5986A & 5986B HALE ULUWEHI

Agriculture Facility and Greenhouse Renovation

WINDWARD COMMUNITY COLLEGE
45-720 KEAAHALA ROAD
KANEOHE, HAWAII 96744
TMK: 4-5-23: 014

PROJECT NO. CCR-17-6251B

■ GENERAL NOTES

1. EXISTING CONDITIONS SHOWN HAVE BEEN OBTAINED FROM A LIMITED AMOUNT OF FIELD INVESTIGATION AND LIMITED SOURCES AT THE TIME THE DRAWINGS WERE PREPARED. CONTRACTOR SHALL BE RESPONSIBLE TO EXAMINE THE PROJECT SITE AND REVIEW ALL EXISTING CONDITIONS AND REQUIREMENTS OF NEW WORK (PER THESE DRAWINGS AND SPECIFICATIONS) PRIOR TO BID AND CONSTRUCTION. REPORT ANY UNACCEPTABLE CONDITIONS, ERRORS, DISCREPANCIES OR CONCERNS TO THE CONTRACTING OFFICER FOR A DIRECTIVE.
2. CONSTRUCTION DOCUMENTS REASONABLY DESCRIBE THE INTENT OF THE QUALITY AND SCOPE OF THE PROJECT. WHERE DETAILS ARE NOT SHOWN, THE CONTRACTOR SHALL PROCEED FOLLOWING THE ACCEPTED QUALITY STANDARDS AND PROCEDURES OF THE CONSTRUCTION INDUSTRY IN HAWAII, AS WELL AS, THE GENERAL INTENT OF THE CONSTRUCTION DOCUMENTS. CLARIFICATIONS MAY BE SUBMITTED TO THE CONTRACTING OFFICER FOR REVIEW BEFORE PROCEEDING.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND CONDITIONS PRIOR TO BEGINNING ANY WORK AND SHALL NOTIFY THE CONTRACTING OFFICER OF ANY DISCREPANCY AND / OR CONDITION WHICH WILL PREVENT HIM FROM FULFILLING THE TERMS OF THE CONTRACT. CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR ALL CORRECTIONS AND REPAIRS REQUIRED DUE TO THEIR FAILURE TO DO SO.
4. ALL CONSTRUCTION SHALL COMPLY WITH THE BUILDING CODE IN EFFECT, AND OTHER APPLICABLE REGULATIONS.
5. CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS AND COORDINATE THE WORK OF THE VARIOUS TRADES TO FIT ACTUAL CONDITIONS AND MAKE INTERFACING ADJUSTMENTS AS REQUIRED.
6. QUANTITIES SHOWN AND / OR INDICATED IN THE DRAWINGS AND SPECIFICATIONS SHALL BE VERIFIED BY THE CONTRACTOR. CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR ALL QUANTITIES.
7. WHERE WARRANTIES ARE SPECIFIED, THE CONTRACTOR'S BID SHALL INCLUDE THE FULL COMPLIANCE OF ALL CONDITIONS REQUIRED FOR THE WARRANTIES. THE CONTRACTOR MUST CONSULT THE MANUFACTURER PROVIDING THE WARRANTY FOR ANY NEW WORK THAT MAY POTENTIALLY VOID ANY WARRANTIES, PRIOR TO EXECUTING THE WORK. WHERE THE MANUFACTURER'S WARRANTY REQUIREMENTS AND / OR RECOMMENDATIONS DIFFER FROM THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS, THE CONTRACTOR IS EXPECTED TO COMPLY WITH THE STRICTER OF THE TWO UNLESS NOTIFIED OTHERWISE. CONTRACTOR SHALL INFORM THE CONTRACTING OFFICER IN WRITING, PROVIDE SHOP DRAWINGS, AND AS-BUILT DRAWINGS WHERE THE CONSTRUCTION WILL DIFFER FROM THE CONSTRUCTION DOCUMENTS, AS A RESULT OF WARRANTY REQUIREMENTS.
8. DIMENSIONS: ALL FRAMING DIMENSIONS ARE TO BE FACE OF CMU, CONCRETE OR OF FINISH MEMBERS UNLESS OTHERWISE INDICATED. ALL DIMENSIONS SHALL HAVE PREFERENCE OVER SCALE. ALL DIMENSION SHALL BE VERIFIED IN THE FIELD BEFORE PROCEEDING WITH THE WORK.
9. DIMENSIONS WITH (E) MEANS EXISTING. CONTRACTOR SHALL VERIFY TO CONFIRM SIZE.
10. WHERE EXISTING CONDITIONS REQUIRE DETAILS AND / OR SPECIFICATIONS TO DIFFER FROM THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CONTRACTING OFFICER IN WRITING SO THAT ALTERNATE METHODS AND MATERIALS MAY BE CONSIDERED.
11. ALL ITEMS OR FINISHES SCHEDULED TO REMAIN, BUT DAMAGED DURING CONSTRUCTION, AND OVER PAINTED MATERIALS SHALL BE MADE GOOD AT NO EXTRA COST TO THE STATE.
12. NO WASTE MATERIALS SHALL ACCUMULATE OR BE STORED ON CAMPUS PROPERTY AT ANY TIME.
13. AT THE END OF CONSTRUCTION, ALL ITEMS AND EQUIPMENT TEMPORARILY REMOVED OR RELOCATED DURING THE CONSTRUCTION PROCESS SHALL BE REINSTALLED IN THE SAME LOCATION AND WORKING CONDITION PRIOR TO REMOVAL, OR IN A NEW LOCATION AS NOTED.

■ PROJECT DATA

THIS PROJECT WAS DESIGNED IN ACCORDANCE WITH THE FOLLOWING:
INTERNATIOINAL BUILDING CODE (IBC), 2006 EDITION WITH LOCAL AMENDMENTS
INTERNATIONAL ENERGY CONSERVATION CODE (IECC), 2015 EDITION WITH LOCAL AMENDMENTS
UNIFORM PLUMBING CODE (UPC), 2006 EDITION WITH LOCAL AMENDMENTS
UNIFORM FIRE CODE (UFC), NFPA 1 2012 EDITION WITH LOCAL AMENDMENTS
NATIONAL ELICTRIC CODE, 2008 EDITION
DEPARTMENT OF HEALTH (DOH), HAWAII ADMINISTRATIVE RULES, TITLE 11, CH 39 - AIR CONDITIONING & VENTILATING
2010 AMERICANS WITH DISABILITIES ACT STANDARDS FOR ACCESSIBLE DESIGN

SCOPE OF WORK INCLUDES EXTERIOR AND INTERIOR RENOVATION OF AN EXISTING BUILDING, INCLUDING 2 NEW CLASSROOMS, 2 OFFICES AND 2 NEW RESTROOMS (ONE IS ACCESSIBLE). THERE IS NO INCREASE IN FLOOR AREA AND NO CHANGE TO THE EXISTING PARKING.

TMK: 4-5-23:014

ZONING: AG-2

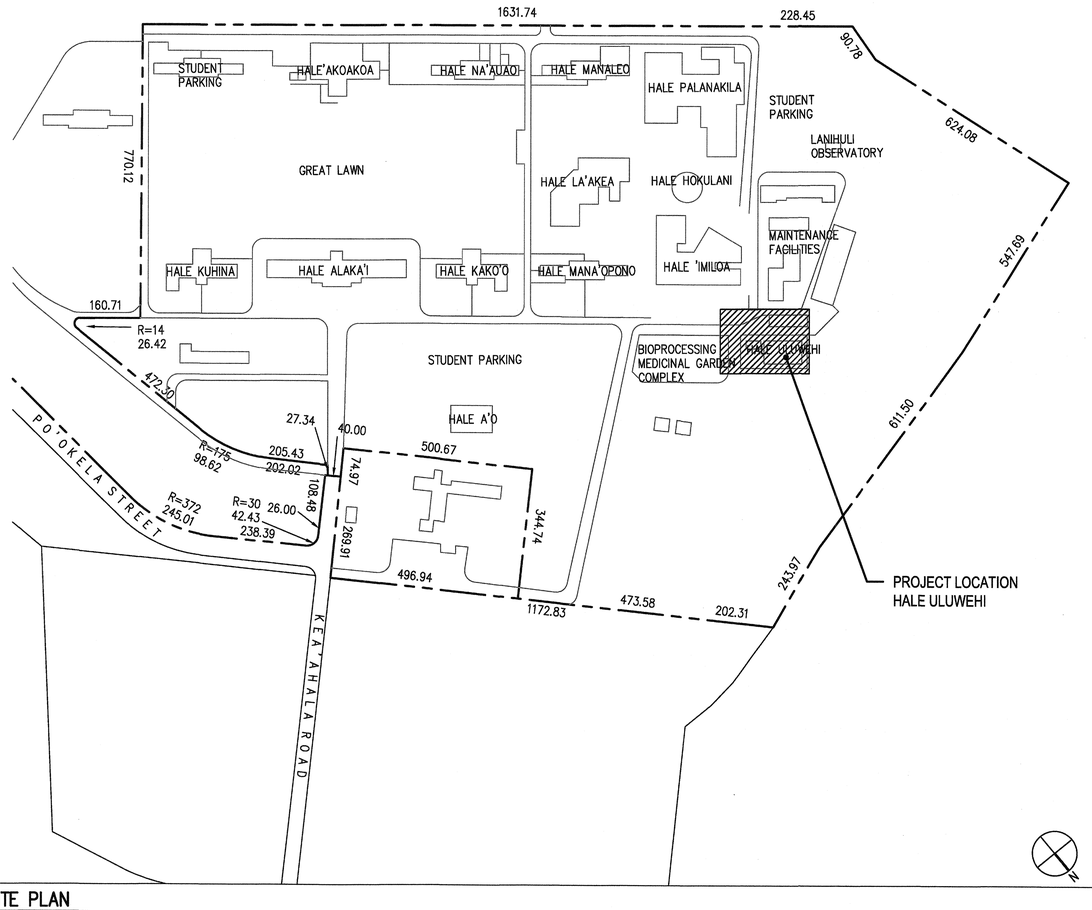
FLOOD ZONE: X

OCCUPANCIES: S-2, B

TYPE OF CONSTRUCTION: V-B

FLOOR AREA:

BUILDING 'T' (EXISTING TO BE RENOVATED) -	6,065 SF
BUILDING 'S' (EXISTING TO REMAIN) -	810 SF
COMBINED BUILDING AREA -	6,875 SF



SITE PLAN
NOT TO SCALE

■ CONSULTANTS

BENJAMIN WOO ARCHITECTS, L.L.C.
ARCHITECT
1240 ALA MOANA BLVD., SUITE 540
HONOLULU, HAWAII 96814

BELT COLLINS HAWAII, LLC
CIVIL ENGINEER
2153 NORTH KING STREET, SUITE 200
HONOLULU, HAWAII 96819

KAI HAWAII, INC.
STRUCTURAL ENGINEER
50 S. BERETANIA ST. C-119C
HONOLULU, HI 96813

CHARLES T. LUNSON & ASSOCIATES
MECHANICAL ENGINEER
98-1845 HAPAKI STREET
AIEA, HAWAII 96701

ECS, INC.
ELECTRICAL ENGINEER
615 PIIKOI STREET, SUITE 207
HONOLULU, HAWAII 96814

■ APPROVALS

MICHAEL T. UNEBASAMI
ASSOCIATE VICE PRESIDENT
FOR ADMINISTRATIVE AFFAIRS
UNIVERSITY OF HAWAII COMMUNITY COLLEGES

DATE 9/1/19

REVISION NO.	SYM.	DESCRIPTION	SHT.__ OF__	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CLIFFORD G.S. CHU
LICENSED PROFESSIONAL ARCHITECT
No. 5832
HAWAII, U.S.A.

EXP. 4-30-20

This work was prepared by me or under my supervision and construction of this project will be under my observation. ("Observation of construction" as defined under Section 16-115-2 of Hawaii Administrative Rules, Professional Engineers, Architects, Surveyors, and Landscape Architects.) The Contractor shall check and verify all dimensions at job before proceeding with work.

Signature

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

TITLE SHEET, LIST OF CONSULTANTS, APPROVALS
CAMPUS SITE PLAN, GENERAL NOTES

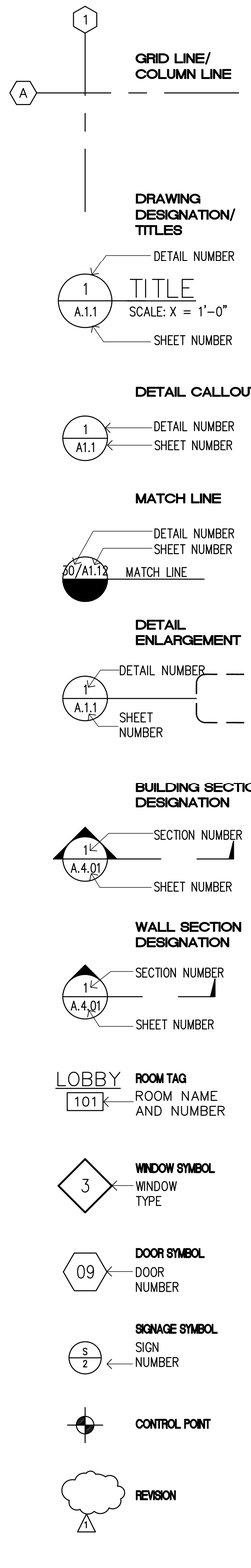
BENJAMIN WOO ARCHITECTS		PROJECT NO.	DRAWING NO.
DESIGN BY:	CHECKED BY:	CCR-17-6251B	T001
DRAWN BY:	APPROVED BY:	DATE	SHEET 1
SCALE: AS SHOWN		SEPT 2019	OF 50 SHTS.

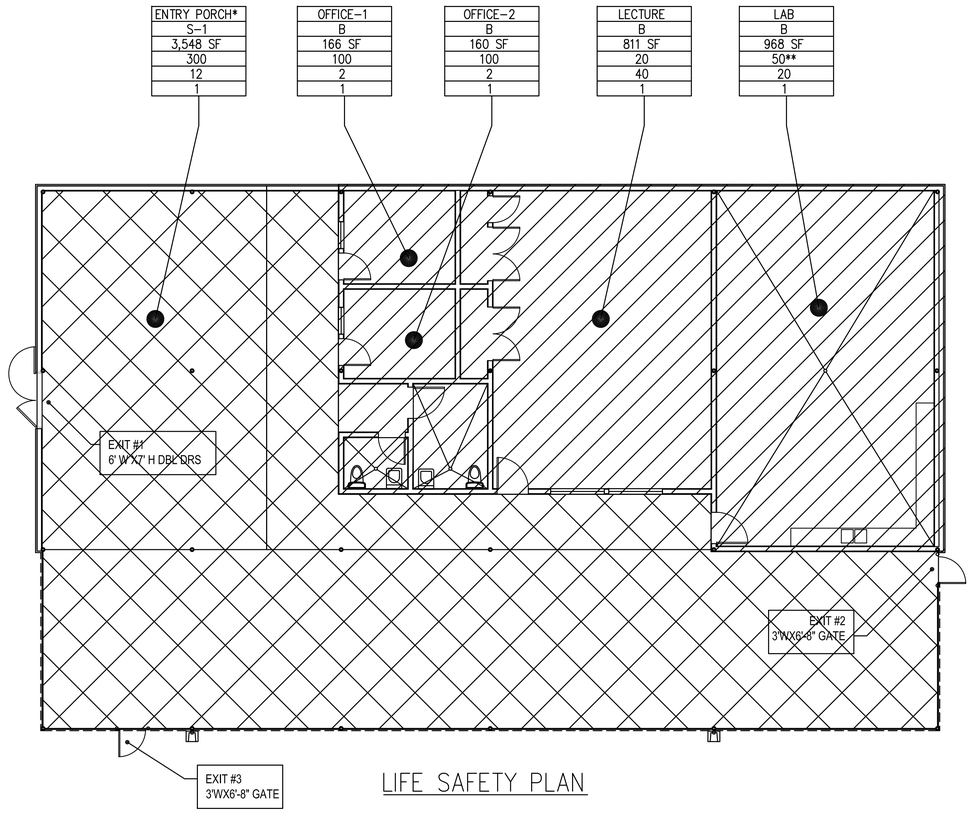
■ INDEX TO DRAWINGS

■ ABBREVIATIONS

&	And	FLASH.	Flashing	S.	South
L	Angle	FLUOR.	Fluorescent	S.A.	Single Acting
@	At	F. O. C.	Face of Concrete	S. C.	Solid Core
℄	Centerline	F. O. F.	Face of Finish	S. C. D.	Seat Cover Dispenser
∅	Diameter or Round	F. O. S.	Face of Studs		
⊥	Perpendicular	FPRP.	Fireproof	SCP.	Scupper
#	Pound or Number	FR.	Frame	SCR.	Screen
(E)	Existing	F. S.	Finish System	S.C.R.	Shower, Curtain, Rod
		FT.	Foot or Feet		
A. C.	Air Conditioning	FTG.	Footing	SCHED.	Schedule
ACCOUS.	Accoustical	FURR.	Furring	S. D.	Soap Dispenser
A. D.	Area Drain	FUT.	Future	S. D. BD.	Sound Deadening Board
ADJ.	Adjustible				
AGGR.	Aggregate	GA.	Gauge	SECT.	Section
AL.	Aluminum	GALV.	Galvanize	SH.	Shelf
APPROX.	Approximate	G. B.	Grab Bar	SHR.	Shower
ARCH.	Architectural	G. I.	Galvanized Iron	SHT.	Sheet
ASB.	Asbestos	GL.	Glass	SIM.	Similar
ASPH.	Asphalt	GND.	Ground	SL.	Slope
		GR.	Grade	SLDG.	Sliding
BD.	Board	GYP.	Gypsum	S. N. D.	Sanitary Napkin Dispenser
BITUM.	Bituminous				
BLDG.	Building	H. B.	Hose Bibb	S. N. R.	Sanitary Napkin Dispenser
BLK.	Block	H. C.	Hollow Core		
BLKG.	Blocking	HDWD.	Hardwood	SPEC.	Specification
BM.	Beam	HDWE.	Hardware	SQ.	Square
BOT.	Bottom	H. M.	Hollow Metal	SST.	Stainless Steel
		HORIZ.	Horizontal	S. SK.	Service Sink
CAB.	Cabinet	HR.	Hour	STA.	Station
C. B.	Catch Basin	HGT.	Height	STD.	Standard
CEM.	Cement			STL.	Steel
CER.	Ceramic	I. D.	Inside Diameter (Dim.)	STOR.	Storage
C. I.	Cast Iron			STRL.	Structural
CLG.	Ceiling	INCL.	Inclusive or Included	STRUC.	Structure
CLKG.	Calking			SURR.	Surround
CLO.	Closet	INSUL.	Insulation	SUSP.	Suspended
CLR.	Clear	INT.	Interior	SVC.	Service
C.M.U.	Concrete Masonry Unit			SW.	Switch
		JAL.	Jalousie	SYM.	Symetrical
CNTR.	Counter	JAN.	Janitor	SYS.	System
COL.	Column	J.B.	Junction Box		
CONC.	Concrete	J.C.	Janitor's Closet	TACKBD.	Tackboard
COND.	Condition	JST.	Joist	T. B.	Towel Bar
CONN.	Connection	JT.	Joint	T.B.B.	Tile Backer Board
CONSTR.	Construction			TEL.	Telephone
CONT.	Continuous	K.D.	Knock Down	TEMP.	Tempered
CORR.	Corridor	KIT.	Kitchen	TER.	Terrazzo
C.R.M.	Concrete Rubble Masonry	K.O.	Knock-Out	T&G	Tongue and Groove
CTR.	Center	LAB.	Laboratory	THK.	Thick
CTSK.	Countersunk	LUM.	Luminate	T.O.( ).	Top of (Item)
		LAV.	Lavatory	T.O.C.	Top of Curb
DBL.	Double	LKR.	Locker	T.O.P.	Top of Pavement
DEPT.	Department	LT.	Light	T.O.S.	Top of Slab
D. F.	Drinking Fountain			T.O.W.	Top of Wall
DET.	Detail	MAX.	Maximum	T. P. D.	Toilet Paper Dispenser
DIA.	Diameter	M. C.	Medicine Cabinet		
DIAG.	Diagonal	MECH.	Mechanical	T.P.H.	Toilet Paper Holder
DIM.	Dimension	MEMB.	Membrane		
DISP.	Dispenser	MET.	Metal	T. PT.	Textured Paint
DN.	Down	MFR.	Manufacturer	TRD.	Tread
DR.	Door	MH.	Manhole	TRANS.	Transition
DW.	Dishwasher	MIN.	Minimum	T.S.	Towel Shelf
DWR.	Drawer	MIR.	Mirror	T. V.	Television
DS.	Downspout	MISC.	Miscellaneous	TYP.	Typical
D. S. P.	Dry Standpipe	M. O.	Masonry Opening		
DWG.	Drawing	MTD.	Mounted	U.L.	Underwriters Laboratory
		MUL.	Mullion		
E.	East			UNFIN.	Unfinished
EA.	Each	N.	North	U. O. N.	Unless Otherwise Noted
E. J.	Expansion Joint	N. I. C.	Not in Contract		
EL.	Elevation	NO. or #	Number	UR.	Urinal
ELEC.	Electrical	NOM.	Nominal		
ELEV.	Elevator	N. T. S.	Not to Scale	VAL.	Vertical
EMER.	Emergency			VAR.	Vestibule
ENCL.	Enclosure	OA.	Overall	VERT.	Vertical
E. P.	Electrical Panel	OBS.	Obscure	VEST.	Vestibule
EQ.	Equal	O. C.	On Center	VOL.	Volume
EQPT.	Equipment	O. D.	Outside Diameter (Dim.)	V.P.	Veneer Plaster
				V.T.R.	Vent Through Roof
E. W. C.	Electric Water Cooler	OF.	Overflow	V.I.F.	Verify In Field
		OFF.	Office		
EXST.	Existing	OPNG.	Opening	W.	West
EXPO.	Exposed	OPP.	Opposite	W/	With
EXP.	Expansion			W/O	With Out
EXT.	Exterior	PRCST.	Precast	W. C.	Water Closet
E.F.S.	Exterior Finish System	PL.	Plate	WD.	Wood
		P. LAM.	Plastic Laminate	WDW.	Window
E. I. F. S.	Exterior Insul. Fin. System	PLAS.	Plaster	W.H.	Water Heater
		PLYWD.	Plywood	W.O.	Where Occurs
F. A.	Fire Alarm	PR.	Pair	WP.	Waterproof
F. B.	Flat Bar	PT.	Point	WP.MEMB.	Waterproof Membrane
F. D.	Floor Drain	PTD.	Painted		
FDN.	Foundation	PTN.	Partition	WR.	Water Resistant
F. E.	Fire Extinguisher	P. T. R.	Paper Towel Receptacle	WSCT.	Wainscot
F. E. C.	Fire Extinguisher Cabinet			W.S.P.	Wet Stand Pipe
				WT.	Weight
F. H. C.	Fire Hose Cabinet			W.W.F.	Welded Wire Fabric
FIN.	Finish				
FL.	Floor				
FLASH.	Flashing	Q. T.	Quarry Tile		
FLUOR.	Fluorescent				
F. O. C.	Face of Concrete				
F. O. F.	Face of Finish	R.	Riser		
F. O. S.	Face of Studs	RAD.	Radius		
F. A.	Fire Alarm	R. D.	Roof Drain		
F. B.	Flat Bar	REF.	Reference		
F. D.	Floor Drain	REFR.	Refrigerator		
FDN.	Foundation	RGTR.	Register		
F. E.	Fire Extinguisher	REINF.	Reinforced		
F. E. C.	Fire Extinguisher Cabinet	REQ.	Required		
		RESIL.	Resilient		
F. H. C.	Fire Hose Cabinet	RM.	Room		
FIN.	Finish	R. O.	Rough Opening		
FL.	Floor	RWD.	Redwood		
FLASH.	Flashing				

■ SYMBOLS





LIFE SAFETY PLAN

* INCLUDES ALL AREAS DESIGNATED S-1
** SHOP / VOCATIONAL

OCCUPANCY GROUP

STORAGE (S-1)

BUSINESS (B)

OCCUPANCY ROOM TAG

OFFICE-1	ROOM NAME
B	OCCUPANCY CLASS
166 SF	AREA
100	OCCUPANT LOAD FACTOR
2	OCCUPANT LOAD
1	REQUIRED NO. OF EXITS

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CLIFFORD G.S. CHU
LICENSED PROFESSIONAL ARCHITECT
No. 5832
HAWAII, U.S.A.

