on all sides.

Land use at Waimānalo Elementary and Intermediate Elementary School is under the authority of the City and County of Honolulu and its applicable plans, ordinances, and regulations. City land use policies and controls for O'ahu are vertically aligned or tiered for managing growth and land uses beginning with the General Plan for the City and County of Honolulu ("General Plan"), community development plans and sustainable community plans, and zoning. Special districts and special management area rules

provide supplementary controls for defined areas where man-made features and natural resources should be protected and managed.

- The General Plan for the City and County of Honolulu ("General Plan") is the first tier. It sets forth broad objectives and policies in eleven functional areas such as Economic Activity, Natural Environment, Energy, Physical Development and Urban Design, and Public Safety. The Population component and its objectives and policies are key to managing growth. The component establishes a population distribution pattern for eight geographic regions comprising the county. Each region has an upper and lower limit (percentage) of the island wide population for a targeted year (currently 2025). The general plan also includes General Plan Development Pattern map depicting the eight districts and the desired development pattern for and within the respective district.

Waimānalo is part of the windward region of the island and the development pattern is to maintain developed areas within the region as "Rural".

Development Plans or *Sustainable* Communities Plans prepared for the eight geographic regions in the County comprise the second tier. Although encompassing eight regions where each area's values, vision, and policies for accommodating growth are different, the plans collectively support the General Plan. The Koolau Poko *Sustainable* Communities Plan (2000) 1) describes the role of Koolau Poko in maintaining the General Plan pattern of development for the urban fringe and rural areas, 2) articulates a vision for the District's future shaped around two concepts: protection of natural, scenic, cultural, historic, and agricultural resources and improving and replacing aging infrastructure, as needed; 3) prescribes policies, planning principles, and guidelines for land use and infrastructure, and 4) identifies measures for implementing the plan.

The Ko'olau Poko *Sustainable* Communities Plan reaffirms the Rural designation of the General Plan. The Plan acknowledges that growth will take place and establishes a Community Growth Boundary spanning the entire district. The boundary identifies areas where growth and infill can occur (inside the boundary) and areas where agriculture, open space, and natural resources should be maintained and preserved (areas outside the boundary).

- Waimānalo Elementary and Intermediate School is inside the Community Growth Boundary.
- Waimānalo Elementary and Intermediate School is designated Institutional on the Ko'olau Poko Sustainable Communities Plan (Land Use Map A-2)

The Plan also posits land use policies and guidelines applicable to all public schools in the Ko'olau Poko district. Applicable policies for the proposed project are:

- Provide and maintain quality school facilities that serve the needs of the community
- Integrate school facilities with other community uses.

[Note: The Ko'olau Poko Sustainable Communities Plan was amended on August 24, 2017 as Ordinance No. 17-42. This environmental assessment was prepared prior to the Communities Plan amendment.]

Zoning comprises the third tier of the City's land use management system. As shown on zoning maps for the county, land is zoned by use and density (for example AG-1 Restricted Agriculture with a minimum lot size of 5 acres). The Land Use Ordinance (which incorporates the zoning maps) prescribes the types of uses permitted in zoning districts and associated development standards. The LUO also establishes requirements for parking, specific use standards, signs, development in flood districts and special districts, and administration and enforcement procedures.

- The School property is zoned R-5 Residential (See Figure 5). Public uses and structures are permitted in the zoning district pursuant to Article 3, Table 21.3 Master Use Table of the Land Use Ordinance, City and County of Honolulu.

The School is outside the County delineated Special Management Area. The Special Management Area ("SMA") is defined as land extending inland from the shoreline supporting valuable coastal resources that need to be preserved, protected, and where possible restored. Development in the SMA is regulated by the City and County of Honolulu through Chapter 25, Special Management Area, Revised Ordinances of Honolulu.

K. Views

The Coastal View Study (Chu and Jones, 1987) places the School and adjoining areas in the Waimanalo Bay Viewshed, Section A Waimanalo from Wailea Point (at Lanikai on the north) to Waimanalo State Park (on the south). The Study describes the Viewshed thusly:

> "The coastal highway (Kalanianaole Highway) veers inland and roadway views are masked by thick strands of ironwoods and other natural vegetation. Although this vegetation prevents views of the ocean, it is a major contributing factor to the rural character of Waimanalo and helps to relieve the "corridor" effect that occurs along certain portions of the highway".

Significant coastal views and views of significant landforms from Kalanianaole Highway fronting the School are not identified.