EXP. 4-30-20

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UNIVERSITY OF HAWAII
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5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

DRAWING INDEX, ABBREVIATIONS & SYMBOLS

BENJAMIN WOO ARCHITECTS		PROJECT NO. CCR-17-6251B	DRAWING NO. T002
DESIGN BY:	CHECKED BY:		
DRAWN BY:	APPROVED BY:	DATE OCT 2019	SHEET 2 OF 50 SHTS.
SCALE: AS SHOWN			

GENERAL NOTES

1. VERIFY AND CHECK ALL DIMENSIONS AND DETAILS ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

2. WORK INCIDENTAL TO THE CONTRACT AND NECESSARY TO COMPLETE THE PROJECT, ALTHOUGH NOT SPECIFICALLY REFERRED TO ON THE CONTRACT DOCUMENTS, SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR.

3. IN PERFORMING ALL WORK, THE CONTRACTOR SHALL EXERCISE DUE CARE AND CAUTION NECESSARY TO AVOID ANY DAMAGE TO AND IMPAIRMENT IN THE USE OF ANY EXISTING UTILITY LINE. ANY DAMAGE INFLICTED ON EXISTING UTILITY LINES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE IMMEDIATELY REPAIRED OR RESTORED AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

4. THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY; AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.

5. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM RUBBISH, DUST, NOISE, EROSION, ETC. THE WORK SHALL BE DONE IN CONFORMANCE WITH THE AIR AND WATER POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.

6. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM APPROPRIATE GOVERNMENT AGENCIES.

7. ALL CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG). THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS AND OTHER PROTECTIVE FACILITIES WHICH SHALL CONFORM WITH THE ADAAG.

CONSTRUCTION NOTES

1. ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986 AND STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU AND THE COUNTIES OF KAUAI, MAUI, AND HAWAII.

2. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.

3. NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW INTO EXISTING CITY DRAINAGE SYSTEMS, OR ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY.

4. THE GENERAL CONTRACTOR/DEVELOPER/OWNER OF THE PROJECT SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS," AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL", AS WELL AS CHAPTER 14 OF THE REVISED ORDINANCES OF HONOLULU, AS AMENDED. BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION.

   THE GENERAL CONTRACTOR/DEVELOPER/OWNER OF THE PROJECT SHALL OBTAIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT COVERAGE(S) FOR THE FOLLOWING:

   I. STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES THAT DISTURB ONE (1) ACRE OR MORE, AND

   II. DISCHARGES OF HYDROTESTING EFFLUENT, DEWATERING EFFLUENT, AND WELL DRILLING EFFLUENT TO STATE WATERS.

   IN ACCORDANCE WITH STATE LAW, ALL DISCHARGES RELATED TO PROJECT CONSTRUCTION OR OPERATIONS ARE REQUIRED TO COMPLY WITH STATE WATER QUALITY STANDARDS (HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54). BEST MANAGEMENT PRACTICES SHALL BE USED TO MINIMIZE OR PREVENT THE DISCHARGE OF SEDIMENT, DEBRIS, AND OTHER POLLUTANTS TO STATE WATERS. PERMIT COVERAGE IS AVAILABLE FROM THE DEPARTMENT OF HEALTH, CLEAN WATER BRANCH AT http://health.hawaii.gov/cwb. THE OWNER/DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR OBTAINING OTHER FEDERAL, STATE, OR LOCAL AUTHORIZATIONS AS REQUIRED BY LAW.

5. FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, D.P.P. AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT TWO (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. FOR CITY PROJECTS, THE CONTRACTOR SHALL COORDINATE INSPECTIONAL SERVICES WITH THE RESPONSIBLE CITY AGENCY.

6. FOR NON-CITY PROJECTS, THE CONTRACTOR MAY SUBMIT A SUBSTITUTION REQUEST TO PRECAST ANY CITY OWNED AND/OR MAINTAINED DRAINAGE STRUCTURE (EX., CATCH BASINS, DRAIN MANHOLES, DRAIN INLETS, CULVERTS, ETC). HOWEVER, PRIOR TO CONSTRUCTION AND INSTALLATION OF ANY PRECAST STRUCTURE, THE CONTRACTOR SHALL A) SUBMIT SIX (6) SETS OF SHOP DRAWINGS TO THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AND OBTAIN WRITTEN APPROVAL AND B) NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES. NON-COMPLIANCE WITH ANY OF THESE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL PRECAST CONSTRUCTION WORK AND REJECTION OF ALL PRECAST STRUCTURES ALREADY CONSTRUCTED.

7. CONFINED SPACE

   FOR ENTRY BY CITY PERSONNEL, INCLUDING INSPECTORS, INTO A PERMIT REQUIRED CONFINED SPACE AS DEFINED IN 29 CFR PART 1910.146(B), THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING:

   I. ALL SAFETY EQUIPMENT REQUIRED BY THE CONFINED SPACE REGULATIONS APPLICABLE TO ALL PARTIES OTHER THAN THE CONSTRUCTION INDUSTRY, TO INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:

      a. FULL BODY HARNESSES FOR UP TO TWO PERSONNEL.
      b. LIFELINE AND ASSOCIATED CLIPS.
      c. INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT.
      d. TWO-WAY RADIOS (WALKIE-TALKIES) IF OUT OF LINE-OF-SIGHT.
      e. EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE DURATION).
      f. CELLULAR TELEPHONE TO CALL FOR EMERGENCY ASSISTANCE.
      g. CONTINUOUS GAS DETECTOR (CALIBRATED) TO MEASURE OXYGEN, HYDROGEN SULFIDE, CARBON MONOXIDE AND FLAMMABLES (CAPABLE OF MONITORING AT A DISTANCE AT LEAST 20 FEET AWAY).
      h. PERSONAL MULTI-GAS DETECTOR TO BE CARRIED BY INSPECTOR.

   II. CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAFE ENTRY CONDITIONS.

   III. ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TWO, IF CONDITIONS WARRANT IT).

8. PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.

9. FOR BENCH MARK, SEE SHEET C-200.

TOPOGRAPHIC SURVEY NOTES

1. TOPOGRAPHIC SURVEY WORK COMPLETED BY GROUND SURVEYS BY CONTROL POINT SURVEYING, INC., MAP ENTITLED "TOPOGRAPHIC SURVEY OF GOVERNMENT SURVEY" DATED JULY 07 & AUGUST 07, 2012.

2. AZIMUTHS REFERRED TO "COOLIDGE" ARE BASED ON "GOVERNMENT SURVEY" TRIANGULATION STATION.

3. ELEVATIONS ARE REFERENCED TO MEAN SEA LEVEL.

4. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY AND ARE BASED ON RECORD INFORMATION.

5. ALL ELEVATIONS AND DISTANCES SHOWN ARE IN FEET.

6. BENCH MARK IS SHOWN ON SHEET C-200.

WATER NOTES

1. UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU, BOARD OF WATER SUPPLY'S "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.

2. THE CONTRACTOR SHALL NOTIFY THE BOARD OF WATER SUPPLY IN WRITING ONE WEEK PRIOR TO COMMENCING WORK ON THE WATER SYSTEM.

3. REQUESTS FOR WATER OUTAGES SHALL BE SUBMITTED TO THE BOARD OF WATER SUPPLY CONSTRUCTION INSPECTOR NOT LESS THAN FOURTEEN (14) CALENDAR DAYS IN ADVANCE. THE REQUEST SHALL INDICATE THE SPECIFIC AREA, DATE, TIME, AND THE ANTICIPATED DURATION OF THE PROPOSED OUTAGE. OUTAGES SHALL BE APPROVED AT THE CONVENIENCE OF THE BOARD OF WATER SUPPLY. THE CONTRACTOR SHALL PLAN ALL WORK TO MINIMIZE THE NUMBER AND DURATION OF OUTAGES. THE BOARD OF WATER SUPPLY SHALL PERFORM THE INITIAL NOTIFICATION OF AFFECTED CONSUMERS. HOWEVER, IF A SCHEDULED OUTAGE IS CANCELLED FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE AFFECTED CONSUMERS OF THE CANCELLATION AND RE-NOTIFY THEM NOT LESS THAN ONE (1) AND NOT MORE THAN TWO (2) CALENDAR DAYS PRIOR TO THE RESCHEDULED OUTAGE. CONTRACTOR NOTIFICATIONS SHALL BE AT NO ADDITIONAL COST TO THE BOARD OF WATER SUPPLY.

4. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL ASSUMPTIONS, DEDUCTIONS, OR CONCLUSIONS HE/SHE MAY MAKE OR DERIVE FROM THE SUBSURFACE INFORMATION OR DATA FURNISHED ON THE PLANS. THE CONTRACTOR MUST SATISFY HIMSELF/HERSELF THROUGH HIS/HER OWN INVESTIGATIONS AS TO WHAT SUBSURFACE CONDITIONS ARE TO BE ENCOUNTERED.

5. ANY COST INCURRED BY GAS, HECO, OR HAWAIIAN TELCOM BY THIS PROJECT SHALL BE PAID BY THE BOARD OF WATER SUPPLY THROUGH THE CONTRACTOR. PAYMENT SHALL BE ONLY FOR THE ACTUAL COST AS SHOWN ON THE UTILITY COMPANY'S INVOICE. NO PAYMENT WILL BE MADE FOR PROFIT, TAX, OVERHEAD, AND BOND COST.

6. ALL WATER MAIN TRENCHES SHALL BE BACKFILLED AS CALLED FOR UNDER DIVISION 300 – CONSTRUCTION, SECTION 302.03, TRENCH BACKFILL OF THE "WATER SYSTEM STANDARDS", DATED 2002. COMPACTION OF TRENCH BACKFILL SHALL MEET APPLICABLE REQUIREMENTS OF "THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION", SEPTEMBER 1986, OF THE COUNTIES OF THE STATE OF HAWAII, OR THE STATE DEPARTMENT OF TRANSPORTATION STANDARDS FOR PROJECTS WITHIN STATE HIGHWAYS.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL EFFLUENT ASSOCIATED WITH THE CONSTRUCTION ACTIVITY, INCLUDING DEWATERING, DISINFECTION AND HYDROTESTING OPERATIONS, TO SAFEGUARD PUBLIC HEALTH AND SAFETY IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF HEALTH REQUIREMENTS. ALL PERMITS AND LICENSES FOR CONSTRUCTION WATER DISPOSAL, INCLUDING ALL APPLICATIONS, CHARGES, FEES, AND TAXES, ARE THE RESPONSIBILITY OF THE CONTRACTOR.

8. ALL WATER MAINS AND APPURTENANCES SHALL BE SUBJECTED TO A HYDROSTATIC TEST PRESSURE OF [150, 200, 250 PSI - SHOULD BE VERIFIED BY DESIGN/PROJECT ENGINEER] BY THE CONTRACTOR IN ACCORDANCE WITH DIVISION 300 – CONSTRUCTION, SECTION 302.28, PIPE PRESSURE TEST OF THE "WATER SYSTEM STANDARDS", DATED 2002. DURING THE 30-MINUTE PRESSURE TEST, AND AFTER THE PRESSURE HAS STABILIZED, THE PRESSURE SHALL NOT DROP MORE THAN 10 PSI.

9. AFTER INSTALLATION OF TAPPING SLEEVE AND TAPPING VALVE AND PRIOR TO TAPPING THE EXISTING WATER MAIN, THE ASSEMBLY SHALL BE PRESSURE TESTED AT [150, 200, 250 PSI - SHOULD BE VERIFIED BY DESIGN/PROJECT ENGINEER] ON BOTH SIDES OF THE VALVE AND IN ACCORDANCE WITH THE WATER SYSTEM STANDARDS, DATED 2002.

10. THE NEW WATER MAIN SHALL BE COMPLETED IN PHASES IN THE NUMERICAL SEQUENCE SHOWN ON THE PLANS. THE CONTRACTOR SHALL COMPLETE EACH PHASE, INCLUDING INSTALLATION AND TESTING OF THE WATER MAIN, TRANSFER OF SERVICES AND FINAL PAVING OF THE STREET PRIOR TO BEGINNING THE NEXT PHASE.

11. ALL AIR RELIEF VALVES SHALL HAVE A MINIMUM WORKING PRESSURE RANGE OF 0 TO [150, 200, 250 PSI - SHOULD BE VERIFIED BY DESIGN/PROJECT ENGINEER].

12. THE USE OF CORROSION RESISTANT COATED COR-TEN® T-BOLTS AND NUTS FOR UNDERGROUND MECHANICAL JOINT INSTALLATIONS SHALL BE ALLOWED IN LIEU OF TYPE 316 STAINLESS STEEL BOLTS AND NUTS AS REQUIRED IN DIVISION 200, SECTION 202.02, MECHANICAL JOINT, OF THE 2002 WATER SYSTEM STANDARDS (WSS).

13. FOR NEW OR EXISTING STREETS IN CITY RIGHT-OF-WAY, ALL SERVICE LATERALS INSTALLED UNDER PAVEMENT AREAS SHALL HAVE A 36-INCH MINIMUM COVER AND ALL SERVICE LATERALS INSTALLED UNDER EXISTING SIDEWALK, CURB AND GUTTER AREAS SHALL HAVE AN 18-INCH MINIMUM COVER.

14. ALL CONTRACTORS PERFORMING WORK ON RESERVOIRS THAT WILL REMAIN IN SERVICE DURING CONSTRUCTION MUST TAKE EVERY PRECAUTION NECESSARY TO PREVENT DEBRIS FROM ENTERING THE RESERVOIR. THE WORK INCLUDES, BUT IS NOT LIMITED TO, SURFACE PREPARATION, PAINTING, HATCH REPAIR AND VENT REPAIR. TO ENSURE SAFE DRINKING WATER TO OUR CUSTOMERS, THE WORK OF CONTRACTORS SHALL NOT COMPROMISE THE WATER QUALITY AT BWS FACILITIES.

15. ALL SERVICE LATERAL RECONNECTIONS TO EXISTING SERVICES SHALL BE MADE AT THE METER.

16. ALL POLYVINYL CHLORIDE (PVC) PIPE SHALL CONFORM TO AWWA C-900 DR-14 AND USED WITH DUCTILE IRON (DI) FITTINGS. PVC FITTINGS INCLUDING DEFLECTION COUPLINGS ARE NOT ALLOWED.

IN ADDITION TO THE WATER NOTES, THE FOLLOWING NOTE MUST BE ADDED TO ALL BWS CONSTRUCTION PLANS:

DISABILITY AND COMMUNICATION ACCESS BOARD (DCAB) REQUIREMENTS

THIS PROJECT SHALL MEET THE ACCESSIBILITY REQUIREMENTS OF HAWAII REVISED STATUTES (HRS) 103-50 AND THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN SECTIONS 201.3 AND 206.

SEWER NOTES

1. ALL SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY'S "STANDARD SPECIFICATIONS," SEPT. 1986, THE DEPARTMENT OF ENVIRONMENTAL SERVICES "WASTEWATER SYSTEM DESIGN STANDARDS," JULY 2017, AND "WASTEWATER SYSTEM STANDARD DETAILS," JULY 2017, CURRENT CITY PRACTICES AND REVISED ORDINANCES OF HONOLULU, 1990 AS AMENDED.

2. IN THE EVENT THAT ANY CHANGE IN ALIGNMENT OR GRADE FOR THE PROPOSED SEWERS ARE REQUIRED DUE TO UNFORESEEN CONFLICT WITH OTHER UTILITIES, THE ENGINEER IN CHARGE OR THE MAKER OF THE PLANS SHALL BE RESPONSIBLE FOR THE REQUIRED CHANGES WHICH ARE TO BE PRESENTED TO THE DEPARTMENT OF PLANNING AND PERMITTING (DPP) FOR APPROVAL.

3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGEMENT BRANCH, WASTEWATER ENGINEERING AND CONSTRUCTION DIVISION, ENV, AT 768-8785, 768-8769, OR 768-8755 TO ARRANGE FOR INSPECTION SERVICES AND SUBMIT FOUR (4) SETS OF APPROVED CONSTRUCTION PLANS TO THE WASTEWATER BRANCH, DPP SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF SEWER WORK. THE CONTRACTOR SHALL PAY FOR ALL INSPECTION COSTS.

4. CRUSHED ROCK CRADLE IS PERMITTED WHERE SOIL IS STABLE. IN AREAS OF UNSTABLE SOIL, THE MAKER OF THE PLANS AND THE CONSTRUCTION ENGINEER WILL DETERMINE THE PIPE SUPPORT REQUIRED.

5. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS RESEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES, INCLUDING AND AFFECTING SEWER LINES, IN THE PRESENCE OF THE WASTEWATER INSPECTOR AND EXERCISE PROPER CARE IN EXCAVATING THE AREA. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL PAY FOR ALL DAMAGED UTILITIES.

6. SEWER LATERALS SHALL BE CLEAR OF AND NOT CONFLICTING WITH ANY OTHER UTILITY. MINIMUM HORIZONTAL AND VERTICAL CLEARANCES SHALL BE STRICTLY OBSERVED AND FOLLOWED.

7. SLOPE FOR SEWER LATERALS SHALL BE A MINIMUM OF 2.00% UNLESS OTHERWISE NOTED.

8. BUILDING PLUMBING FACILITIES SHALL BE CONTROLLED BY SEWER LATERAL INVERTS.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS SEWER SERVICE TO ALL AFFECTED AREAS DURING CONSTRUCTION.

10. THE CONSULTING ENGINEER SHALL SUBMIT TO THE WASTEWATER BRANCH, DPP "AS-BUILT" TRACINGS AND ELECTRONIC FILES OF THE CONSTRUCTION PLANS AS ACTUALLY CONSTRUCTED, SHOWING ALL CHANGES FROM THE ORIGINAL PLANS.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SEWAGE SPILLS CAUSED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE STATE DEPARTMENT OF HEALTH AND UTILIZE APPROPRIATE SAMPLING AND ANALYZING PROCEDURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PUBLIC NOTIFICATIONS AND PRESS RELEASES.

12. THE CONTRACTOR SHALL INSTALL "RAINSTOPPER" MANHOLE INSERTS IN ALL SEWER MANHOLES WITH TYPE "SA" FRAME AND COVER.

13. THE CONTRACTOR SHALL OBTAIN APPROVAL FOR ADVANCE SEWER RISER AGREEMENT AT THE DPP AND OBTAIN BUILDING PERMIT FOR PLUMBING WORK BEFORE ANY ADVANCE RISER IS MADE.

14. ALL SEWER PIPE JOINTS WITHIN EASEMENTS SHALL BE WRAPPED WITH GEOTEXTILE ROOT BARRIER.

15. CONFINED SPACE

    FOR ENTRY BY CITY PERSONNEL, INCLUDING INSPECTORS, INTO A PERMIT-REQUIRED CONFINED SPACE AS DEFINED IN 29 CFR PART 1910.146(B), THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING:

    1. ALL SAFETY EQUIPMENT REQUIRED BY THE CONFINED SPACE REGULATIONS APPLICABLE TO ALL PARTIES OTHER THAN THE CONSTRUCTION INDUSTRY, TO INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:

       A. FULL BODY HARNESSES FOR UP TO TWO PERSONNEL.
       B. LIFELINE AND ASSOCIATED CLIPS.
       C. INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT.
       D. TWO-WAY RADIOS (WALKIE-TALKIES) IF OUT OF LINE-OF-SIGHT.
       E. EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE DURATION).
       F. CELLULAR TELEPHONE TO CALL FOR EMERGENCY ASSISTANCE.
       G. CONTINUOUS GAS DETECTOR (CALIBRATED) TO MEASURE OXYGEN, HYDROGEN SULFIDE, CARBON MONOXIDE AND FLAMMABLES (CAPABLE OF MONITORING AT A DISTANCE AT LEAST 20-FEET AWAY).
       H. PERSONAL MULTI-GAS DETECTOR TO BE CARRIED BY INSPECTOR.

    2. CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAFE ENTRY CONDITIONS.

    3. ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TWO, IF CONDITIONS WARRANT IT).

16. WHEN CONNECTING TO A LIVE SEWER LINE, THE CONTRACTOR SHALL ABIDE BY ALL CONDITIONS THAT THE STATE DEPARTMENT OF HEALTH SETS FORTH TO MITIGATE ANY WASTEWATER SPILL THAT MAY OCCUR. THE CONTRACTOR SHALL INFORM THE CITY INSPECTOR FIVE (5) WORKING DAYS PRIOR TO THE ACTUAL CONNECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND PENALTIES DUE TO ANY SPILLS RESULTING FROM THE CONNECTION.

17. NO RUNGS SHALL BE INSTALLED INSIDE NEW SEWER MANHOLES.

18. FOR SEWER MANHOLE ADJUSTMENTS UPWARD LESS THAN 3", SEE STD. DETAIL S-28. FOR SMH ADJUSTMENTS UPWARD GREATER THAN 3" OR FOR ANY ADJUSTMENTS DOWNWARD, RECONSTRUCT SMH TOP FROM BELOW THE CONE SECTION.

19. IF THE CONTRACTOR ENCOUNTERS FLOW MONITORING DEVICES, SUCH AS SPECIAL SEWER MANHOLE COVERS EMBEDDED WITH SOLAR PANELS, CONTACT COLLECTION SYSTEMS MAINTENANCE (CSM), ENV AT 768-7272 TO COORDINATE TEMPORARY REMOVAL.

20. THE CONTRACTOR SHALL MAINTAIN VISIBILITY AND MAINTENANCE ACCESS TO LIVE SEWER MANHOLE LOCATIONS AT ALL TIMES, INCLUDING DURING NON-WORK HOURS AND PAVING OPERATIONS.

21. THE CONTRACTOR SHALL USE A MANHOLE DEBRIS CATCHING DEVICE WHEN PERFORMING MANHOLE HEIGHT ADJUSTMENT WORK AND REMOVE ANY CONSTRUCTION DEBRIS THAT HAS FALLEN INTO THE MANHOLE. DISPOSAL OF CONSTRUCTION DEBRIS IN THE SEWER SYSTEM IS STRICTLY PROHIBITED.

22. FOR PRECAST SEWER MANHOLES, THE CONSULTING ENGINEER SHALL SUBMIT FOUR (4) SETS OF SHOP DRAWINGS TO THE WASTEWATER BRANCH, DPP FOR APPROVAL. AFTER THE SHOP DRAWINGS ARE APPROVED, THE MANUFACTURER SHALL NOTIFY THE CONSTRUCTION MANAGEMENT BRANCH, WASTEWATER ENGINEERING AND CONSTRUCTION DIVISION, ENV, AT 768-8785, 768-8769, OR 768-8755 TO ARRANGE FOR INSPECTION SERVICES FOR CONCRETE POURS MADE AT ITS PLANT SEVEN (7) DAYS PRIOR TO POUR.

AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) NOTES

1. ALL CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG). THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS AND OTHER PROTECTIVE FACILITIES WHICH SHALL CONFORM WITH THE ADAAG.

2. TEMPORARY AND PERMANENT FACILITIES SHALL COMPLY WITH THE REQUIREMENTS OF ADAAG 201.3.

3. TEMPORARY AND PERMANENT ACCESSIBLE ROUTES SHALL BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF ADAAG 206.1 AND SHALL COMPLY WITH CHAPTER 4.

4. TEMPORARY AND PERMANENT ACCESSIBLE ROUTES SHALL COMPLY WITH THE REQUIREMENTS OF ADAAG 402.

5. THIS PROJECT SHALL MEET THE ACCESSIBILITY REQUIREMENTS OF HAWAII REVISED STATUTES (HRS) 103-50 AND AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) SECTIONS 201.3 AND 206.1.

ABBREVIATIONS

AC	ASPHALT CONCRETE	A.C.	ASPHALT CONCRETE
ARCH	ARCHITECTURAL	A/C	AIR CONDITIONING
APPROX.	APPROXIMATELY	APPROX.	APPROXIMATE
BMP	BEST MANAGEMENT PRACTICES	ARV	AIR RELEASE VALVE
CI	CAST IRON	BC	BOTTOM CURB
CL	CENTER LINE	BFP	BACK FLOW PREVENTER
CONN	CONNECTION	BOT.	BOTTOM
COMM	COMMUNICATION	BW	BOTTOM WALL
D	DRAINAGE	CATV	CABLE TELEVISION
DIA	DIAMETER	C.B.	CATCH BASIN
DTL	DETAIL	C.L.	CHAIN LINK
DWG	DRAWING	CMU	CONCRETE MASONRY UNIT
E	EAST	C.O.	CLEAN OUT
EP	EDGE OF PAVEMENT	COL.	COLUMN
ETC.	ETCETERA	COMM.	COMMUNICATION
EXIST	EXISTING	CONC.	CONCRETE
H / HORIZ.	HORIZONTAL	CRM	CONCRETE RUBBLE MASONRY
INV	INVERT	D	DIAMETER OR DRAIN
MAX	MAXIMUM	D.I.	DRAIN INLET
MECH	MECHANICAL	D.S.	DOWN SPOUT
MIN	MINIMUM	DSP	DRY STAND PIPE
N	NORTH	DWY.	DRIVEWAY
NO.	NUMBER	E/ELEC.	ELECTRIC
OC	ON CENTER	ELEV./EL.	ELEVATION
ROW	RIGHT OF WAY	F.A.	FIRE ALARM
S	SEWER	F.H.	FIRE HYDRANT
SF	SQUARE FEET	FL	FLOW LINE
SHT	SHEET	FM	FORCE MAIN
SS	STAINLESS STEEL	GAS	GAS
STA	STATION	G	GRATED INLET
STD	STANDARD	G.I.	GAS MANHOLE
SYM	SYMBOL	GMH	GROUND
THK	THICKNESS	GND.	GUARD POST/GUY POLE/GATE POST
TYP	TYPICAL	G.P.	GAS VALVE
V / VERT.	VERTICAL	GV	GUY WIRE
W	WATER	G.W.	HEIGHT HOSE BIB
W/	WITH	H H.B.	IRRIGATION CONTROL VALVE
		ICV	INVERT
		INV	JOINT TRUNKING SYSTEM
		JTS	LAMP POLE
		L.P.	MAIL BOX
		M.B.	MANHOLE
		MH	OVERHEAD
		O/H	PAVEMENT
		PAV'T.	PARKING METER
		P.M.	POWER POLE
		P.P.	PEDESTRIAN SIGNAL LIGHT
		PSL	REFLECTOR
		REF.	SEWER OR SPREAD
		S	SIGNAL CORPS
		SC	SIGNAL CORPS MANHOLE
		SCMH	STORM DRAIN MANHOLE
		SDMH	STREET LIGHT
		S.L.	STREET LIGHT BOX
		SLB	SEWER MANHOLE
		SMH	SPRINKLER
		SPR.	STREET NAME
		ST.NAME	STATION
		STA.	TOP CURB
		TC	TOP DROP CURB
		TDC	TELEPHONE
		T/TEL.	TOP PIPE
		TP	TOP ROLLED CURB
		TRC	TOP STEM
		TS	TRAFFIC SIGNAL LIGHT
		TSL	TRAFFIC SIGNAL LIGHT BOX
		TSLB	TOP VALVE
		TV	TOP WALL
		TW	UTILITY POLE
		U.P.	UTILITY POLE W/STREET LIGHT
		U.P./S.L.	WATER
		W	WATER METER
		WM	WATER MANHOLE
		WMH	WATER VALVE BOX
		WV	CROSS WALK
		X-WALK	

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CHERYL M. PALESH
LICENSED PROFESSIONAL ENGINEER
No.5952-C
HAWAII, U.S.A.

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

APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

GENERAL NOTES – 1

BELT COLLINS HAWAII LLC		PROJECT NO.	DRAWING NO.
DESIGN BY: CMP	CHECKED BY: ACR	CCR-17-6251B	C-001
DRAWN BY: DK	APPROVED BY: CMP	DATE OCT 2019	SHEET 3 OF 50 SHTS.
SCALE: AS SHOWN			

Tue, 22 Oct 2019 – 7:25pm
M:\WC Uluwehi\20191700\400\04 Graphics\C40\Sheets\C-001 General Notes – 1.dwg

HAWAIIAN ELECTRIC COMPANY NOTES

1. LOCATION OF HAWAIIAN ELECTRIC FACILITIES

THE LOCATION OF HAWAIIAN ELECTRIC'S OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATIONS OF THE FACILITIES AND SHALL EXERCISE PROPER CARE IN EXCAVATING AND WORKING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES AND UTILITY CROSSINGS ARE SHOWN, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS AND CROSSINGS TO VERIFY THE DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO HAWAIIAN ELECTRIC'S FACILITIES WHETHER SHOWN OR NOT SHOWN ON THE PLANS.

2. COMPLIANCE WITH HAWAII OCCUPATIONAL SAFETY AND HEALTH LAWS

THE CONTRACTOR SHALL COMPLY WITH THE STATE OF HAWAII'S OCCUPATIONAL SAFETY AND HEALTH LAWS AND REGULATIONS, INCLUDING WITHOUT LIMITATION, THOSE RELATED TO WORKING ON OR NEAR EXPOSED OR ENERGIZED ELECTRICAL LINES AND EQUIPMENT.

3. EXCAVATION CLEARANCE

THE CONTRACTOR SHALL OBTAIN AN EXCAVATION CLEARANCE FROM HAWAIIAN ELECTRIC'S PLANNING AND DESIGN SECTION OF THE CUSTOMER INSTALLATIONS DIVISION (543-5654) LOCATED AT 820 WARD AVENUE, 4TH FLOOR, A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO STARTING CONSTRUCTION.

4. CAUTION!!! ELECTRICAL HAZARD!!!

EXISTING HAWAIIAN ELECTRIC OVERHEAD AND UNDERGROUND LINES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION UNLESS PRIOR SPECIAL ARRANGEMENTS HAVE BEEN MADE WITH HAWAIIAN ELECTRIC. ONLY HAWAIIAN ELECTRIC PERSONNEL ARE TO HANDLE THESE ENERGIZED LINES AND ERECT TEMPORARY GUARDS TO PROTECT THESE LINES FROM DAMAGE. THE CONTRACTOR SHALL WORK CAUTIOUSLY AT ALL TIMES TO AVOID ACCIDENTS AND DAMAGE TO EXISTING HAWAIIAN ELECTRIC FACILITIES, WHICH CAN RESULT IN ELECTROCUTION.

5. OVERHEAD LINES

STATE LAW (OSHA) REQUIRES THAT A WORKER AND THE LONGEST OBJECT HE OR SHE MAY CONTACT CANNOT COME CLOSER THAN A SPECIFIED MINIMUM RADIAL CLEARANCE WHEN WORKING CLOSE TO OR UNDER ANY OVERHEAD LINES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE INFORMED OF AND COMPLY WITH THE LAW.

AT ANY TIME SHOULD THE CONTRACTOR ANTICIPATE THAT HIS WORK WILL RESULT IN THE NEED TO ENCROACH WITHIN THE MINIMUM REQUIRED CLEARANCE AS STATED IN THE LAW, THE CONTRACTOR SHALL NOTIFY HAWAIIAN ELECTRIC AT LEAST THREE (3) MONTHS PRIOR TO THE PLANNED ENCROACHMENT SO THAT, IF FEASIBLE, THE NECESSARY PROTECTIONS (E.G. RELOCATE OR DE-ENERGIZE HAWAIIAN ELECTRIC LINES) CAN BE INVESTIGATED. HAWAIIAN ELECTRIC MAY ALSO BE ABLE TO BLANKET ITS DISTRIBUTION (12KV AND BELOW) LINES TO PROVIDE A VISUAL AID IN PREVENTING ACCIDENTAL CONTACT. HAWAIIAN ELECTRIC'S COST OF SAFEGUARDING OR IDENTIFYING ITS LINES WILL BE CHARGED TO THE CONTRACTOR.

CONTACT HAWAIIAN ELECTRIC'S CUSTOMER INSTALLATIONS DIVISION AT 543-7070 FOR ASSISTANCE IN IDENTIFYING AND SAFEGUARDING OVERHEAD POWER LINES.

6. POLE BRACING

CONTRACTOR SHALL NOT EXCAVATE WITHIN 10 FEET FROM HAWAIIAN ELECTRIC'S UTILITY POLES OR ANY ANCHOR SYSTEM SUPPORTING THE UTILITY POLE. IF CONTRACTOR MUST EXCAVATE CLOSER THAN 10 FEET FROM A UTILITY POLE OR ITS ANCHOR SYSTEM, CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING, SUPPORTING, SECURING AND TAKING ALL PRECAUTIONS TO PREVENT DAMAGE TO OR LEANING OF EXISTING POLES. BEFORE COMMENCING SUCH EXCAVATION, CONTRACTOR MUST SUBMIT ITS BRACING CALCULATIONS AND DRAWINGS, PREPARED AND STAMPED BY A LICENSED STRUCTURAL ENGINEER, TO HAWAIIAN ELECTRIC'S CUSTOMER INSTALLATIONS DIVISION (543-7070) FOR REVIEW. HAWAIIAN ELECTRIC REQUIRES A MINIMUM OF TEN (10) WORKING DAYS TO CONDUCT THE REVIEW OF CONTRACTOR'S SUBMITTAL. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND REMOVAL OF THE TEMPORARY POLE BRACING SYSTEM, AS WELL AS ALL COSTS INCURRED BY HAWAIIAN ELECTRIC TO REVIEW CONTRACTOR'S DRAWINGS AND TO REPAIR OR STRAIGHTEN POLES IMPACTED BY CONTRACTOR'S ACTIVITIES, INCLUDING RESPONSE AND RESTORATION COSTS INCURRED BY HAWAIIAN ELECTRIC ARISING OUT OF OR RELATED TO OUTAGES CAUSED BY CONTRACTOR'S FAILURE TO MEET THE FOREGOING REQUIREMENTS. HAWAIIAN ELECTRIC'S REVIEW AND APPROVAL OF ANY CONTRACTOR SUBMITTALS INCLUDING ITS WORK PROCEDURE SHALL NOT RELIEVE CONTRACTOR FROM ANY LIABILITY RESULTING FROM CONTRACTOR'S EXCAVATION NEAR OR AROUND HAWAIIAN ELECTRIC'S UTILITY POLES.

7. UNDERGROUND LINES

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND LINES. HAWAIIAN ELECTRIC'S EXISTING ELECTRICAL CABLES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION. ONLY HAWAIIAN ELECTRIC PERSONNEL ARE TO BREAK INTO EXISTING HAWAIIAN ELECTRIC FACILITIES, HANDLE THESE CABLES, AND ERECT TEMPORARY GUARDS TO PROTECT THESE CABLES FROM DAMAGE. THE COST OF HAWAIIAN ELECTRIC'S ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF ITS UNDERGROUND LINES WILL BE CHARGED TO THE CONTRACTOR. FOR ASSISTANCE/COORDINATION IN PROVIDING PROPER SUPPORT AND PROTECTION OF THESE LINES, THE CONTRACTOR SHALL CALL HAWAIIAN ELECTRIC'S CUSTOMER INSTALLATIONS DIVISION AT 543-7070 A MINIMUM OF TEN (10) WORKING DAYS IN ADVANCE.

SPECIAL PRECAUTIONS ARE REQUIRED WHEN EXCAVATING NEAR HAWAIIAN ELECTRIC'S 138KV OR 46KV UNDERGROUND LINES (SEE HAWAIIAN ELECTRIC INSTRUCTIONS TO CONSULTANTS/CONTRACTORS ON "EXCAVATION NEAR HAWAIIAN ELECTRIC'S UNDERGROUND 138KV AND/OR 46KV LINES" FOR DETAILED REQUIREMENTS).

FOR VERIFICATION OF UNDERGROUND LINES, THE CONTRACTOR SHALL CALL THE HAWAII ONE CALL CENTER AT 866-423-7287 MINIMUM OF FIVE (5) WORKING DAYS IN ADVANCE.

8. UNDERGROUND FUEL PIPELINES

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF HAWAIIAN ELECTRIC'S UNDERGROUND FUEL OIL PIPELINES. SPECIAL PRECAUTIONS ARE REQUIRED WHEN EXCAVATING NEAR HAWAIIAN ELECTRIC'S UNDERGROUND FUEL OIL PIPELINES (SEE HAWAIIAN ELECTRIC'S SPECIFIC FUEL PIPELINE "GUIDELINES" TO CONSULTANTS/CONTRACTORS ON EXCAVATION NEAR HAWAIIAN ELECTRIC'S UNDERGROUND FUEL PIPELINES FOR DETAILED REQUIREMENTS).

9. EXCAVATIONS

WHEN TRENCH EXCAVATION IS ADJACENT TO OR BENEATH HAWAIIAN ELECTRIC'S EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR:

a) ARRANGING FOR HAWAIIAN ELECTRIC STANDBY PERSONNEL TO OBSERVE WORK AT CONTRACTOR'S COST.
b) SHEETING, BRACING, OR OTHERWISE SUPPORTING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE AND TO PREVENT POSSIBLE SLIDES, CAVE-INS, AND SETTLEMENTS.
c) PROPERLY SUPPORTING EXISTING STRUCTURES OR FACILITIES WITH BEAMS, STRUTS, UNDER-PINNINGS, OR OTHER NECESSARY METHODS TO FULLY PROTECT IT FROM DAMAGE.
d) BACKFILLING WITH PROPER BACKFILL MATERIAL INCLUDING SPECIAL THERMAL BACKFILL WHERE EXISTING (REFER TO ENGINEERING DIVISION FOR THERMAL BACKFILL SPECIFICATIONS).

10. RELOCATION OF HAWAIIAN ELECTRIC FACILITIES

ANY WORK REQUIRED TO RELOCATE OR MODIFY HAWAIIAN ELECTRIC FACILITIES SHALL BE DONE BY HAWAIIAN ELECTRIC, OR BY THE CONTRACTOR UNDER HAWAIIAN ELECTRIC'S SUPERVISION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION, AND SHALL PROVIDE NECESSARY SUPPORT FOR HAWAIIAN ELECTRIC'S WORK, WHICH MAY INCLUDE, BUT NOT BE LIMITED TO, STAKING OF POLE/ANCHOR LOCATIONS, IDENTIFYING RIGHT OF WAY AND PROPERTY LINES, EXCAVATION AND BACKFILL, PERMITS AND TRAFFIC CONTROL, BARRICADING, AND RESTORATION OF PAVEMENT, SIDEWALKS, AND OTHER FACILITIES.

ALL COSTS ASSOCIATED WITH ANY RELOCATION OR MODIFICATION (EITHER TEMPORARY OR PERMANENT) FOR THE CONVENIENCE OF THE CONTRACTOR, OR TO ENABLE THE CONTRACTOR TO PERFORM HIS WORK IN A SAFE AND EXPEDITIOUS MANNER IN FULFILLING HIS CONTRACT OBLIGATIONS SHALL BE BORNE BY THE CONTRACTOR.

11. CONFLICTS

ANY REDESIGN OR RELOCATION OF HAWAIIAN ELECTRIC'S FACILITIES NOT SHOWN ON THE PLANS MAY BE CAUSE FOR LENGTHY DELAYS. THE CONTRACTOR ACKNOWLEDGES THAT HAWAIIAN ELECTRIC IS NOT RESPONSIBLE FOR ANY DELAY OR DAMAGE THAT MAY ARISE AS A RESULT OF ANY CONFLICTS DISCOVERED OR IDENTIFIED WITH RESPECT TO THE LOCATION OR CONSTRUCTION OF HAWAIIAN ELECTRIC'S ELECTRICAL FACILITIES IN THE FIELD, REGARDLESS OF WHETHER THE CONTRACTOR HAS MET THE REQUESTED MINIMUM ADVANCE NOTICES. IN ORDER TO MINIMIZE ANY DELAY OR IMPACT ARISING FROM SUCH CONFLICTS, HAWAIIAN ELECTRIC SHOULD BE NOTIFIED IMMEDIATELY UPON DISCOVERY OR IDENTIFICATION OF SUCH CONFLICT.

12. DAMAGE TO HAWAIIAN ELECTRIC FACILITIES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL HAWAIIAN ELECTRIC SURFACE AND SUBSURFACE UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGES TO HAWAIIAN ELECTRIC'S FACILITIES AS A RESULT OF HIS OPERATIONS. THE CONTRACTOR SHALL IMMEDIATELY REPORT SUCH DAMAGES OR ANY HAZARDOUS CONDITIONS RELATED TO HAWAIIAN ELECTRIC'S LINES TO HAWAIIAN ELECTRIC'S TROUBLE DISPATCHER AT 548-7961. REPAIR WORK SHALL BE DONE BY HAWAIIAN ELECTRIC OR BY THE CONTRACTOR UNDER HAWAIIAN ELECTRIC'S SUPERVISION. COSTS FOR DAMAGES TO HAWAIIAN ELECTRIC'S FACILITIES SHALL BE BORNE BY THE CONTRACTOR.

IN CASE OF DAMAGE OR SUSPECTED DAMAGE TO HAWAIIAN ELECTRIC'S FUEL PIPELINE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY HAWAIIAN ELECTRIC'S SECURITY COMMAND CENTER AT 543-7685 (A 24-HOUR NUMBER) SO HAWAIIAN ELECTRIC PERSONNEL CAN SECURE THE DAMAGED SECTION AND REPORT ANY OIL SPILLS TO THE PROPER AUTHORITIES. ALL COSTS ASSOCIATED WITH THE DAMAGE, REPAIR, AND OIL SPILL CLEANUP SHALL BE BORNE BY THE CONTRACTOR.

13. HAWAIIAN ELECTRIC STAND-BY PERSONNEL

THE CONTRACTOR MAY REQUEST HAWAIIAN ELECTRIC TO PROVIDE AN INSPECTOR TO STAND-BY DURING CONSTRUCTION NEAR HAWAIIAN ELECTRIC'S FACILITIES. THE COST OF SUCH INSPECTION WILL BE CHARGED TO THE CONTRACTOR.

THE CONTRACTOR SHALL CALL HAWAIIAN ELECTRIC'S CUSTOMER INSTALLATIONS DIVISION AT 543-7070 A MINIMUM OF THREE (3) MONTHS IN ADVANCE TO ARRANGE FOR HAWAIIAN ELECTRIC STAND-BY PERSONNEL.