L. Public Facilities and Services

The School fronts on approximately 800 feet of Kalanianaole Highway. The two-lane, two-way, undivided, paved surface street lies within an 80-foot right-of-way. The posted speed limit is 25 mph fronting the School. Street lights on the *mauka* side illuminate the roadway.

The road is without curbs and gutters but features a 4-foot wide asphalt concrete walkway on the *mauka* side of the right-of-way.

Two driveways provide one-way ingress / egress into the school's parking. Ingress is on the west end of the school and egress near the middle. A STOP sign controls egressing traffic entering Kalanianaole Highway. The School cafeteria is gained via Haunaukoi Street through an adjoining residential subdivision on the west.

Crosswalks are marked and signed on Kalanianaole Highway at the Waimānalo Health Clinic on the west and Inoa'ole Street on the east.

F-1

Waimānalo Elementary and Intermediate School

B-1
AG-2
R-5
Kumuula St.
Waikaloa St.
Moole St.
Kalanianaole Hwy.
Kuhimana St.
Laukalo St.
Haunaukoi St.
P-2
R-5
Kakaina St.
AG-2
AG-1
P-2
R-5
Inoaole St.
Inoa St.
P-2
Inoaole St.
R-5
AG-1
Hihimanu St.
AG-2
AG-1
Ahiki St.
R-5

Source: City & County of Honolulu, Department of Planning & Permitting, http://gis.hicentral.com/pubwebsite/ , Zoning Layer.

Legend

B-1	BUSINESS (NEIGHBORHOOD)
R-5	RESIDENTIAL (5,000 SF. LOT MINIMUM)
R-10	RESIDENTIAL (10,000 SF. LOT MINIMUM)
AG-1	AGRICULTURE (RESTRICTED)
AG-2	AGRICULTURE (GENERAL)
P-2	PRESERVATION (GENERAL)

LINEAL SCALE (FEET)
250 125 0 125 250 500

NORTH

Gerald Park
Urban Planner
June 2017

Figure 5
Zoning
Waimānalo Elementary and Intermediate School STEM Building

Waimānalo, District of Ko'olau Poko, O'ahu, Hawai'i

Department of Education, State of Hawai'i

Municipal bus routes 57 and 77 traverse Kalanianaole Highway in north and south directions. A covered bus shelter is located in front of the School for eastbound passengers and a bus bench is located opposite the shelter for westbound passengers.

Domestic water is provided from a Honolulu Board of Water Supply 12" main along Kalanianaole Highway through a 2" water meter. From the water meter potable water is distributed by the School's on-site distribution system. An application for water connection will be submitted to the Board of Water Supply during the design stage of the project.

The Waimānalo Wastewater Treatment Plant (WWTP) services the windward coast of O'ahu from Makapu'u to Waimānalo. Wastewater flows within the service area are conveyed to the WWTP via a 15-inch diameter vitrified clay pipe along Kalanianaole Highway.

Fire flow is provided through an 8" fire line from Kalanianaole Highway.

Electrical and telephone service are provided from the overhead distribution system on the *mauka* side of Kalanianaole Highway. Electrical distribution lines within the School are placed underground.

A single drain inlet was observed in the southwest corner of the building site.

Police protection originates from the Kailua Police Station in the town of Kailua about 10 miles away to the northwest. Fire protection is provided from the Waimānalo Fire Station across Kalanianaole Highway from the School.

Solid waste is collected by a state contracted refuse vendor. The School has a recycling program wherein plastic bottles, cans, and paper products are deposited into different bins.

Waimānalo District Park, a 25.3 city park on the south side of the School, provides facilities for passive and active recreation. Indoor activities are accommodated in a gymnasium (basketball and volleyball courts) and recreation building. Outdoor facilities include basketball and volleyball courts, tennis courts, a baseball field, softball field, multi-purpose football/soccer field, comfort station, and parking (Department of Parks and Recreation, 1997).

Three beach parks on the Waimānalo coastline---Bellows Field Beach Park, Waimānalo Bay Beach Park, and Waimānalo Beach Park---provide about 167 acres of ocean and land based recreational opportunities for residents and visitors.

SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS AND MEASURES TO MITIGATE ADVERSE EFFECTS 3

The scope of the project was discussed with the consulting architect, members of the design team, and staff of the Facilities Development Branch, Department of Education. State and County agencies were contacted for information relative to their areas of expertise. Time was spent in the field noting conditions of the building site and in the vicinity of the school. From the discussions and field investigations, existing conditions and features that could be affected by or affect the project were identified. These influencing conditions are:

- There are 20 permanent structures on campus with the first one built in 1950;
- There are no surface water bodies on campus;
- The School is not in a flood hazard zone susceptible to flooding;
- There are no rare, threatened, or endangered flora and fauna on the premises;
- Archaeological and cultural features were not observed on the premises;
- The School is more than 50 years old and some buildings may qualify as historic property;
- The on-site water and wastewater systems are adequate to service the STM building;

The building site is an existing asphalt covered play court surrounded by a grass lawn both of which are on flat terrain. A few trees grow near the court as does a stand of crown flower on the east. Buildings E and the Waimānalo Public Library are within 30 feet and Buildings C and D about 70 feet of the STM building.

A. Short-term Impacts

Construction will temporarily affect ambient air quality. Site work activities will raise fugitive dust that can settle in adjoining areas. Site work will be limited to the area of new construction and this should aid in dust control. The general contractor will employ on and off-site dust control measures to prevent work site and construction equipment and activities from becoming significant dust generators. Control measures shall comply with Chapter 60.1, Air Pollution Control, Title 11, State Department of Health (and revisions thereto).

Most construction equipment and vehicles are diesel powered and emit exhaust emissions typically high in nitrogen dioxide and low in carbon monoxide. The Federal and State nitrogen dioxide standard ---100mg/m^3 per annum---which is an annual standard, is not likely to be exceeded during construction. Carbon dioxide emissions should be less than that generated by automobile traffic on adjoining streets. Aldehyde odors from diesel equipment may be detected but should be dispersed by the prevailing winds.

Like fugitive dust, construction noise cannot be avoided. Exposure to noise will vary by construction phase, the duration of each phase, and the type of equipment used during the different phases. Maximum sound levels in the range of 82-96 db(A) measured at 50 feet from the source would be generated by heavy machinery during site work. After site work is completed, reductions in sound levels, frequency, and duration can be expected.

Schools are considered noise sensitive areas. Buildings C and D are about 70 feet away but their ends face the building site so noise should not be a problem. Buildings E and the Waimānalo Library are within 30 feet but their sides face the building site and noise will be

audible inside both buildings. All adjoining buildings are constructed of cement masonry unit walls which can effectively aid in noise mitigation but louver windows facing the work site will allow outside noise into the classroom. The contractor may erect plywood fencing around the building site to aid in noise attenuation and for public safety.

Community Noise Control regulations (Chapter 46 Noise Control for Oahu) establish maximum permissible sound levels for construction activities occurring within "acoustical" zoning districts. Based on the residential zoning for the site, the project is classified as a Class A zoning district for noise control purposes. The maximum permissible daytime (7 a.m. to 10 p.m.) sound level in the district is 70 dBA during day and night hours for stationary noise sources and equipment related to construction (Chapter 46, Community Noise Control, 1996). Any noise source that emits noise levels in excess of the maximum permissible sound levels cannot be operated without first obtaining a noise permit from the State Department of Health. Although the permit does not attenuate noise per se it regulates the hours during which excessive noise is allowed. The contractor will obtain and comply with conditions attached to the permit.

Site work will create opportunities for erosion (fugitive dust and suspended sediment in runoff). Grading impacts can be mitigated by adhering to approved grading/construction plans prepared pursuant to Chapter 14, Articles 13, 14, and 15 Revised Ordinances of Honolulu.

The City and County of Honolulu enacted Rules for Water Quality on August 16, 2017. The Rules provide standards for design, selection, and maintenance of best management practices (BMPs) to protect the City's drainage infrastructure and receiving waters from pollution attributable to "land disturbance, surface hardening, and land use activities" (from Rules, 2017). A Sediment and Erosion Control Plan detailing construction and post-construction BMPs will be prepared and submitted to the Department of Planning and Permitting for review and approval.

Site work will not exceed one acre thus a NPDES General Permit Authorizing Discharges of Storm Water Associated with Construction Activity will not be required from the State Department of Health.

Areas disturbed by construction will be restored to pre-construction conditions or better.

Construction debris will be hauled to a construction waste disposal site (landfill) in Nanākuli. Green waste will be hauled to the H-POWER plant at Campbell Industrial Park for incineration.