14. CLEARANCES

THE FOLLOWING CLEARANCES SHALL BE MAINTAINED BETWEEN HAWAIIAN ELECTRIC'S DUCTLINE AND ALL ADJACENT STRUCTURES (CHARTED AND UNCHARTED) IN THE TRENCH:

GUIDELINES FOR MINIMUM HORIZONTAL (PARALLEL) CLEARANCES BETWEEN HAWAIIAN ELECTRIC AND OTHER UNDERGROUND UTILITIES

UNDERGROUND UTILITY	HAWAIIAN ELECTRIC DIRECT BURIED CABLE	HAWAIIAN ELECTRIC DIRECT BURIED IN CONDUIT (NO CONCRETE ENCASEMENT)	HAWAIIAN ELECTRIC 3" (MINIMUM) CONCRETE ENCASEMENT	APPLICABLE NOTES:
HAWAIIAN ELECTRIC DB CONDUITS	12"	3"	0"	
HAWAIIAN ELECTRIC 3" ENCASEMENT	0"	0"	0"	
TELEPHONE / CATV DB	12"	12"	6"	
TELEPHONE / CATV DB DUCTS	12"	12"	6"	
TELEPHONE / CATV 3" ENCASEMENT	0"	0"	0"	5
TRAFFIC SIGNAL	12"	12"	12"	
WATER DB (BWS OWNED)	36"	36"	36"	1, 4
CUSTOMER OWNED WATER SERVICE LATERALS	12"	12"	12"	
WATER (CONCRETE JACKETED) (BWS OWNED)	36"	36"	36"	1, 4
GAS DB	12"	12"	12"	1
GAS (CONCRETE JACKETED)	12"	12"	12"	1
SEWER DB	36"	36"	36"	1, 2
SEWER (CONCRETE JACKETED)	36"	36"	36"	1, 2
DRAIN	12"	12"	12"	1
FUEL PIPELINES				3

NOTES:
1. WHERE SPACE IS AVAILABLE, PARALLEL CLEARANCE TO OTHER UTILITIES, OR FOREIGN STRUCTURES OTHER THAN COMMUNICATION OR TRAFFIC SIGNAL SHALL BE 36".
2. IF 36" CLEARANCE CANNOT BE MET:
   - IF CLEARANCE IS LESS THAN 12", JACKET SEWER LINE WITH REINFORCED CONCRETE (PER HAWAIIAN ELECTRIC'S STD. 30-1030) FOR A DISTANCE OF 5' PLUS PIPE DIAMETER.
   - IF CLEARANCE IS BETWEEN 12" AND 36", JACKET SEWER LINE WITH PLAIN CONCRETE.
3. ALL FUEL PIPELINE CROSSINGS SHALL BE REVIEWED AND APPROVED BY THE COMPANY THAT OWNS AND MAINTAINS IT.
4. 5 FEET CLEAR TO WATER MAINS 16" AND LARGER.
5. FOR SITUATIONS WITH 0" MINIMUM SEPARATION, A 6" SEPARATION IS RECOMMENDED.
6. CLEARANCES MEASURED FROM OUTER EDGES OR DIAMETERS OF UTILITIES. WHENEVER CONCRETE JACKETS ARE INVOLVED, CLEARANCES SHALL BE TOTAL CLEAR DISTANCE BETWEEN THE CONCRETE JACKET AND UTILITY CONCERNED.

GUIDELINES FOR MINIMUM VERTICAL (CROSSING) CLEARANCES BETWEEN HAWAIIAN ELECTRIC AND OTHER UNDERGROUND UTILITIES

UNDERGROUND UTILITY	HAWAIIAN ELECTRIC DIRECT BURIED CABLE	HAWAIIAN ELECTRIC DIRECT BURIED IN CONDUIT (NO CONCRETE ENCASEMENT)	HAWAIIAN ELECTRIC 3" (MINIMUM) CONCRETE ENCASEMENT	APPLICABLE NOTES:
HAWAIIAN ELECTRIC DB CONDUITS	6"	3"	0"	
HAWAIIAN ELECTRIC 3" ENCASEMENT	0"	0"	0"	
TELEPHONE / CATV DB	12"	12"	6"	
TELEPHONE / CATV DB DUCTS	12"	12"	6"	
TELEPHONE / CATV 3" ENCASEMENT	0"	0"	0"	3
TRAFFIC SIGNAL	12"	12"	6"	
WATER DB (BWS OWNED)	12"	12"	12"	5
CUSTOMER OWNED WATER SERVICE LATERALS	6"	6"	6"	
WATER (CONCRETE JACKETED) (BWS OWNED)	12"	12"	12"	5
GAS DB	12"	12"	12"	
GAS (CONCRETE JACKETED)	12"	12"	12"	
SEWER DB	24"	24"	24"	1
SEWER (CONCRETE JACKETED)	24"	24"	24"	1
DRAIN	12"	12"	6"	
FUEL PIPELINES				2

NOTES:
1. IF CLEARANCE CANNOT BE MET:
   - IF CLEARANCE IS LESS THAN 12", JACKET SEWER LINE WITH REINFORCED CONCRETE (PER HAWAIIAN ELECTRIC'S STD. 30-1030) FOR A DISTANCE OF 5' PLUS PIPE DIAMETER.
   - IF CLEARANCE IS BETWEEN 12" AND 24", JACKET SEWER LINE WITH PLAIN CONCRETE.
2. ALL FUEL PIPELINE CROSSINGS SHALL BE REVIEWED AND APPROVED BY THE COMPANY THAT OWNS AND MAINTAINS IT.
3. FOR SITUATIONS WITH 0" MINIMUM SEPARATION, A 6" SEPARATION IS RECOMMENDED.
4. CLEARANCES MEASURED FROM OUTER EDGES OR DIAMETERS OF UTILITIES. WHENEVER CONCRETE JACKETS ARE INVOLVED, CLEARANCES SHALL BE TOTAL CLEAR DISTANCE BETWEEN THE CONCRETE JACKET AND UTILITY CONCERNED.
5. 36" CLEARANCE IS REQUIRED FOR TRENCHLESS INSTALLATION WORK.

THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER & HAWAIIAN ELECTRIC OF ANY HEAT SOURCES (POWER CABLE DUCT BANK, STEAMLINE, ETC.) ENCOUNTERED THAT ARE NOT PROPERLY IDENTIFIED ON THE DRAWING.

15. INDEMNITY

THE CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS HAWAIIAN ELECTRIC FROM AND AGAINST ALL LOSSES, DAMAGES, CLAIMS, AND ACTIONS, INCLUDING BUT NOT LIMITED TO REASONABLE ATTORNEY'S FEES AND COSTS BASED UPON OR ARISING OUT OF DAMAGE TO PROPERTY OR INJURIES TO PERSONS, OR OTHER TORTIOUS ACTS CAUSED OR CONTRIBUTED TO BY CONTRACTOR OR ANYONE ACTING UNDER ITS DIRECTION OR CONTROL OR ON ITS BEHALF; PROVIDED CONTRACTOR'S INDEMNITY SHALL NOT BE APPLICABLE TO ANY LIABILITY BASED UPON THE SOLE NEGLIGENCE OF HAWAIIAN ELECTRIC.

ADDITIONAL NOTES WHEN WORK INVOLVES CONSTRUCTION OF HAWAIIAN ELECTRIC FACILITIES

16. SCHEDULE

CONTRACTOR SHALL FURNISH HIS CONSTRUCTION SCHEDULE SIX (6) MONTHS PRIOR TO STARTING WORK ON HAWAIIAN ELECTRIC FACILITIES. CONTRACTOR SHALL GIVE HAWAIIAN ELECTRIC, IN WRITING, THREE (3) MONTHS NOTICE TO PROCEED WITH HAWAIIAN ELECTRIC'S PORTION OF WORK.

17. AUTHORITY

ALL CONSTRUCTION, RESTORATION WORK, AND INSPECTION SHALL BE SUBJECT TO WHICHEVER GOVERNMENTAL AGENCY HAS AUTHORITY OVER THE WORK.

18. SPECIFICATIONS

CONSTRUCTION OF HAWAIIAN ELECTRIC'S UNDERGROUND FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISIONS OF HAWAIIAN ELECTRIC SPECIFICATIONS CS7001, CS7003, CS7202, CS9301, AND CS9401 AND APPLICABLE HAWAIIAN ELECTRIC STANDARDS.

19. CONSTRUCTION

CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES TO PROPERLY PERFORM AND FULLY COMPLETE ALL WORK SHOWN ON THE CONTRACT, DRAWINGS, AND SPECIFICATIONS. ALL MATERIALS SHALL BE NEW AND MANUFACTURED IN THE UNITED STATES OF AMERICA. ALL MANHOLE, HANDHOLE, AND DUCTLINE INSTALLATIONS SHALL BE INSPECTED AND APPROVED BY HAWAIIAN ELECTRIC PRIOR TO EXCAVATION AND PRIOR TO PLACING CONCRETE. CONTRACTOR SHALL NOTIFY HAWAIIAN ELECTRIC'S INSPECTION GROUP AT 543-4325 AT LEAST FIVE (5) WORKING DAYS PRIOR TO INSTALLING FACILITIES OR PLACING CONCRETE.

CONTRACTOR TO COORDINATE WORK TO BREAK INTO HAWAIIAN ELECTRIC'S EXISTING ELECTRICAL FACILITIES WITH HAWAIIAN ELECTRIC'S INSPECTION GROUP AT 543-4325 AT LEAST TEN (10) WORKING DAYS IN ADVANCE.

20. STAKEOUT

THE CONTRACTOR SHALL ARRANGE FOR TONEOUTS OF ALL UNDERGROUND FACILITIES AND SHALL STAKEOUT ALL PROPOSED HAWAIIAN ELECTRIC FACILITIES WITHIN THE PROJECT AREA SO AS TO NOT CONFLICT WITH ANY UTILITY (EXISTING OR PROPOSED) AND ANY PROPOSED CONSTRUCTION OR IMPROVEMENT WORK FOR VERIFICATION BY HAWAIIAN ELECTRIC BEFORE PROCEEDING WITH HAWAIIAN ELECTRIC WORK.

21. DUCTLINES

ALL DUCTLINE INSTALLATIONS SHALL BE PVC SCHEDULE 40 ENCASED IN CONCRETE, UNLESS OTHERWISE NOTED. ALL COMPLETED DUCTLINES SHALL BE MANDREL TESTED BY THE CONTRACTOR IN THE PRESENCE OF HAWAIIAN ELECTRIC'S INSPECTOR USING HAWAIIAN ELECTRIC'S STANDARD PRACTICE. THE CONTRACTOR SHALL INSTALL 1800# TENSILE STRENGTH MULETAPE PULL LINE IN ALL COMPLETED DUCTLINES AFTER MANDREL TESTING IS COMPLETE.

22. JOINT POLE REMOVAL

THE LAST JOINT POLE OCCUPANT OFF THE POLES SHALL REMOVE THE POLES.

23. AS-BUILT PLANS

THE CONTRACTOR SHALL PROVIDE HAWAIIAN ELECTRIC WITH A SET OF ELECTRONIC AND HARD COPY PLANS OF EACH SHEET SHOWING THE OFFSETS, STATIONING, AND VERTICAL ELEVATION OF THE DUCT LINE(S) CONSTRUCTED.

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CHERYL M. PALESH
LICENSED PROFESSIONAL ENGINEER
No.5952-C
HAWAII, U.S.A.

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

APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

GENERAL NOTES – 2

BELT COLLINS HAWAII LLC		PROJECT NO.	DRAWING NO.
DESIGN BY: CMP	CHECKED BY: ACR	CCR-17-6251B	C-002
DRAWN BY: DK	APPROVED BY: CMP	DATE	SHEET
SCALE: AS SHOWN		OCT 2019	4 OF 50 SHTS.

Tue, 22 Oct 2019 - 7:55am
N:\WCC Uluwehi\2017\04003.04 Graphics\CAD\Sheets\C-002 General Notes – 2.dwg

LOT Q-2-C-2-A
T.M.K. 4-5-23: 014 (POR.)

PARCEL 1
T.M.K. 4-5-23: 014 (POR.)

TRUE NORTH
SCALE: 1 IN = 20 FT.

INSTALL COMPOST FILTER SOCK, SEE DTL 2/C-101

CLEAR AREA FOR SURFACE MOUNTED STEEL CONDUIT SEE DTL E601

TEMPORARILY REMOVE SIGN AND REINSTALL UPON COMPLETION

INSTALL COMPOST FILTER SOCK, SEE DTL 2/C-101

DEMOLISH AND REMOVE EXIST TREE (TYP) CLEAR AND GRUB AREA ALONG SEWER AND WATER ALIGNMENT

REMOVE AND DISPOSE OF EXIST CI GRATE, SEE DWG NO. C-200

INSTALL TRENCH DRAIN PROTECTION, SEE DTL 1/C-101

TEMPORARILY REMOVE AND INSTALL EXIST CHAINLINK FENCE FOR ELEC WORK SEE DWG E601

INSTALL COMPOST FILTER SOCK, SEE DTL 2/C-101

INSTALL COMPOST 20 LF FILTER SOCK, SEE DTL 2/C-101

INSTALL DRAIN INLET PROTECTION, SEE DTL 1/C-101

SAW CUT EXIST AC FOR NEW ELECTRICAL CONDUIT SEE ELECTRICAL PLANS

SUGGESTED STAGING AREA (APPROX. 800 SF)

INSTALL SILT FENCE, SEE DTL 1/ C-102 (TYP)

INSTALL CONSTRUCTION ENTRANCE & EXIT, SEE DTL 2/ C-102 (TYP)

TEMPORARILY REMOVE AND INSTALL EXIST CHAINLINK FENCE

SAWCUT EXIST AC FOR NEW SEWER LINE TRENCH, SEE DTL 2/ C-300 (TYP)

SAWCUT EXIST AC ALONG CURB

PROJECT LIMITS

SAND BAG SILT COLLECTION BARRIER SEE DETAIL 3/C-102

TIRE WASH AREA

SAWCUT EXIST AC FOR NEW WATER LINE TRENCH, SEE DTL 3/ C-300 (TYP) FOR LAYOUT SEE DWG C-200

CURB INLET PROTECTION, SEE DTL 3/C-101

BANYAN DRIVE

GREEN HOUSE

BUILDING

LEGEND

- SAWCUT LINE
- SILT FENCE
- CURB INLET PROTECTION
- DRAIN INLET PROTECTION
- COMPOST FILTER SOCK,
- PROJECT LIMITS
- CONTRACTOR STORAGE AND STAGING AREA
- TIRE WASH AREA
- RUNOFF FLOW DIRECTION
- DEMOLITION AND REMOVE TREES AND VEGETATION

LIST OF REQUIRED BMPs

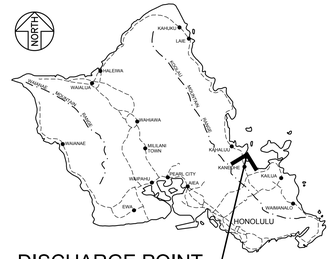
PRE-CONSTRUCTION STRUCTURAL BMPs
- PERIMETER CONTROL -COMPOST FILTER SOCK
- STABILIZED CONSTRUCTION ENTRANCE/EXIT
- DRAIN INLET PROTECTION

DURING CONSTRUCTION STRUCTURAL BMPs
- TEMPORARY STABILIZATION
- CONCRETE WASH MANAGEMENT
- BMPs FOR STOCKPILES, STAGING AREA, MATERIAL STORAGE, ETC.*

* CONTRACTOR SHALL INCLUDE THESE BMPs IN THE REVISED EROSION CONTROL PLANS, WHICH SHALL BE SUBMITTED TO THE CITY INSPECTORS FOR THEIR RECORDS.

POST-CONSTRUCTION STRUCTURAL BMPs
- PERMANENT STABILIZATION (GRASS)

GOOD HOUSEKEEPING BMPs
- SEE DWG C-101 FOR NOTES



DISCHARGE POINT

KANE`OHE BAY
CLASS AA MARINE WATER
N 21°5'20"
W 157°47'6"

ISLAND OF OAHU
LOCATION MAP

NOT TO SCALE

NORTH

DEMOLITION, EROSION, AND SEDIMENT CONTROL PLAN (CATEGORY 1B)

SCALE: 1"=20'

GRAPHIC SCALES

20 0 20 40

SCALE: 1" = 20'

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CHERYL M. PALESH
LICENSED PROFESSIONAL ENGINEER
No.5952-C
HAWAII, U.S.A.

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

APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

DEMOLITION, EROSION, AND SEDIMENT CONTROL PLAN (CATEGORY 1B)

BELT COLLINS HAWAII LLC		PROJECT NO.	DRAWING NO.
DESIGN BY: CMP	CHECKED BY: ACR	CCR-17-6251B	C-100
DRAWN BY: DK	APPROVED BY: CMP	DATE: OCT 2019	SHEET: 5 OF 50 SHTS.
SCALE: AS SHOWN			

Tue, 29 Oct 2019 - 10:20am
M:\WCC Uluwehi\2017\004010\04 Graphics\C4D\Sheets\C-100 Demolition, Erosion, and Sediment Control Plan (CATEGORY 1B).dwg

EROSION PREVENTION/ SEDIMENT CONTROL NOTES:

1. THE CONTRACTOR SHALL FOLLOW THE GUIDELINES IN THE CITY AND COUNTY OF HONOLULU'S "RULES RELATING TO WATER QUALITY"
2. REGULARLY INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROLS TO ENSURE CONTINUED PERFORMANCE
3. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY CONSTRUCTION IS INITIATED.
4. SLOPE PROTECTION SLOPE PROTECTION IS REQUIRED ON AREAS WITH SLOPES GREATER THAN 15% AND ON AREAS OF MODERATE SLOPE THAT ARE PRONE TO EROSION UNLESS THEY ARE BEING ACTIVELY WORKED. USE DIVERSION UPSTREAM OF SLOPE (DIKES, SWALES, SLOPE DRAINS) TO DIVERT WATER AROUND THE SLOPE. PROVIDE A 10-FT BUFFER ZONE AT THE TOE OF SLOPE. ONLY 5 ACRES MAY BE DISTURBED AT ANYTIME ON SLOPES GREATER THAN 15%.
5. TEMPORARY STABILIZATION
   TEMPORARY STABILIZATION IS REQUIRED ON DISTURBED AREAS WHICH ARE AT FINAL GRADE OR WHEN THE DISTURBED AREA WILL NOT BE WORKED FOR 14 CONSECUTIVE DAYS OR MORE.
6. PERMANENT STABILIZATION ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED USING VEGETATIVE COVERING, PAVEMENT, OR EQUIVALENT, PRIOR TO REMOVING EROSION AND SEDIMENT MEASURES. TRAPPED SEDIMENT AND AREAS OF DISTURBED SOIL WHICH RESULT FROM THE REMOVAL OF THE TEMPORARY MEASURES SHALL BE IMMEDIATELY AND PERMANENTLY STABILIZED.
7. PRESERVE EXISTING VEGETATION CLEARLY MARK THE AREAS TO BE PRESERVED WITH FLAGS OR TEMPORARY FENCING. WHERE TEMPORARY FENCING IS USED, FENCING MUST BE ADEQUATELY SUPPORTED BY POSTS AND MAINTAINED IN AN UPRIGHT POSITION.
8. MINIMIZE SOIL COMPACTION AREAS WHERE FINAL STABILIZATION OR INFILTRATION PRACTICES WILL BE INSTALLED SHALL BE PROTECTED FROM EXCESSIVE COMPACTION DURING CONSTRUCTION. VEHICLE AND EQUIPMENT USE SHALL BE RESTRICTED OR TECHNIQUES TO CONDITION THE SOILS TO SUPPORT VEGETATION SHALL BE IMPLEMENTED IN THE AREAS THAT HAVE BEEN COMPACTED AND ARE DESIGNATED TO REMAIN VEGETATIVE OR POST-CONSTRUCTION INFILTRATION AREAS. CLEARLY MARK THE AREAS TO BE AVOIDED WITH FLAGS OR TEMPORARY FENCING. WHERE TEMPORARY FENCING IS USED, FENCING MUST BE ADEQUATELY SUPPORTED BY POSTS AND MAINTAINED IN AN UPRIGHT POSITION.
9. PERIMETER CONTROLS PERIMETER CONTROLS ARE REQUIRED DOWNSLOPE OF ALL DISTURBED AREAS. MAINTAIN DOWNSTREAM VEGETATED BUFFER AREA
10. INLET PROTECTION
    - ALL STORM DRAIN INLETS ONSITE AND THOSE OFFSITE WHICH MAY RECEIVE RUNOFF FROM THE SITE SHALL USE AN INLET PROTECTION DEVICE UNLESS THEY ARE DIRECTED TO A SEDIMENT BASIN.
    - SEDIMENT LEVELS MAY NOT EXCEED ONE THIRD OF THE HEIGHT OF A SEDIMENT BARRIER OR INLET PROTECTION DEVICE AT ANY POINT ALONG THE LENGTH OF THE SEDIMENT BARRIER OR THE INLET PROTECTION DEVICE.
    - SEDIMENT BARRIERS AND INLET PROTECTION DEVICES MUST BE UNCLOGGED AND CLEANED WHEN PERFORMANCE IS COMPROMISED.
    - TORN, WEATHERED OR SAGGING SEDIMENT BARRIERS OR INLET PROTECTION DEVICES MUST BE REPAIRED OR REPLACED IMMEDIATELY.
11. TRACKING CONTROL
    - MINIMIZE SEDIMENT TRACK-OUT ONTO OFF-SITE STREETS, OTHER PAVED AREAS, AND SIDEWALKS FROM VEHICLES EXITING THE CONSTRUCTION SITE BY RESTRICTING VEHICLE TRAFFIC TO PROPERLY DESIGNATED AREAS AND USING ADDITIONAL CONTROLS TO REMOVE SEDIMENT FROM VEHICLE TIRES PRIOR TO EXITING THE SITE.
    - VEHICULAR PARKING AND MOVEMENTS ON PROJECT SITES MUST BE CONFINED TO PAVED SURFACES OR PREDEFINED PARKING AREAS AND VEHICLE PATHS, WHICH SHALL BE MARKED WITH FLAGS OR BOUNDARY FENCING.
    - ALL POLLUTANTS AND MATERIALS THAT ARE DROPPED, WASHED, TRACKED, SPILLED, OR OTHERWISE DISCHARGED FROM A PROJECT SITE TO OFF-SITE STREETS, OTHER PAVED AREAS, SIDEWALKS OR THE MS4 MUST BE CLEANED USING DRY METHODS SUCH AS SWEEPING OR VACUUMING.
    - WASHING POLLUTANTS AND MATERIALS THAT ARE DISCHARGED FROM THE PROJECT SITE TO THE MS4 INTO DRAIN INLETS OR CATCH BASINS IS PROHIBITED UNLESS THE MATERIAL IS SEDIMENT AND THE INLETS ARE DIRECTED TO A SEDIMENT BASIN OR SEDIMENT TRAP.
12. BEST MANAGEMENT PRACTICES (BMPS) SHALL NOT BE REMOVED UNTIL FINAL STABILIZATION IS COMPLETE FOR THAT PHASE.
13. REFER TO CITY AND COUNTY OF HONOLULU BEST MANAGEMENT PRACTICES MANUAL- CONSTRUCTION, FOR MORE INFORMATION ON BMPS
14. THE FOLLOWING BMPS WERE DETERMINED TO BE NOT APPLICABLE. BASED ON THE SPECIFIC SITE CONDITIONS A BRIEF EXPLANATION OF WHY EACH OMITTED BMP IS UNNECESSARY OR IMPRACTICABLE HAS BEEN PROVIDED UNDER SEPARATE DOCUMENTATION TO DPP. AS CONSTRUCTION PROGRESSES, REVISIONS MAY BE NECESSARY AND WILL BE PROVIDED TO DPP INSPECTORS.
    - DIVERSION BMPs TO DIVERT UPSTREAM RUNOFF AROUND DISTURBED AREAS OF THE SITE
    - VELOCITY DISSIPATION DEVICES
    - SEDIMENT BARRIERS
15. THE OWNER OF THE PROPERTY OR THEIR AUTHORIZED AGENT MUST DESIGNATE A PERSON RESPONSIBLE FOR IMPLEMENTATION OF THE ESCP AT THE PROJECT SITE ("ESCP COORDINATOR") PRIOR TO PERMIT ISSUANCE USING THE FORM IN APPENDIX A TO THE RULES RELATED TO WATER QUALITY.
16. NOTIFY DPP IN WRITING TWO WEEKS PRIOR TO STARTING WORK.
17. CONTRACTOR SHALL SUBMIT A WRITTEN PROJECT SCHEDULE FOR APPROVAL BY DIRECTOR DPP TWO WEEKS PRIOR TO START. SCHEDULE MUST ESTABLISH SEQUENCE OF WORK IDENTIFYING LAND DISTURBING ACTIVITIES, BMPS IMPLEMENTATION PER THE ESCP, AND INSPECTIONS, MAINTENANCE AND REMOVAL OF TEMPORARY BMPS. SCHEDULE IS TO BE BASED ON SPECIFIC DATES OR MILESTONES. SCHEDULE TO ADDRESS MINIMIZING SOIL EXPOSURE AND GROUND DISTURBING ACTIVITIES.
18. INSPECTIONS WILL BE PERFORMED WEEKLY.

RAIN RESPONSE PLAN:

THE FOLLOWING WILL BE PERFORMED WHEN RAIN IS IMMINENT OR IS FORECASTED IN THE NEXT 48 HOURS:

1. TEMPORARY SUSPENSION OF ACTIVE TRENCHING.
2. INSPECT ALL PERIMETER CONTROLS AND INLET PROTECTION DEVICES, AND MAINTAIN AS NEEDED. REINSTALL ANY PERIMETER CONTROLS THAT WERE REMOVED DUE TO ACTIVE WORK IN THE AREA. IF A SEVERE STORM IS EXPECTED, REMOVE INLET PROTECTION DEVICES TO PREVENT FLOODING ON SURROUNDING STREETS.
3. COVER OR RELOCATE MATERIAL STOCKPILES AND LIQUID MATERIAL CONTAINERS TO AVOID CONTACT WITH RAINWATER.
4. PLACE SPILL PANS OR OIL-ONLY SPILLED PADS UNDER CONSTRUCTION VEHICLES TO PREVENT RUNOFF FROM CONTACTING ANY SPILLED PETROLEUM PRODUCTS. PROPERLY DISPOSE OF ANY ACCUMULATED OILY WATER AFTER THE RAIN EVENT.
5. RE-INSPECT AFTER THE RAIN EVENT AND REPLACE OR MAINTAIN BMPS AS NEEDED.

GOOD HOUSEKEEPING BMPS:

1. STREET SWEEPING AND VACUUMING

   ALL POLLUTANTS DISCHARGED FROM CONSTRUCTION SITE TO OFF-SITE AREAS MUST BE SWEPT OR VACUUMED EACH DAY BEFORE LEAVING THE JOB SITE.
2. MATERIALS DELIVERY, STORAGE, AND USE MANAGEMENT

   PREVENT, REDUCE, OR ELIMINATE THE DISCHARGE OF POLLUTANTS FROM MATERIAL DELIVERY, STORAGE, AND USE TO THE STORM WATER SYSTEM OR WATERCOURSES BY MINIMIZING THE STORAGE OF HAZARDOUS MATERIALS ONSITE, STORING MATERIALS IN A DESIGNATED AREA, OR INSTALLING SECONDARY CONTAINMENT. CONSTRUCTION MATERIALS, WASTE, TOXIC AND HAZARDOUS SUBSTANCES, STOCKPILES, AND OTHER SOURCES OF POLLUTION SHALL NOT BE STORED IN BUFFER AREAS, NEAR AREAS OF CONCENTRATED FLOW, OR AREAS ABUTTING THE MS4, RECEIVING WATERS, OR DRAINAGE IMPROVEMENTS THAT DISCHARGE OFF-SITE. PRIMARY AND SECONDARY CONTAINMENT CONTROLS AND COVERS SHALL BE IMPLEMENTED TO THE MEP.
3. SPILL PREVENTION AND CONTROL

   CREATE AND IMPLEMENT SPILL PREVENTION AND RESPONSE PLANS TO ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO THE MS4 AND RECEIVING WATERS FROM LEAKS AND SPILLS BE REDUCING THE CHANCE FOR SPILLS, ABSORBING, CONTAINING, AND CLEANING UP SPILLS AND PROPERLY DISPOSING OF SPILL MATERIALS. AT A MINIMUM, ALL PROJECTS SHALL CLEANUP ALL LEAKS AND SPILL IMMEDIATELY.
4. HAZARDOUS MATERIALS

   PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM HAZARDOUS WASTE THROUGH PROPER MATERIAL USE AND WASTE DISPOSAL. IN THE EVENT THAT HAZARDOUS MATERIALS ARE DISCHARGED TO THE MS4, THE PROPERTY OWNER OR ESCP COORDINATOR SHALL IMMEDIATELY NOTIFY THE DEPARTMENT OF FACILITIES MAINTENANCE, HONOLULU FIRE DEPARTMENT, AND HONOLULU POLICE DEPARTMENT OF THE DISCHARGE BY TELEPHONE. A WRITTEN REPORT DESCRIBING THE POLLUTANTS THAT WERE DISCHARGED, THE REASONS FOR THE DISCHARGE, AND THE MEASURES THAT HAVE BEEN TAKEN TO THE DIRECTOR NO LESS THAN 3 DAYS AFTER NOTIFICATION BY PHONE.
5. NON-HAZARDOUS MATERIALS

   IN THE EVENT THAT NON-HAZARDOUS MATERIALS ARE DISCHARGED TO THE MS4, THE PROPERTY OWNER OR ESCP COORDINATOR SHALL NOTIFY THE CITY DEPARTMENT OF FACILITIES MAINTENANCE BY TELEPHONE NO LATER THEN THE NEXT BUSINESS DAY. A WRITTEN REPORT DESCRIBING THE POLLUTANTS THAT WERE DISCHARGED, THE REASONS FOR THE DISCHARGE, AND THE MEASURES THAT HAVE BEEN TAKEN OR WILL BE TAKEN TO PREVENT A REOCCURRENCE OF THE DISCHARGE SHALL BE SUBMITTED TO THE DIRECTOR NO LESS THAN 3 DAYS AFTER NOTIFICATION BY PHONE.
6. VEHICLE AND EQUIPMENT CLEANING

   ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM VEHICLE AND EQUIPMENT CLEANING OPERATIONS BY USING OFF-SITE FACILITIES WHEN FEASIBLE, WASHING IN DESIGNATED, CONTAINED AREAS ONLY, AND ELIMINATING DISCHARGES TO THE STORM DRAIN SYSTEM BY EVAPORATING AND/OR TREATING WASH WATER AS APPROPRIATE, OR INFILTRATING WASH WATER FOR EXTERIOR CLEANING ACTIVITIES THAT USE WATER ONLY.
7. VEHICLE AND EQUIPMENT FUELING

   PREVENT FUEL SPILLS AND LEAKS BY USING OFF-SITE FACILITIES, FUELING ONLY IN DESIGNATED AREAS, ENCLOSING OR COVERING STORED FUEL, AND IMPLEMENTING SPILL CONTROLS SUCH AS SECONDARY CONTAINMENT AND ACTIVE MEASURES USING SPILL RESPONSE KITS.
8. VEHICLE AND EQUIPMENT MAINTENANCE

   ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM VEHICLE AND EQUIPMENT OPERATIONS BY USING OFF-SITE FACILITIES WHEN FEASIBLE, PERFORMING WORK IN DESIGNATED AREAS ONLY, USING SPILL PADS UNDER VEHICLES AND EQUIPMENT, CHECKING FOR LEAKS AND SPILLS, AND CONTAINING AND CLEANING UP SPILLS IMMEDIATELY.
9. SOLID WASTE MANAGEMENT

   PREVENT OR REDUCE DISCHARGE OF POLLUTANTS TO THE LAND, GROUNDWATER, AND IN STORM WATER FROM SOLID WASTE OF CONSTRUCTION AND DEMOLITION WASTE BY PROVIDING DESIGNATED WASTE COLLECTION AREAS, COLLECT SITE TRASH DAILY, AND ENSURING THAT CONSTRUCTION WASTE IS COLLECTED, REMOVED, AND DISPOSED OF ONLY AT AUTHORIZED DISPOSAL AREAS.
10. SANITARY/SEPTIC WASTE MANAGEMENT

    TEMPORARY AND PORTABLE SANITARY AND SEPTIC WASTE SYSTEMS SHALL BE MOUNTED OR STAKED IN, WELL-MAINTAINED, AND SCHEDULED FOR REGULAR WASTE DISPOSAL AND SERVICING. SOURCES OF SANITARY AND/OR SEPTIC WASTE SHALL NOT BE STORED NEAR THE MS4 OR RECEIVING WATERS.
11. STOCKPILE MANAGEMENT

    STOCKPILES SHALL NOT BE LOCATED IN DRAINAGE WAYS, WITHIN 50 FEET FROM AREAS OF CONCENTRATED FLOWS, AND ARE NOT ALLOWED IN THE CITY RIGHT-OF-WAY. SEDIMENT BARRIERS OR SILT FENCES SHALL BE USED AROUND THE BASE OF ALL STOCKPILES. STOCKPILES SHALL NOT EXCEED 15 FEET IN HEIGHT. STOCKPILES GREATER THAN 15 FEET IN HEIGHT SHALL REQUIRE 8 FOOT WIDE BENCHING IN ACCORDANCE WITH ROH CHAPTER 14, ARTICLE 15. STOCKPILES MUST BE COVERED WITH PLASTIC SHEETING OR A COMPARABLE MATERIAL IF THEY WILL NOT BE ACTIVELY USED WITHIN 7 DAYS.
12. LIQUID WASTE MANAGEMENT

    LIQUID WASTE SHALL BE CONTAINED IN A CONTROLLED AREA SUCH AS A HOLDING PIT, SEDIMENT BASIN, ROLL-OFF BIN, OR PORTABLE TANK OF SUFFICIENT VOLUME TO CONTAIN THE LIQUID WASTES GENERATED. CONTAINMENT AREAS OF DEVICES MUST BE IMPERMEABLE AND LEAK FREE AND SHOULD NOT BE LOCATED WHERE ACCIDENTAL RELEASE OF THE CONTAINED LIQUID CAN DISCHARGE TO WATER BODIES, CHANNELS, OR STORM DRAINS.
13. CONCRETE WASTE MANAGEMENT

    PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM CONCRETE WASTE BY CONDUCTING WASHOUT OFFSITE OR PERFORMING ONSITE WASHOUT IN A DESIGNATED AREA CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MILLIMETER POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, AND OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL. CONTAINMENT AREAS OR DEVICES SHOULD NOT BE LOCATED WHERE ACCIDENTAL RELEASE OF THE CONTAINED LIQUID CAN DISCHARGE TO WATER BODIES, CHANNELS, OR STORM DRAINS. WASHOUT FACILITIES MUST BE CLEANED, OR SHOULD NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75 PERCENT FULL. ONCE CONCRETE WASTES ARE WASHED INTO THE DESIGNATED AREA AND ALLOWED TO HARDEN, THE CONCRETE SHOULD BE BROKEN UP, REMOVED, AND DISPOSED OF AS SOLID WASTES.
14. CONTAMINATED SOIL MANAGEMENT

    AT MINIMUM, CONTAIN CONTAMINATED MATERIAL SOIL BY SURROUNDING WITH IMPERMEABLE LINED BERMS OR COVER EXPOSED CONTAMINATED MATERIAL WITH PLASTIC SHEETING. CONTAMINATED SOIL SHOULD BE DISPOSED OF PROPERLY IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
15. DUST CONTROL

    DUST FROM THE PROJECT SITE SHALL NOT BE TRANSPORTED OR DISCHARGED TO OFF-SITE AREAS.WORK SHALL BE IN CONFORMANCE WITH AIR POLLUTION STANDARDS OF HAR TITLE 11 CHAPTER 60.1, AIR POLLUTION CONTROL. AT A MINIMUM, DUST SHALL BE CONTROLLED BY SPRINKLING EXPOSED SOLS WITH WATER TO MAINTAIN MOISTNESS AT A DEPTH OF 2 TO 3 INCHES AND NOT GENERATE RUNOFF.

GOOD HOUSEKEEPING BMPS (CONTINUED):

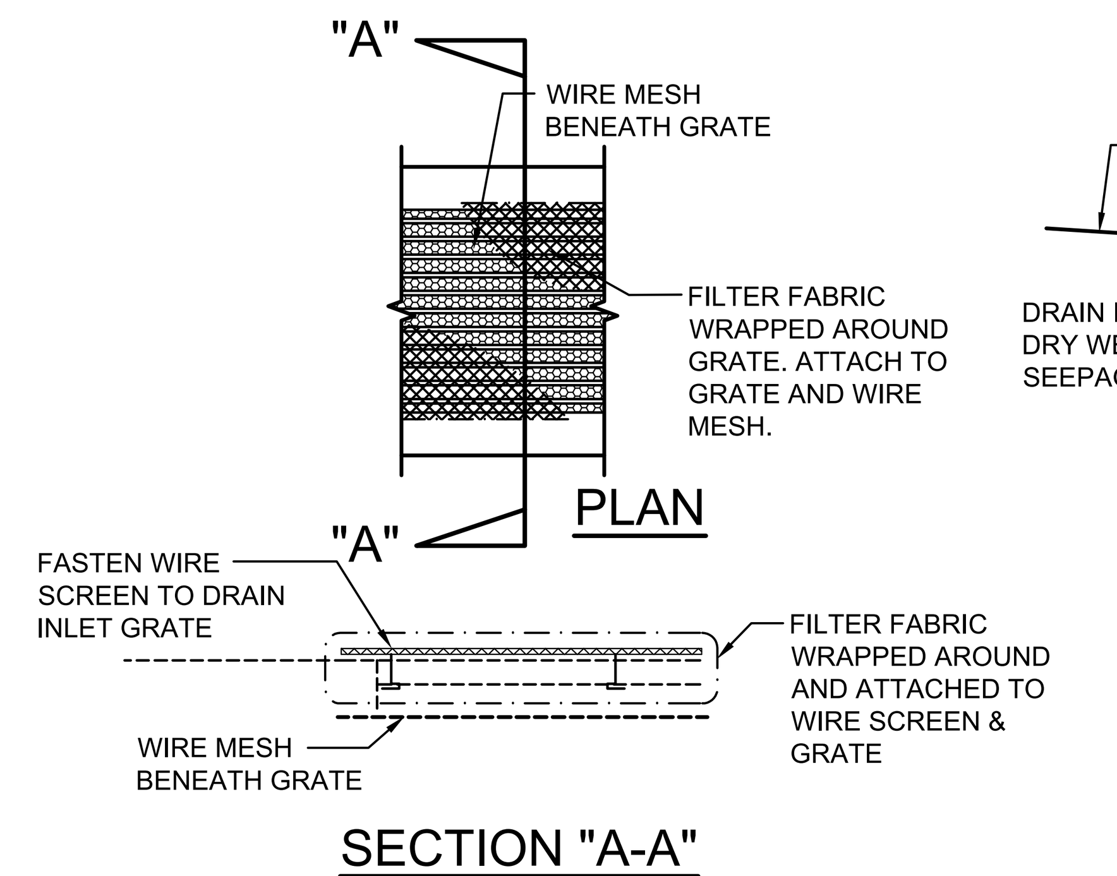
16. DEWATERING OPERATIONS

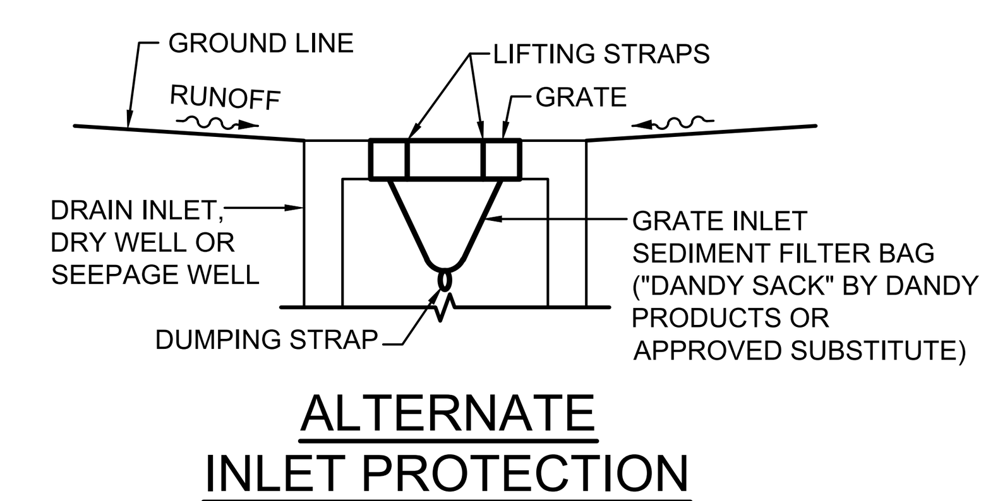
    NON-STORM WATER FROM DEWATERING CANNOT BE DISCHARGED FROM THE SITE WITHOUT PRIOR NOTICE AND APPROVAL FROM THE DPP AND DEPARTMENT OF HEALTH. DEWATERING DISCHARGES SHALL BE KEPT ONSITE USING A SEDIMENT BASIN, SEDIMENT TRAP, WEIR TANK, DEWATERING TANK, FILTRATION SYSTEM, OR OTHER MANUFACTURED SYSTEM.
17. STABILIZED CONSTRUCTION ENTRANCE AND EXIT

    A STABILIZED CONSTRUCTION ENTRANCE AND EXIST SHALL BE PROVIDED BASED ON EROSION AND SEDIMENT CONTROL PLAN DETAILS, AND SHALL BE REGULARLY INSPECTED/MAINTAINED TO ENSURE CONTINUED PERFORMANCE

PROJECT SEQUENCE:

1. INSTALL INLET PROTECTION AND PERIMETER CONTROLS AROUND STAGING AREAS AND MATERIAL STOCKPILES AS NEEDED.
2. PROCEED WITH CONSTRUCTION WITH LEAST POSSIBLE DISTURBANCE OF VEGETATIVE AREAS AND TEMPORARY STRUCTURES.
3. INSTALL PERIMETER CONTROLS AROUND ACTIVE WORK AREAS AT THE END OF EACH BUSINESS DAY IF NOT STABILIZED.
4. PLANT PERMANENT GROUND COVER ACCORDING TO THE EXISTING CONDITIONS AS SOON AS POSSIBLE.
5. REMOVE OR DISMANTLE TEMPORARY EROSION CONTROL STRUCTURES AFTER PERMANENT STABILIZATION.



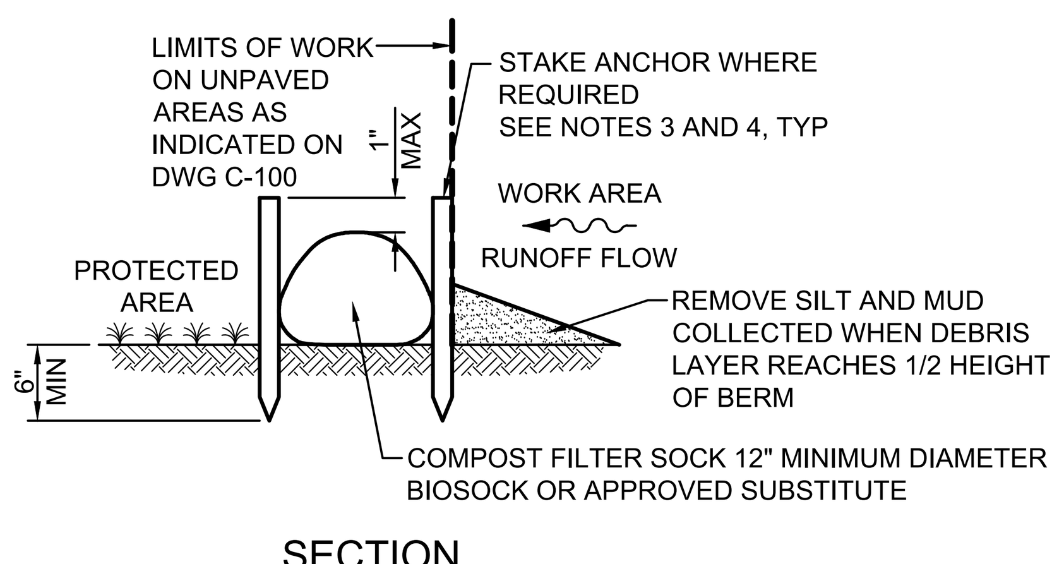


ALTERNATE INLET PROTECTION

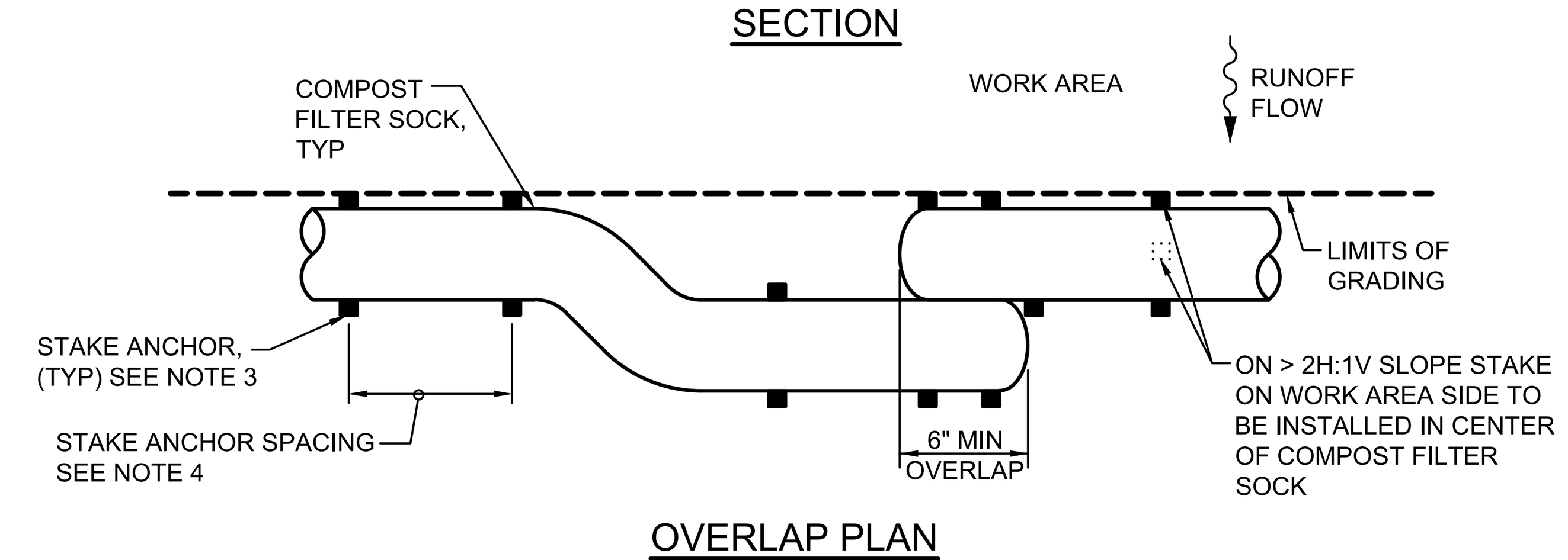
NOTE:
THE CONTRACTOR SHALL REMOVE THE INLET FILTER DURING TIMES OF ABOVE NORMAL RAINFALL EVENTS AND SHALL REPLACE THEM WHEN THE EVENT HAS PASSED.