Historic properties were not observed on the school grounds thus impacts on archaeological features are not anticipated. The consulting archaeologists (2017), however, pointed out:

> "Although no historic properties were discovered during a previous study in the project area (Hunkin et.al 2010), the DOE wastewater system improvements at Waimanalo Elementary and Intermediate School, on–site archaeological monitoring was recommended for any future subsurface activities. This recommendation is based on the knowledge that the school is more than 50 years old and has the potential for historical subsurface remains associated with its early foundation. Additionally, given the high number of LCA awards in the vicinity of the project area, the schools' location near the coast, and the soil types underlying the campus, there

is a potential for both pre- and post-Contact cultural material deposits in a subsurface context with the campus grounds.

Early consultation with SHPD is recommended to gain resolution of any need for further archaeological study and to obtain a determination letter (as per HAR §13-275-3)."

The Literature Review/Field Inspection Report summarized traditional accounts of Waimanalo and its history of cattle ranching, sugar cane cultivation, military use, diversified agriculture, and residential activities. In the absence of historic property at the school in general and the building site specifically, the absence of archaeological features also apply to cultural resources.

Construction vehicles hauling workers and material will contribute to traffic on roads leading to Waimanalo and on Kalanianaole Highway fronting the school. Material deliveries will be scheduled to minimize impacts on local traffic. Material unloading will occur on or near the east side of building site so as not to interfere with on-campus vehicle circulation and promote student and worker safety.

Construction will not take place within the Kalanianaole Highway right-of-way thus traffic movement on the Highway should not be affected and a Traffic Management Plan does not seem necessary. If necessary, a flagman can be used for traffic control when large construction vehicles exit the School grounds.

B. Long-term Impacts

The new building will provide Waimānalo Elementary and Intermediate School a stand-alone dedicated facility for fostering its science, technology, and media curriculum. The project will directly benefit these programs and serve as a model of integrated and sustainable architectural and engineering design. General sustainable features disclosed in Section 1 of this assessment included energy efficient equipment, water management systems, lighting controls (natural and power), and post-construction stormwater management. In effect, the design of the building and its support systems are being tested and evaluated. It is anticipated that systems with positive impacts will be replicated in other public school buildings and those with not so positive impacts giving way to alternative systems.

The STM program will provide a place for learning and hands-on opportunities for students interested in science, technology, and media programs. One long-range goal of the Department of Education to provide students the skills for the 21st century workforce in the State of Hawai'i. The STM building and STM curriculum go hand in hand reinforcing the DOE commitment to achieving this desired educational goal.

The project is not anticipated to increase student enrollment. It is anticipated, however, that the new building may increase student interest in science, technology, and media programs.

Increases in water consumption and wastewater flow are not expected.

Impacts on air quality, acoustical quality, and water quality are not anticipated. Pollutant generating activities or uses are not associated with the building or uses.

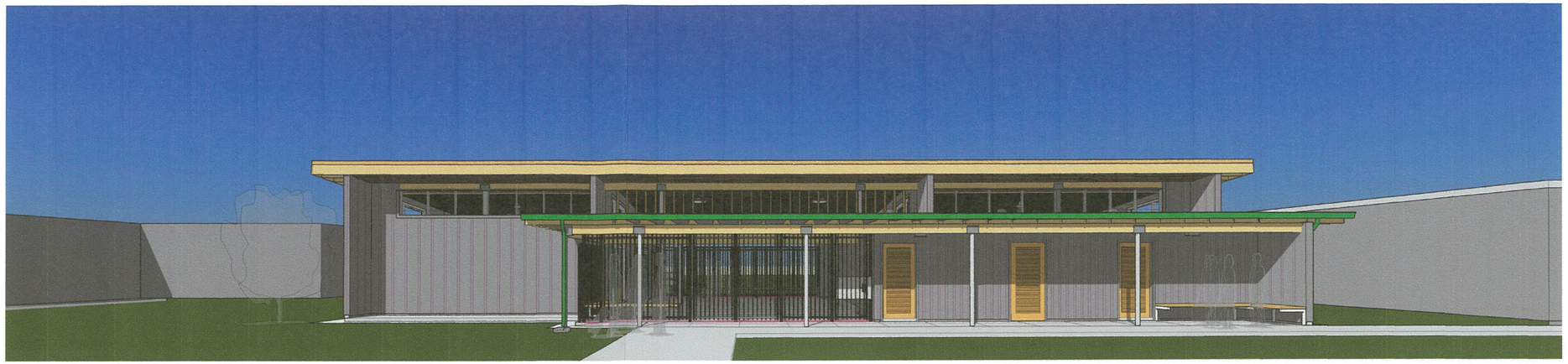
Solid waste will be collected and sorted by bins for recycling. Solid waste quantities have not been determined.