1 TRENCH DRAIN AND DRAIN INLET PROTECTION DETAIL

NOT TO SCALE



SECTION

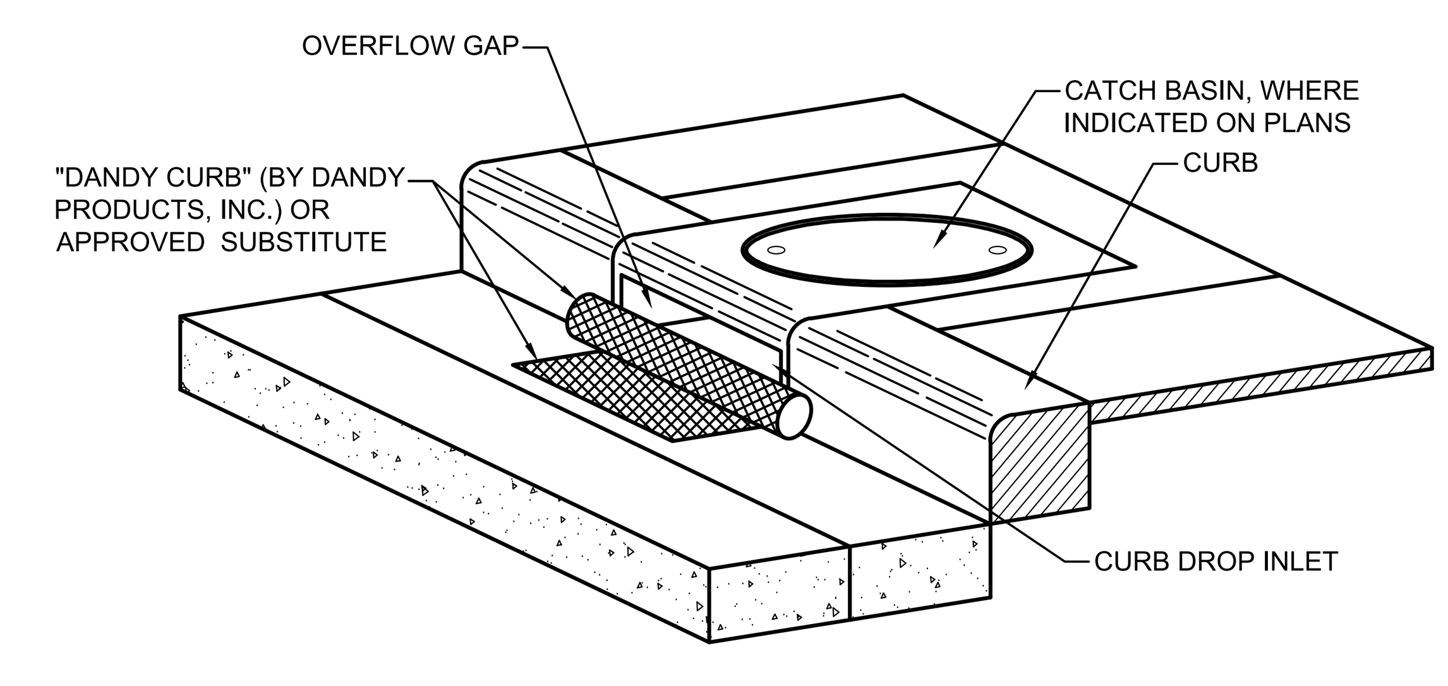


OVERLAP PLAN

NOTES:
1. COMPOST SHALL NOT CONTAIN BIOSOLIDS, SHALL BE BIO-DEGRADABLE AND SHALL COMPLY WITH EPA GUIDELINES AND BE CONSISTENT WITH THE CITY & COUNTY OF HONOLULU STORM WATER BEST MANAGEMENT PRACTICE MANUAL CONSTRUCTION, NOV. 2011.
2. REMOVE SEDIMENT FROM THE UP SLOPE SIDE OF THE COMPOST FILTER SOCK WHEN ACCUMULATION HAS REACHED 1/2 OF THE EFFECTIVE HEIGHT OF THE COMPOST SOCK.
3. 3/4"x3/4"x16" MINIMUM WOODEN STAKE ANCHOR.
4. ON < 4H:1V SLOPE, NO STAKE ANCHOR REQUIRED.
   ON 4H:1V TO 3H:1V SLOPE, STAKE AT 10 FT ON CENTER.
   ON > 3H:1V TO 2H:1V SLOPE, STAKE AT 5 FT TO 10 FT ON CENTER.
   ON > 2H:1V SLOPE, STAKE AT 5 FT ON CENTER, STAKES ON WORK AREA SIDE SHALL BE INSTALLED IN CENTER OF COMPOST FILTER SOCK.

2 COMPOST FILTER SOCK DETAIL

NOT TO SCALE



3 CURB INLET PROTECTION

NOT TO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CHERYL M. PALESH
LICENSED PROFESSIONAL ENGINEER
No.5952-C
HAWAII, U.S.A.

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

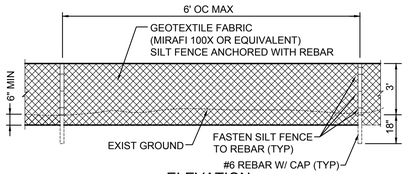
APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

UNIVERSITY OF HAWAII
STATE OF HAWAII

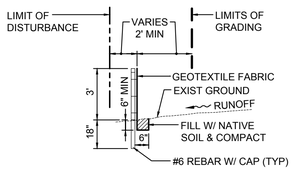
WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

EROSION & SEDIMENT CONTROL NOTES & DETAILS

BELT COLLINS HAWAII LLC		PROJECT NO.	DRAWING NO.
DESIGN BY: CMP	CHECKED BY: ACR	CCR-17-6251B	C-101
DRAWN BY: DK	APPROVED BY: CMP	DATE	SHEET 6
SCALE: AS SHOWN		OCT 2019	OF 50 SHTS



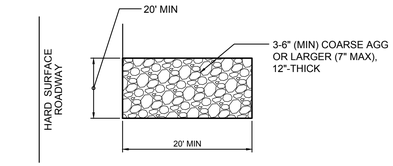
ELEVATION



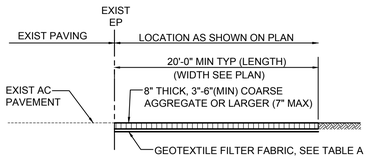
SECTION

NOTE:
REMOVE SEDIMENT FROM THE UP SLOPE SIDE OF THE SILT FENCE WHEN ACCUMULATION HAS REACHED 1/2 OF THE EFFECTIVE HEIGHT OF THE SILT FENCE.

1 SILT FENCE
NOT TO SCALE



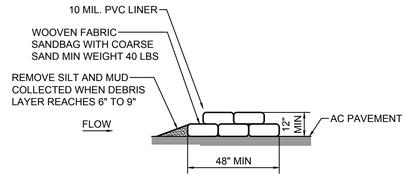
PLAN



SECTION

TABLE A GEOTEXTILE REQUIREMENTS	
PHYSICAL PROPERTY	REQUIREMENTS
GRAB TENSILE STRENGTH	220 LB (ASTM D1682)
ELONGATION FAILURE	60% (ASTM D1682)
MULLEN BURST STRENGTH	430 LB (ASTM D3768)
PUNCTURE STRENGTH	125 LB (ASTM D751, MODIFIED)
EQUIVALENT OPENING	SIZE 40-80 (U.S. STD SIEVE, CW-02215)

2 CONSTRUCTION ENTRANCE & EXIT
NOT TO SCALE



3 SAND BAG BARRIER FOR TIRE WASH CONTAINMENT
NOT TO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

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No.5952-C
HAWAII, U.S.A.

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APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

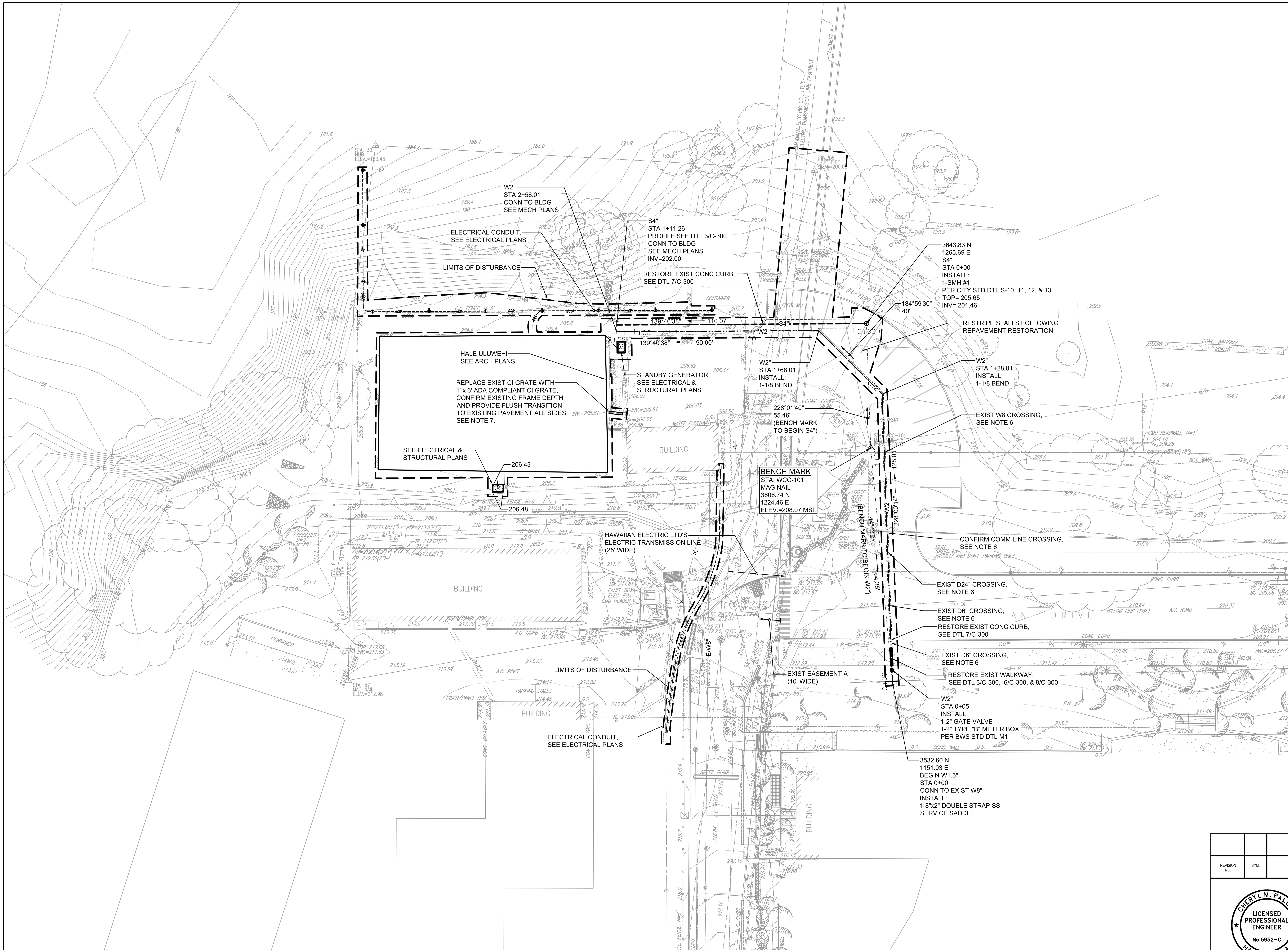
UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

EROSION & SEDIMENT CONTROL DETAILS

BELT COLLINS HAWAII LLC		PROJECT NO. CCR-17-6251B	DRAWING NO. C-102
DESIGN BY: CMP	CHECKED BY: ACR		
DRAWN BY: DK	APPROVED BY: CMP	DATE OCT 2019	SHEET 7 OF 50 SHTS.
SCALE: AS SHOWN			

Tue, 22 Oct 2019 - 7:26pm
M:\WCC Uluwehi\2019\700400\04 Graphics\CAD\Sheets\C-102 Erosion & Sediment Control Details.dwg



SITE & UTILITY PLAN

SCALE: 1"=20'

LEGEND

- — — — LIMITS OF DISTURBANCE
- —S4"— — SEWER LINE
- —·—W2"·— WATER LINE
- EASEMENT/ROW

NOTES:

1. SEE DTL 2/C-300 FOR SEWERLINE TRENCH DETAIL.
2. SEE DTL 7/C-300 FOR CONCRETE CURB DETAIL CONN TO EXIST AC PAVEMENT AND AC PAVEMENT RESTORATION.
3. SEE 6/C-300 FOR TRENCH RESTORATION DETAIL - WALKWAY.
4. UNLESS OTHERWISE INDICATED, PARKING STALLS AND PAVEMENT STRIPING TO MATCH EXISTING.
5. SEE DTL 3/C-300 FOR WATERLINE TRENCH
6. PROBE FOR LOCATION OF EXIST UTILITY LINES CROSSED BY NEW WATER LINE VERIFY CLEARANCES.
7. FIELD VERIFY EXISTING GRATE DIMENSIONS, INCLUDING DEPTH. REPLACEMENT GRATE TO HAVE 1/4- TO 5/16-INCH OPENINGS TO BE HEEL-PROOF AN ADA COMPLIANT. MAXIMUM CLEARANCE AROUND FRAME TO BE WITHIN SAME TOLERANCE. GRATE IS TO BE SAME THICKNESS AS EXISTING AND SIT FLUSH WITHOUT ROCKING. REPLACE GRATE FRAME AS REQUIRED.

GRAPHIC SCALES

20 0 20 40

SCALE: 1" = 20'

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CHERYL M. PALESH LICENSED PROFESSIONAL ENGINEER No.5952-C HAWAII, U.S.A.

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STATE OF HAWAII

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5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

SITE & UTILITY PLAN

BELT COLLINS HAWAII LLC		PROJECT NO.	DRAWING NO.
DESIGN BY: CMP	CHECKED BY: ACR	CCR-17-6251B	C-200
DRAWN BY: DK	APPROVED BY: CMP	DATE	SHEET 8
SCALE: AS SHOWN		OCT 2019	OF 50 SHTS

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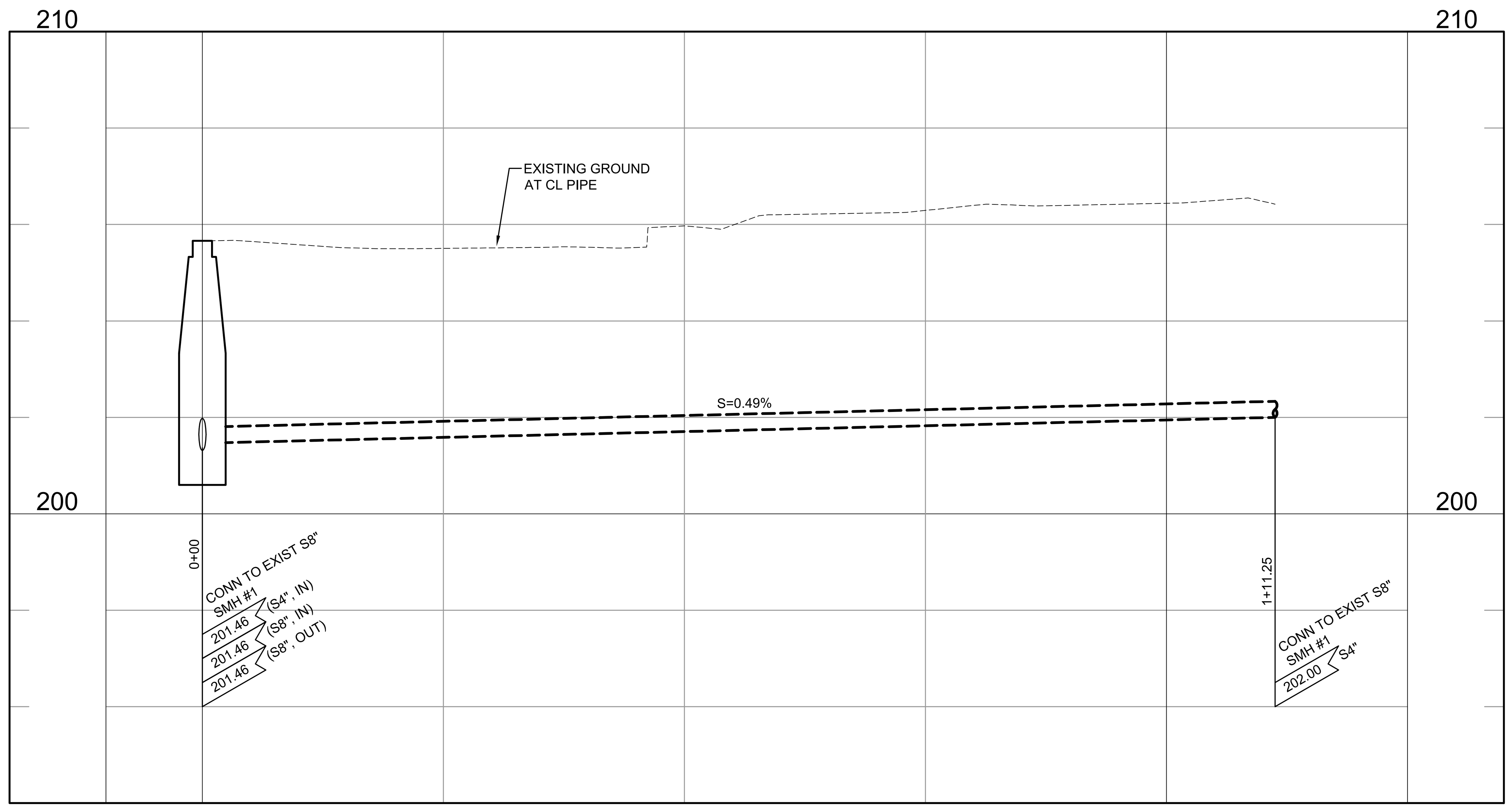
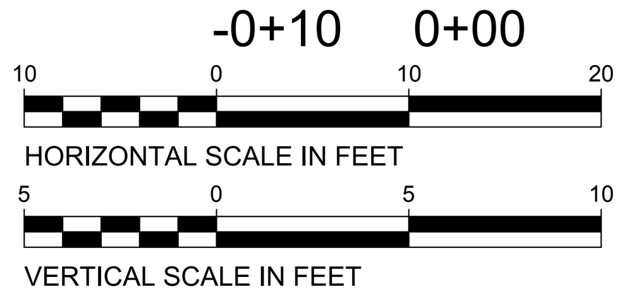
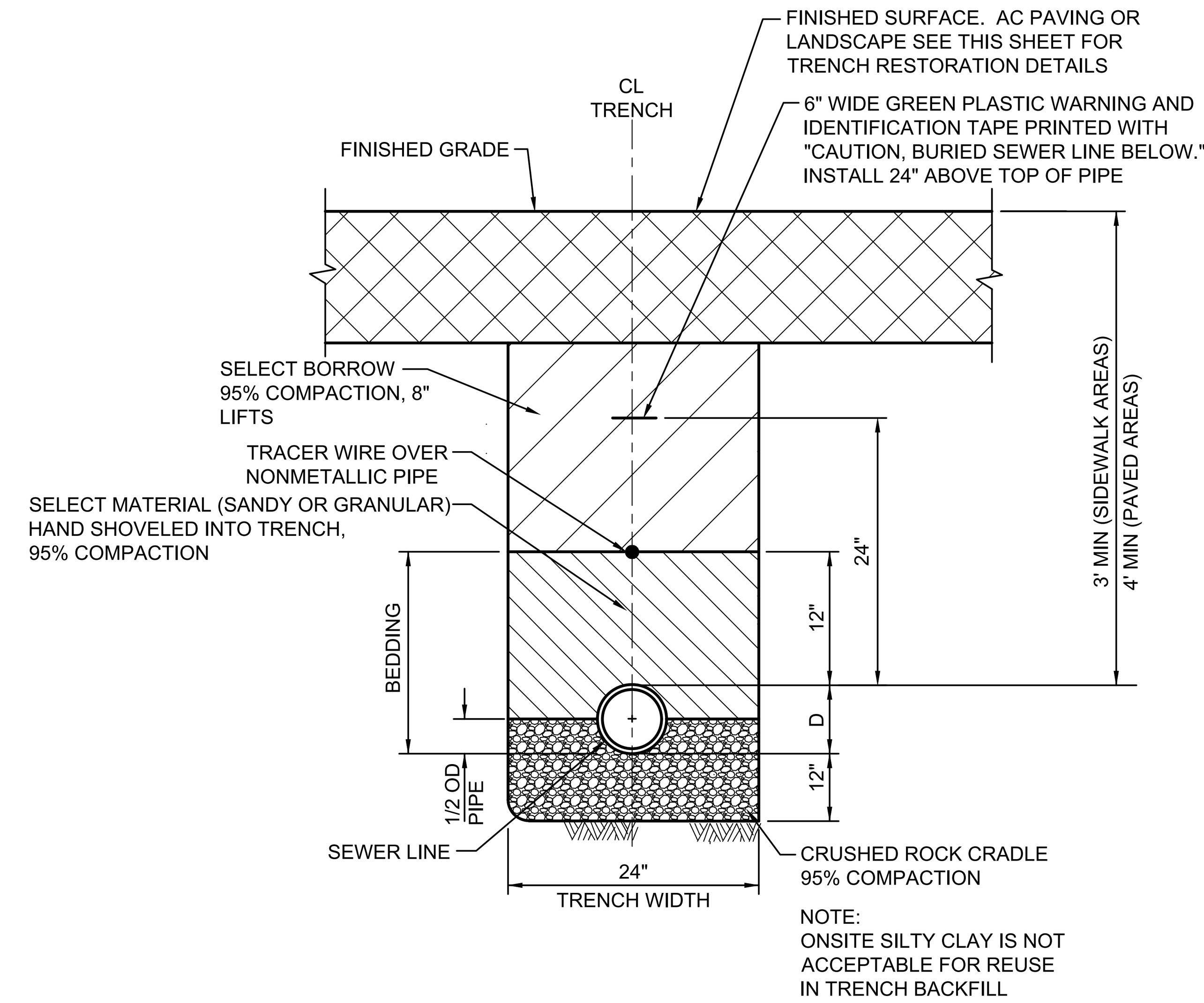
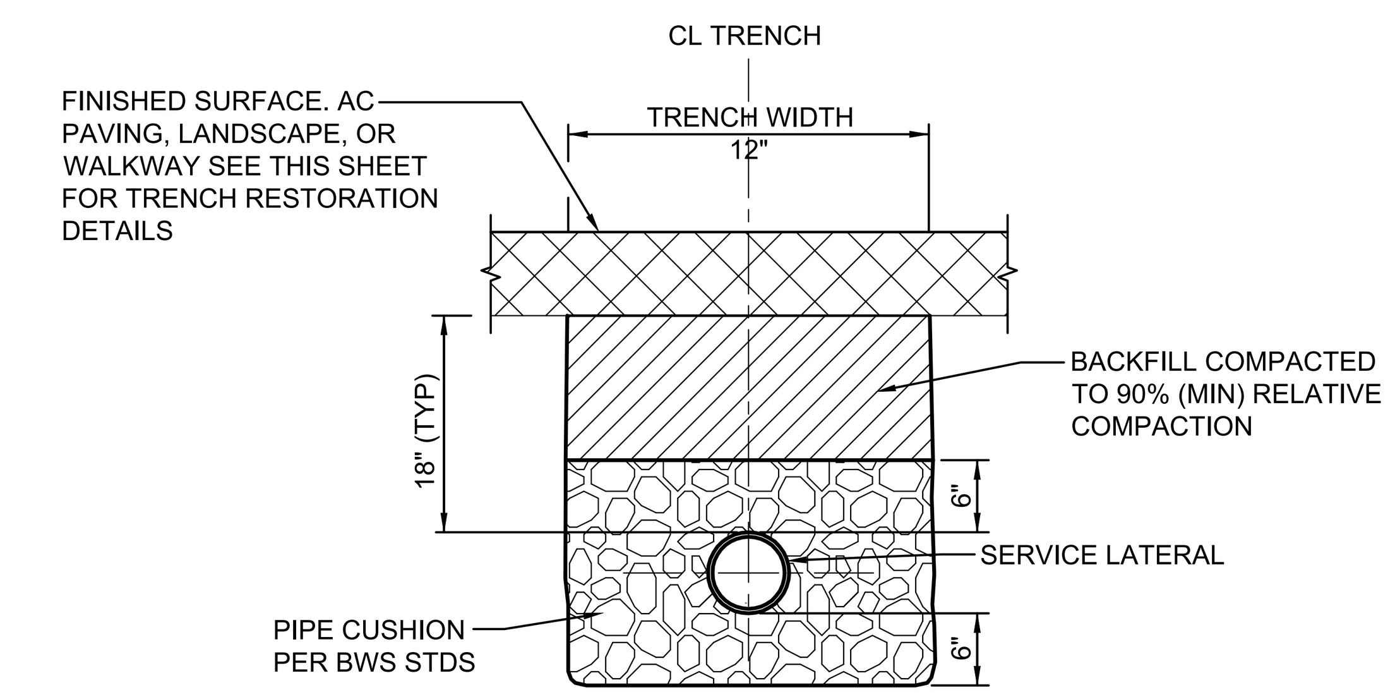




1 PROFILE - S4"
SCALE: HORIZ.1" = 10'
VERT. 1" = 2'



2 SEWERLINE TRENCH DETAIL
NOT TO SCALE



3 WATER LATERAL TRENCH DETAIL
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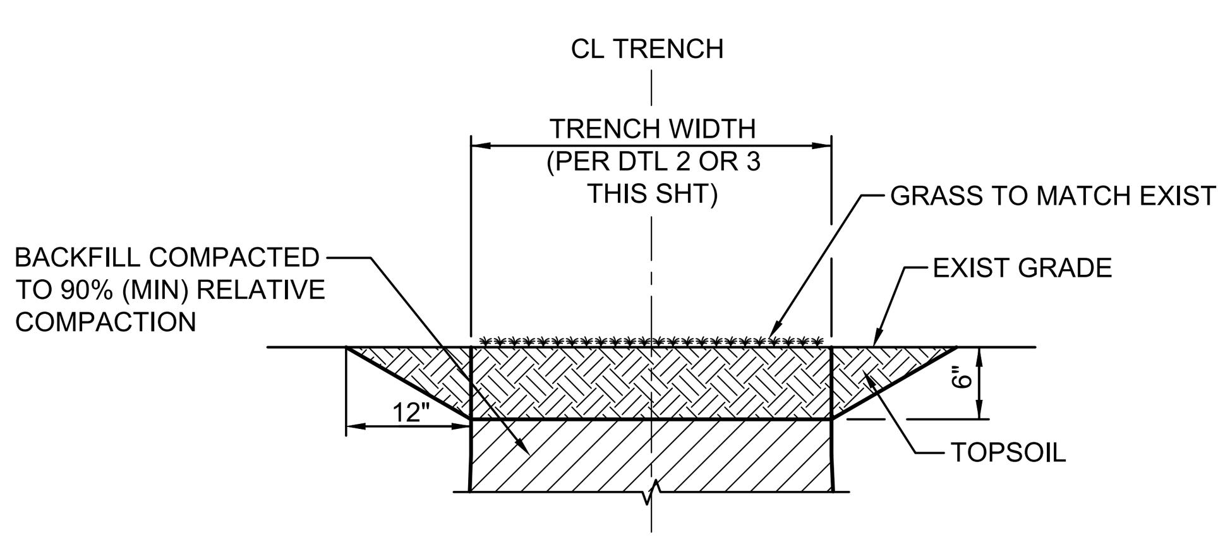

4 TRENCH RESTORATION DETAIL - LANDSCAPE
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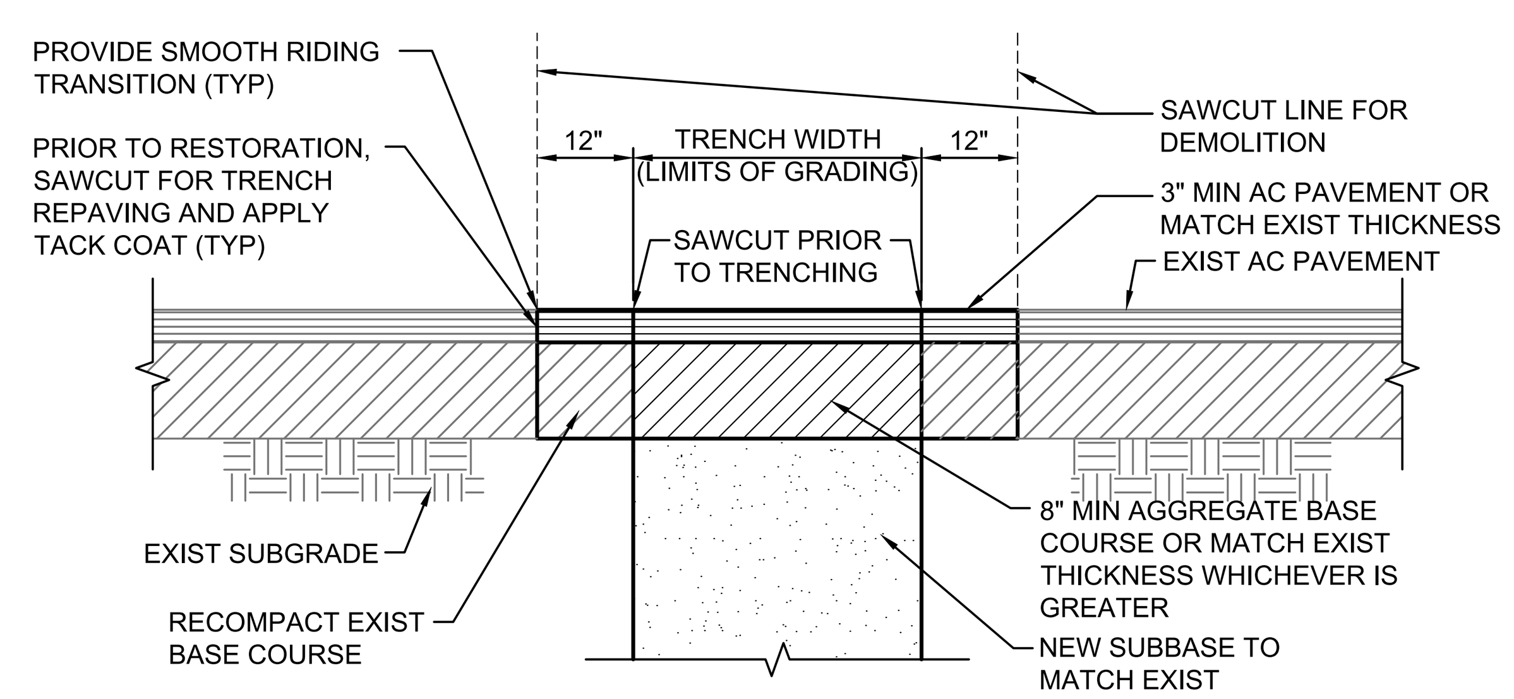
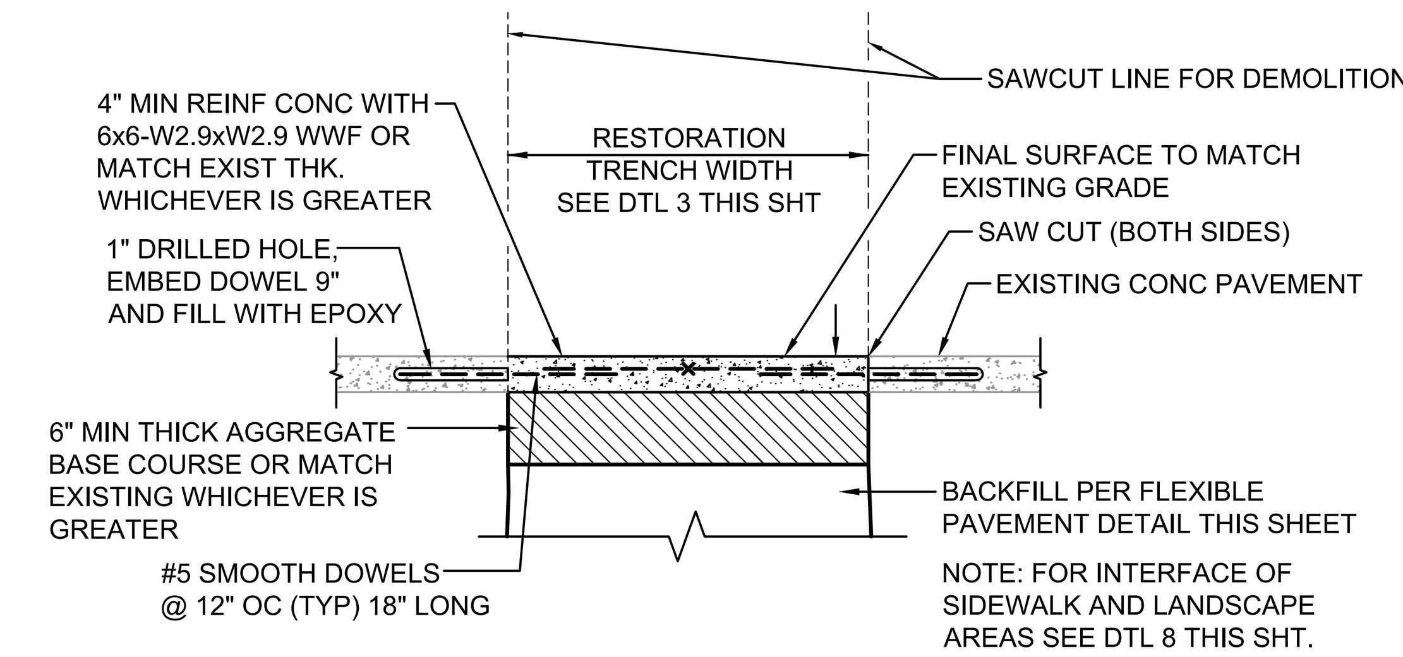
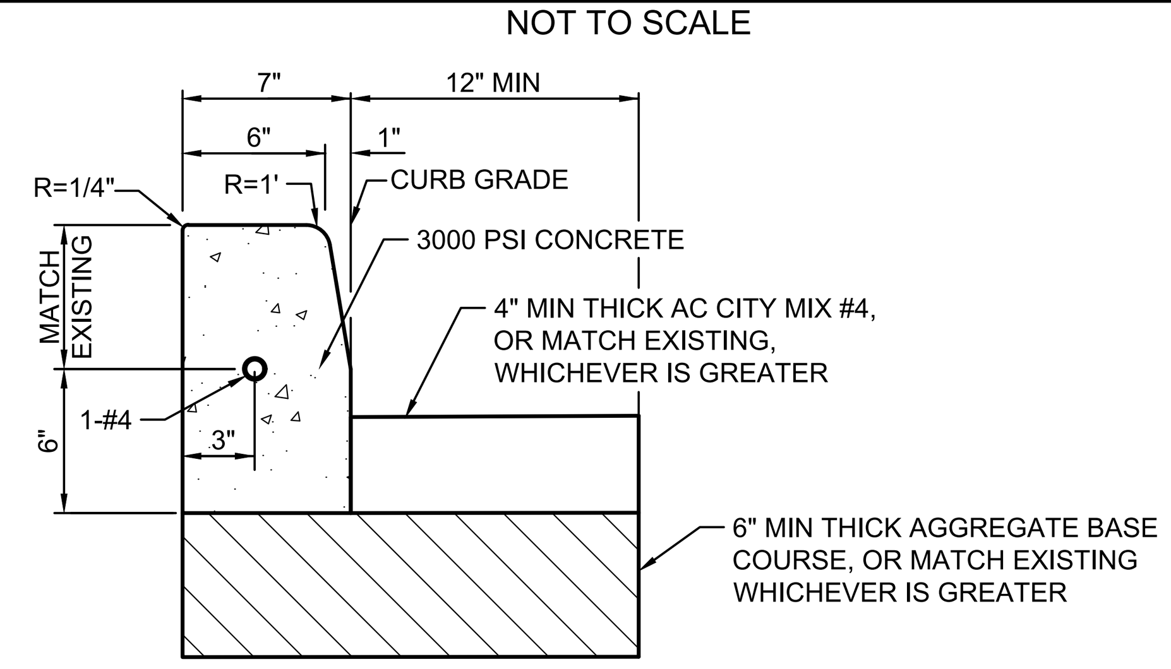


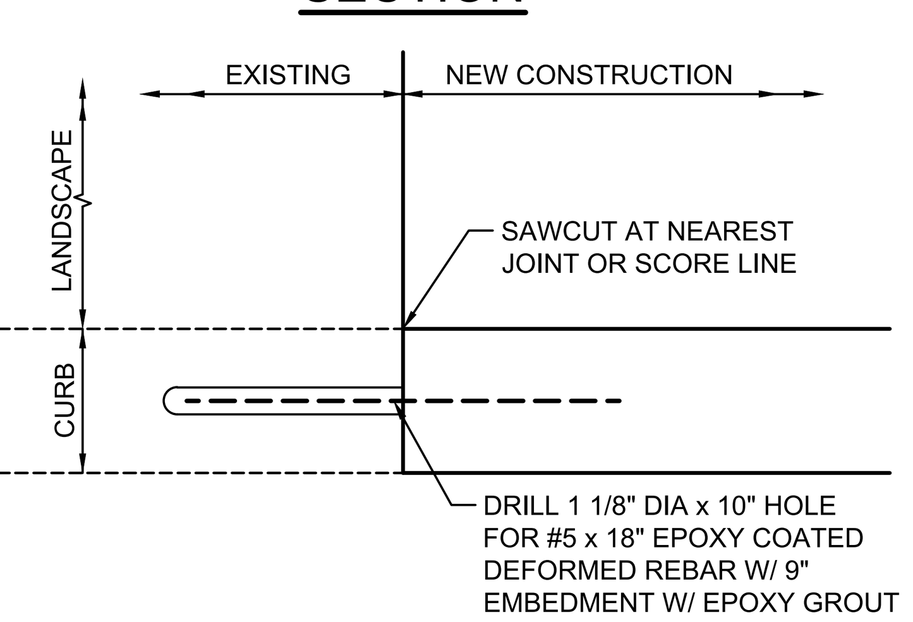
5 TRENCH RESTORATION DETAIL - A.C. PAVEMENT
NOT TO SCALE



6 TRENCH RESTORATION DETAIL - WALKWAY
NOT TO SCALE

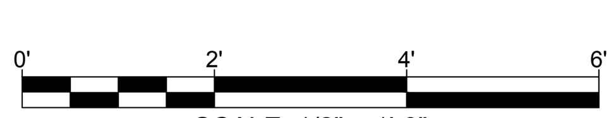


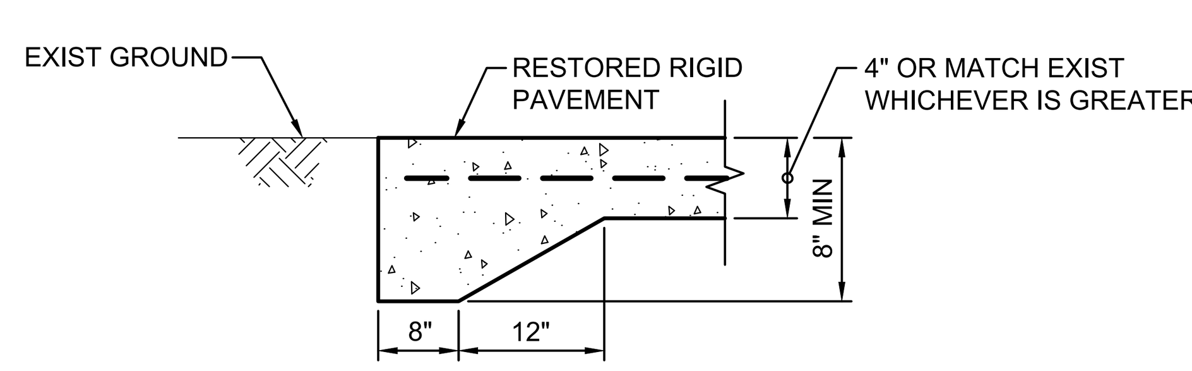
SECTION



PLAN

7 CONCRETE CURB DETAIL
SCALE: 1 1/2"=1'-0"





8 TRANSITION DETAIL AT INTERFACE OF WALKWAY AND LANDSCAPED AREAS
NOT TO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CHERYL M. PALESH
LICENSED PROFESSIONAL ENGINEER
No.5952-C
HAWAII, U.S.A.

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APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

MISCELLANEOUS DETAILS

BELT COLLINS HAWAII LLC		PROJECT NO.	DRAWING NO.
DESIGN BY: CMP	CHECKED BY: ACR	CCR-17-6251B	C-300
DRAWN BY: DK	APPROVED BY: CMP	DATE	SHEET 9
SCALE: AS SHOWN		OCT 2019	OF 50 SHTS

Tue, 22 Oct 2019 - 7:26am
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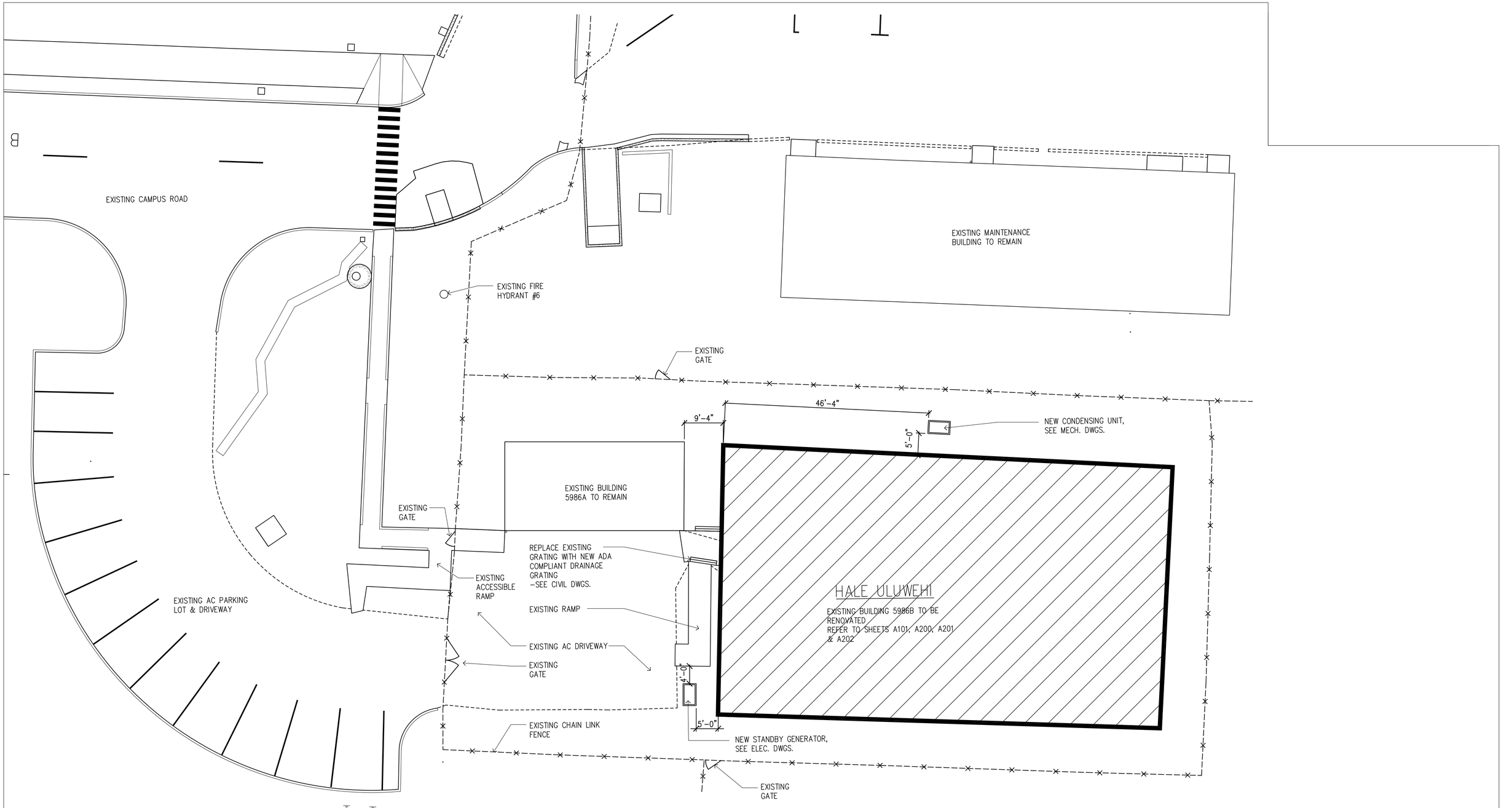

PROJECT DESCRIPTION

ALTERATION TO EXISTING BUILDING 5986B (NO INCREASE TO FLOOR AREA) AS FOLLOWS:

1. REPLACE EXISTING METAL ROOFING AND SIDING WITH NEW METAL ROOFING AND SIDING. REPLACE RUSTED STRUCTURAL STEEL MEMBERS WITH NEW STEEL MEMBERS (SEE STRUCTURAL DRAWINGS). REPLACE EXISTING SHADE CLOTH WITH NEW CHAIN LINK FENCE.
2. NEW CLASSROOMS, OFFICES AND RESTROOMS IN THE EXISTING BUILDING. NEW ROOMS AND CLOSETS TO MEET REQUIREMENTS OF IECC 2015. OFFICES AND CLASSROOMS TO BE AIR CONDITIONED.
3. REFER TO CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS FOR UTILITY WORK.