The building will contribute roof runoff to the surrounding environment. Runoff will flow into landscaped areas around the building for percolation into the ground (bio-filtration). In addition, ground areas will be sloped to convey surface flow away from the building into grass areas or retention swales. Flow may also be directed to the drain inlet in the southwest corner of the building site.

Native plants will be planted areas around the building. Said landscaping would be in keeping with the native plant names associated with the School buildings.

There are no identified significant views or view planes to and from the campus. The new building will present a new 'object' to be seen on campus and a building whose architectural design differs from existing school buildings. Building Perspectives are shown on Sheet A900. The STM building should not be visible from Kalanianaole Highway as it is behind and lower in height than the Waimānalo Public Library which faces the Highway.

The new building will not affect existing City and County of Honolulu land use controls for the property and School. Public uses and structures such as public schools are a permitted use in the residential zoning district under the current County zoning ordinance.



1 A900 MAIN ENTRANCE

2 A900 COURTYARD 2

3 A900 COURTYARD 3

4 A900 ENTRY 3

GRAPHIC SCALES 1"=60'-0" 0 30' 60' | 1/16"=1'-0" 0 4' 8' 16' | 1/8"=1'-0" 0 2' 4' 8' | 3/16"=1'-0" 0 1' 2' 4' | 1/4"=1'-0" 0 1' 2' 4' | 1/2"=1'-0" 0 1' 2' 4' | 3/4"=1'-0" 0 1' 2' 4' | 1-1/2"=1'-0" 0 6" 12" | 3"=1'-0" 0 3" 6" 12"

REVISION NO.	SYM.	DESCRIPTION	SHT ___ OF ___	DATE	APPROVED

Seal: CATHI L. SCHAR LICENSED PROFESSIONAL ARCHITECT No. 13820 HAWAII, U.S.A.

EXPIRATION DATE: 04.30.18

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

DEPARTMENT OF EDUCATION
STATE OF HAWAII

WAIMANALO INTERMEDIATE SCHOOL
STEM BUILDING
WAIMANALO, OAHU, HAWAII
TMK:4-1-009:012

3D PERSPECTIVE

COLLABORATIVE STUDIO		DOE JOB NO.	DRAWING NO.
DESIGNED BY: CS	CHECKED BY: Checker	P81004-13	A900
DRAWN BY: Author	APPROVED BY: Approver	DATE 9/22/17	SHEET OF ___ SHTS.
SCALE: AS NOTED			

FILE _____ DRAWER _____ FOLDER _____

ALTERNATIVES TO THE PROPOSED ACTION 4

A. No Action / Delay the Action

A No Action / Delay the Action alternative will maintain the status quo of the physical environment and preclude the occurrence of all impacts, short and long term, beneficial and adverse disclosed in this Assessment. A No Action alternative will not achieve the stated objectives of the project. Delaying the Action only suspends the project until such time that it can be constructed.

B. Alternative Location

A fenced play court near the southeastern end was identified as an alternate location. The court is located away from School buildings and construction at this location should have minimal environmental impacts. Construction activities and associated impacts would not differ substantially from that disclosed in this assessment. However, construction at this location would have less intrusive impacts (dust and noise) on classroom settings.

This location was dropped from consideration because the School desired a location near the center or campus, more accessible to students, and visible from the front of the campus. Potential acts of vandalism were a concern at this location.

PERMITS AND APPROVALS 5

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

State of Hawai'i

Department of Health

Variance from Pollution Control (Noise Permit)
Disability and Communication Access Board

Department of Land and Natural Resources

State Historic Preservation Division---Section 6E Historic Site Review

City and County of Honolulu

Department of Planning and Permitting

Building Permit for Building, Electrical, Plumbing, Sidewalk/Driveway and Demolition Work
Certificate of Occupancy
Grubbing, Grading, and Stockpiling Permit
Trenching Permit

Board of Water Supply

Building Permit
Construction Plan Review

Honolulu Fire Department

Fire Plans Review

AGENCIES AND ORGANIZATIONS CONSULTED TO BE CONSULTED IN THE ENVIRONMENTAL ASSESSMENT PROCESS 6

State of Hawai'i
- Department of Land and Natural Resources
  - Historic Preservation Division

City and County of Honolulu
- Board of Water Supply
- Department of Parks and Recreation
- Department of Planning and Permitting
- Police Department
- Fire Department

Others
- Hawaiian Electric Company, Inc.
- Waimānalo Neighborhood Board No. 32
- The Honorable Laura Thielen, 25th Senatorial District
- The Honorable Chris Lee, 51st Representative District
- The Honorable Ikaika Anderson, Honolulu City Council
- Waimānalo Public Library (Placement)

DETERMINATION OF SIGNIFICANCE 7

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

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

   Natural and cultural resources will not be "lost" since none are present on the building site.

   It is a standard construction practice that all who perform site work are informed of proper protocols if burials or historical features are unearthed. If burials or features are unearthed, work in the immediate area will cease and historic authorities notified for disposition of the finds per State law.

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

   The proposed STEM building and the existing play court /lawn are both beneficial uses of the affected environment. It was determined, however, that the benefits of an educational use outweigh the benefits of a recreational use at this location.

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

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

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

   The project will not substantially affect the economic or social welfare of the State. In the long-term the STEM Building will provide a facility to foster student learning, expose students to new and innovative curricula, and promote education in general.

5) **Substantially affects public health;**

   Public health will not be adversely affected during construction. Short-term environmental impacts in the form of fugitive dust, noise from construction equipment, and minor erosion can be expected. These impacts will be mitigated by measures described in this Assessment and a Grading Plan to be submitted for government approval.

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

Population changes and effects on public facilities are not anticipated as a result of the project.

7) **Involves a substantial degradation of environmental quality;**

Substantial degradation of environmental quality is not anticipated. The STEM building is less than 5,000 square feet and proposed in an area that has been disturbed by prior construction, an asphalt play court, and assorted landscaping.

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

The proposed action does not involve a commitment for a larger action. It does, however, involve a commitment for providing students a facility where they can engage and further their interest and gain skills in science, technology, and media production.

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

Rare, threatened or endangered flora and fauna are not found on the building site or on the school grounds.

10) **Detrimentally affects air or water quality or ambient noise levels;**

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

A Sediment and Erosion Control Plan will detail construction and post-construction Best Management Practices (BMPs) for protecting water quality.

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

Waimānalo Elementary and Intermediate School and thus the building site are not located in an environmentally sensitive area.

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

The School is neither identified as a visual resource nor located within scenic vistas or view planes identified in county or state plans.

13) **Requires substantial energy consumption.**

Substantial energy consumption is not anticipated. Energy efficient and energy saving systems and building design will aid in reducing energy use.

REFERENCES

Chu, Michael S. and Robert B. Jones. 1987. *Coastal View Study.* Prepared for City and County of Honolulu, Department of Land Utilization.

Cultural Surveys Hawai'i. March 2017. *Draft Archaeological Literature Review and Field Inspection for the Waimānalo Elementary and Intermediate School STEM Building Project, Waimānalo Ahupua'a, Ko'olaupoko District, O'ahu TMK: [1] 4-1-009:012*

Department of Education, State of Hawai'i. No Date. *Official Enrollment Count, SY 16-17.*

Department of General Planning, City and County of Honolulu. 1988 (As Amended). *General Plan Objectives and Policies.*

Department of Parks and Recreation. April 1997. *Index of O'ahu Parks and Facilities.*

Department of Planning and Permitting, City and County of Honolulu. December 2008. *Land Use Ordinance (As Amended).*

Department of Planning and Permitting, City and County of Honolulu. August 2000. *Ordinance No. 00-47 To Adopt the Development Plan for Koolaupoko of the City and County of Honolulu.*

Department of Geography, University of Hawai'i at Hilo. 1998. *Atlas of Hawai'i Third Edition.* University of Hawai'i Press. Honolulu.

Federal Emergency Management Agency. November 2014. *Flood Insurance Rate Map.* Community Panel No. 15003C0380H and 15003C0385G.

Mink, John F. and L. Stephen Lau. February 1990 Revised. *Aquifer Identification and Classification for O'ahu: Groundwater Protection Strategy for Hawai'i.* Water Resources Research Center, University of Hawaii at Manoa.

Park, Gerald Urban Planner. June 2017. *Field Observation.*

U.S. Department of Agriculture, Soil Conservation Service. August 1972. *Soil Survey Report for Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii.* In Cooperation with the University of Hawaii Agricultural Experiment Station.

APPENDIX A

Draft Archaeological Literature Review and Field Inspection for the Waimānalo Elementary and Intermediate School STEM Building Project, Waimānalo Ahupua'a, Ko'olaupoko District, O'ahu TMK: [1] 4-1-009:012