0 10' 20' 40'

SITE PLAN — SCALE: 1"=10'

1

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CLIFFORD G.S. CHU
LICENSED PROFESSIONAL ARCHITECT
No. 5832
HAWAII, U.S.A.

EXP. 4-30-20

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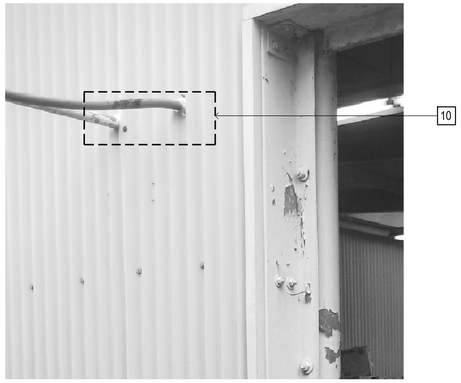
Signature

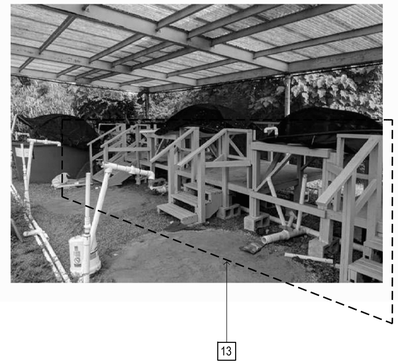
UNIVERSITY OF HAWAII
STATE OF HAWAII

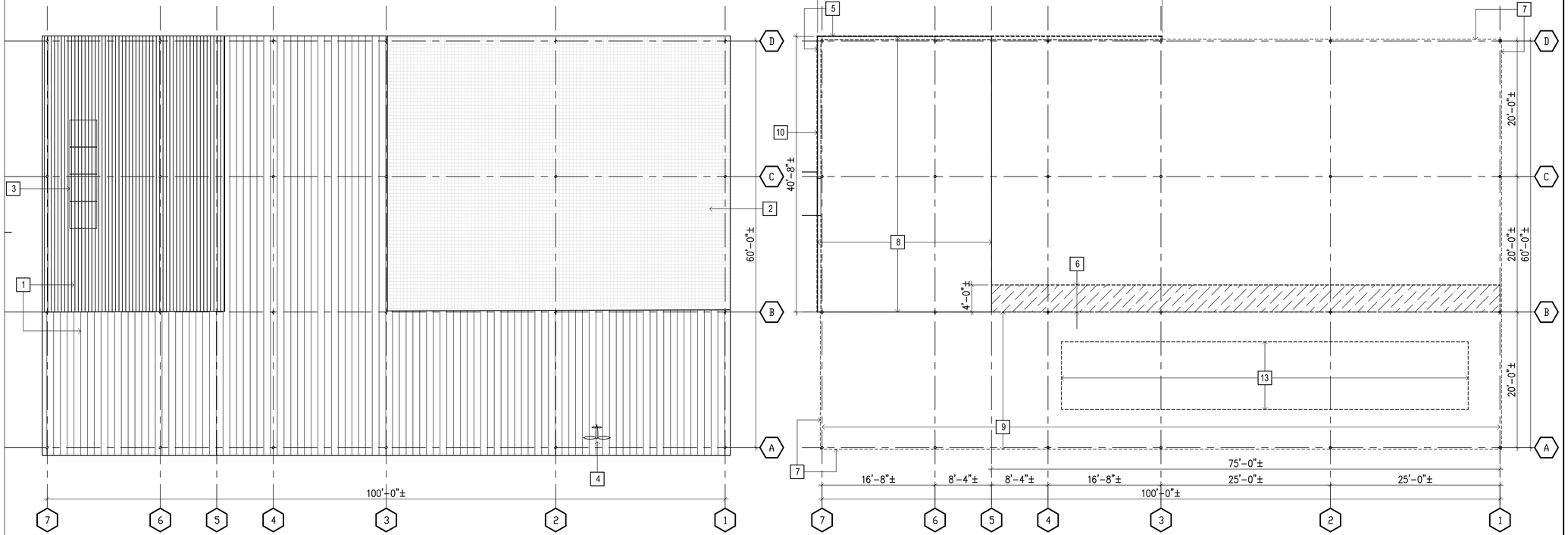
WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

SITE PLAN

BENJAMIN WOO ARCHITECTS		PROJECT NO.	DRAWING NO.
DESIGN BY: CC	CHECKED BY: CC, DC	CCR-17-6251B	A100
DRAWN BY: DC	APPROVED BY: BW	DATE: OCT 2019	SHEET 10 OF 50 SHTS.
SCALE: AS SHOWN			







2 A101 EXISTING/DEMO. ROOF PLAN
SCALE: 1/8" = 1'–0"

1 A101 EXISTING/DEMO. FLOOR PLAN
SCALE: 1/8" = 1'–0"

KEY NOTES:

1. REMOVE EXISTING CORRUGATED METAL ROOFING
2. REMOVE EXISTING SHADE CLOTH AT ROOF
3. REMOVE EXISTING PV PANELS AND SAVE FOR UNIVERSITY USE.
4. REMOVE EXISTING PROPELLER AND SAVE FOR UNIVERSITY USE.
5. REMOVE EXISTING CORRUGATED METAL WALL SIDING
6. REMOVE EXISTING CONCRETE SLAB ON GRADE
7. REMOVE EXISTING SHADE CLOTH ON WALLS
8. EXISTING CONCRETE SLAB ON GRADE TO REMAIN
9. EXISTING GRAVEL TO REMAIN
10. EXISTING CABLES TO BE REMOVED– SEE ELECTRICAL DRAWINGS.
11. REMOVE EXISTING FLOOD LIGHTS AND FLUORESCENT LIGHT BULBS FOR UNIVERSITY USE. SEE ELECTRICAL DRAWINGS FOR LOCATIONS.
12. REMOVE EXISTING FIRE EXTINGUISHER AND FIRST AID KIT, AND REINSTALL IN NEW LOCATION – SEE FLOOR PLAN
13. REMOVE EXISTING WOOD STRUCTURE

DEMOLITION NOTES

1. DIMENSIONS SHOWN ARE EXISTING, TO BE VERIFIED, AND PROVIDED TO ASSIST WITH TAKE-OFFS.

LEGEND

- EXISTING CORRUGATED METAL ROOFING TO BE REMOVED
- EXISTING TRANSLUCENT PLASTIC ROOFING TO BE REMOVED
- EXISTING SHADE CLOTH TO BE REMOVED

0 10' 20' 40'

INTERIOR ELEVATIONS

A D1 A1 D B C1 B1 C

N

DEMOLITION FLOOR & ROOF PLANS

–
AS NOTED

1

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CLIFFORD G.S. CHU
LICENSED PROFESSIONAL ARCHITECT
No. 5832
HAWAII, U.S.A.

EXP. 4–30–20

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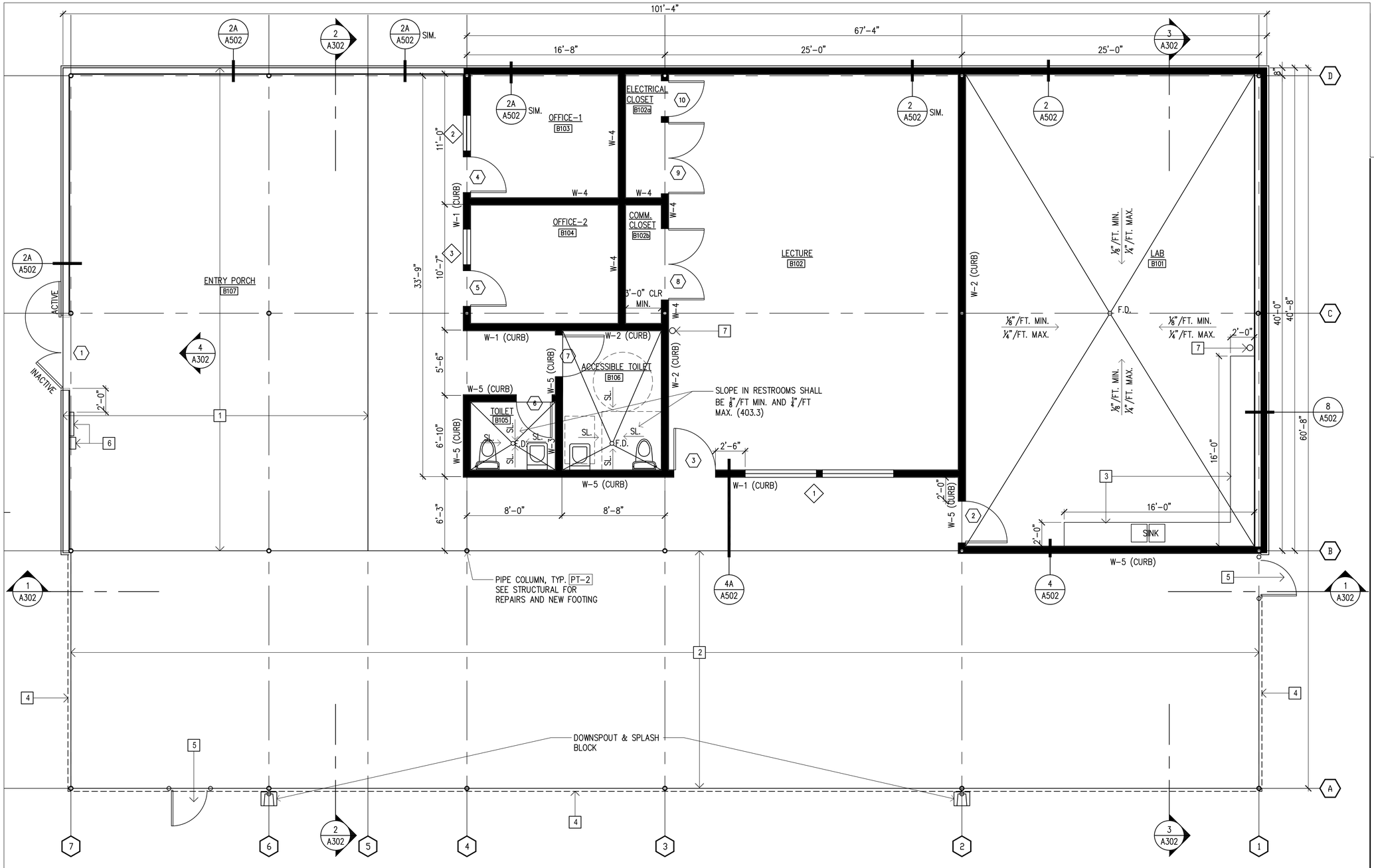
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

EXISTING/DEMOLITION FLOOR PLAN

BENJAMIN WOO ARCHITECTS		PROJECT NO.	DRAWING NO.
DESIGN BY: CC	CHECKED BY: CC, DC	CCR–17–6251B	A101
DRAWN BY: DC	APPROVED BY: BW	DATE OCT 2019	SHEET 11 OF 50 SHTS.
SCALE: AS SHOWN			



KEY NOTES:

1. EXISTING CONCRETE SLAB ON GRADE
2. EXISTING GRAVEL
3. SOLID SURFACE COUNTERTOP
4. NEW CHAIN LINK FENCE
5. NEW 3'X6'-8" CHAIN LINK GATE WITH SIGN TO READ: "EXIT GATE TO REMAIN OPEN DURING UNIVERSITY HOURS."
6. RELOCATED FIRE EXTINGUISHER AND FIRST AID KIT.
7. NEW FIRE EXTINGUISHER

FLOOR PLAN NOTES:

1. ALL EXTERIOR AND INTERIOR WALLS SHALL BE 6" METAL STUDS, SEE STRUCTURAL DWGS.
2. SEE A-501 FOR WALL TYPES.
3. DIMENSTIONS ARE TAKEN FROM FACE OF STUD OR CENTERLINE OF COLUMN OR WALLS.

ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR	BASE	WALL	CEILING	CLG. HT.	REMARKS
B101	LAB	SEE REMARKS	PF-1	RP-1	CG-2	9'-0"	POLYURETHANE FLOORING SYSTEM PF-1
B102	LECTURE	CONCRETE	RB-1	PT-1	CG-1	9'-0"	FLOOR SEALER
B103	OFFICE-1	CONCRETE	RB-1	PT-1	CG-1	8'-0"	FLOOR SEALER
B104	OFFICE-2	CONCRETE	RB-1	PT-1	CG-1	8'-0"	FLOOR SEALER
B105	TOILET	SEE REMARKS	PF-1	RP-2	PT-1	8'-0"	POLYURETHANE FLOORING SYSTEM PF-1
B106	ACCESSIBLE TOILET	SEE REMARKS	PF-1	RP-2	PT-1	8'-0"	POLYURETHANE FLOORING SYSTEM PF-1
B102a	ELECTRICAL CLOSET	CONCRETE	RB-1	PT-1	PT-1	8'-0"	FLOOR SEALER
B102b	COMM. CLOSET	CONCRETE	RB-1	PT-1	PT-1	10'-0"	FLOOR SEALER
B107	ENTRY PORCH	CONCRETE (E)	PT-3	PT-3	PLYWD. ROOF SHEATHING UNDERSIDE (EXPOSED)- PT-3	VARIES	

LEGEND

- EXISTING 4" DIA. PIPE COLUMN (REPAIR PER STRUCTURAL DRAWINGS)
- NEW 6" METAL STUD WITH BATT INSULATION
- NEW 6" METAL STUD

INTERIOR ELEVATIONS

0 5' 10' 20'

FLOOR PLAN

SCALE: 1/4"=1'-0"

1

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No. 5832
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STATE OF HAWAII

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5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

CONSTRUCTION FLOOR PLAN

BENJAMIN WOO ARCHITECTS		PROJECT NO.	DRAWING NO.
DESIGN BY: CC	CHECKED BY: CC, DC	CCR-17-6251B	A200
DRAWN BY: DC	APPROVED BY: BW	DATE: OCT 2019	SHEET: 12 OF 50 SHTS.
SCALE: AS SHOWN			

KEY NOTES:

1. PAINT STEEL BEAM, SEE STRUC. DWG. PT-2
2. PAINT STEEL PURLIN, SEE STRUC. DWG. PT-2
3. PAINT NEW EXPOSED UNDERSIDE OF PLYWOOD ROOF SHEATHING PT-3

LEGEND:

- 1X4 LIGHT FIXTURE
- 2X4 LIGHT FIXTURE
- CEILING FAN COIL UNIT
- SUPPLY AIR GRILLE
- RETURN AIR GRILLE

REFLECTED CEILING PLAN NOTES

1. PAINT ALL EXPOSED EXISTING AND NEW STEEL BEAMS, PURLINS, CHANNELS, FASCIA BEAM, ETC. WITH PT-2

A
D1 A1
D B
C1 B1
C
INTERIOR ELEVATIONS

0 5' 10' 20'

REFLECTED CEILING PLAN

SCALE: 1/4"=1'-0"

1

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

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LICENSED PROFESSIONAL ARCHITECT
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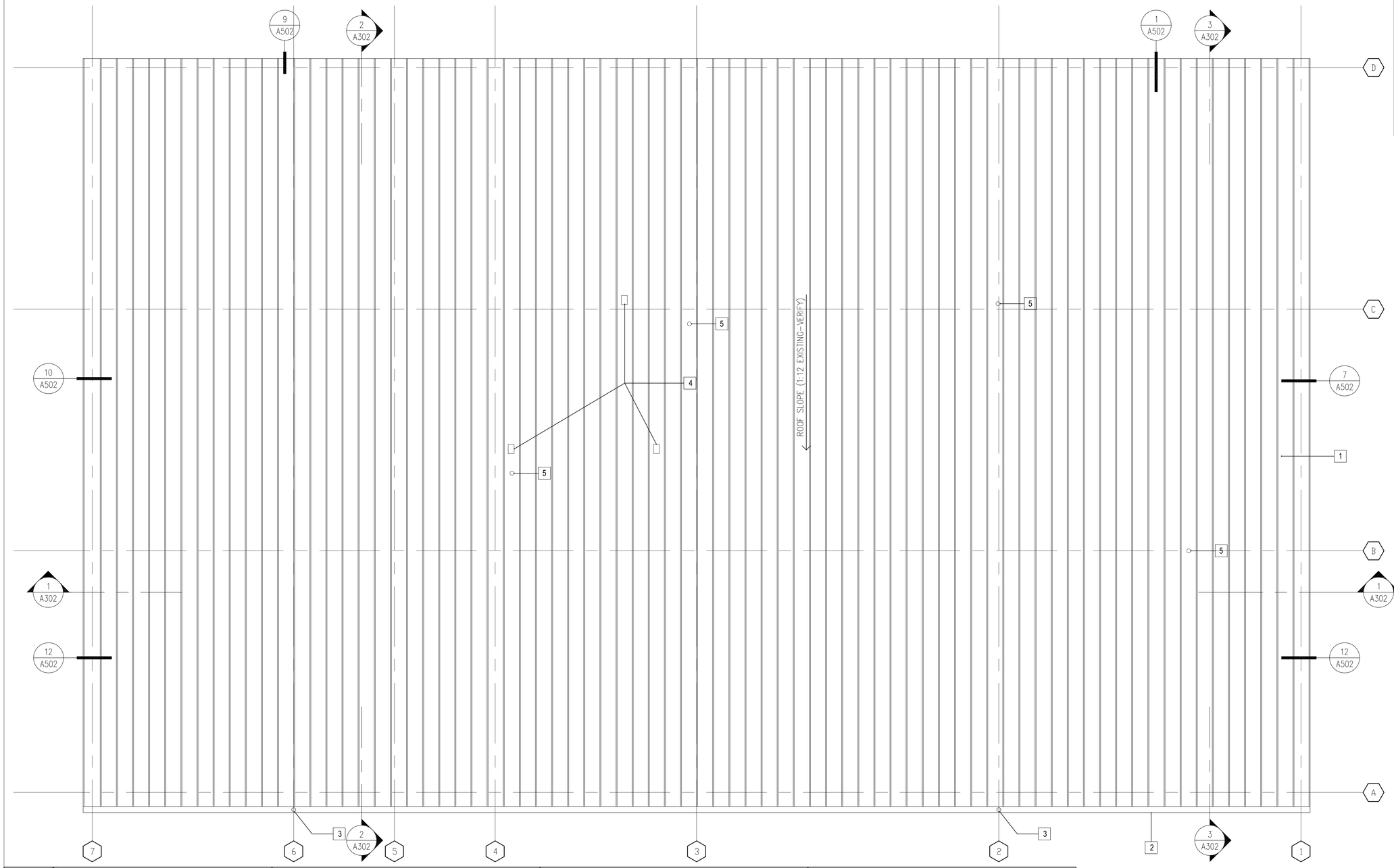
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

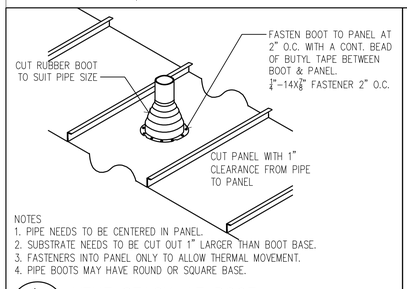
REFLECTED CEILING PLAN

BENJAMIN WOO ARCHITECTS		PROJECT NO.	DRAWING NO.
DESIGN BY: CC	CHECKED BY: DC, CC	CCR-17-6251B	A201
DRAWN BY: DC	APPROVED BY: BW	DATE OCT 2019	SHEET 13 OF 50 SHTS.
SCALE: AS SHOWN			



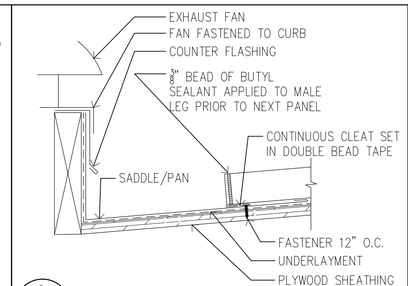
KEY NOTES:

1. NEW STANDING SEAM METAL ROOFING
2. NEW METAL GUTTER
3. NEW METAL DOWNSPOUT,TYP.
4. EXHAUST VENT CAP, SEE DETAIL 2,3,4/A202
5. PLUMBING VENT THRU ROOF, SEE DETAIL 1/A202

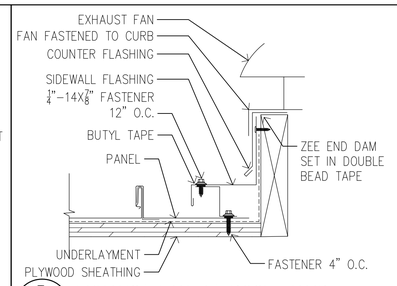


NOTES
1. PIPE NEEDS TO BE CENTERED IN PANEL.
2. SUBSTRATE NEEDS TO BE CUT OUT 1" LARGER THAN BOOT BASE.
3. FASTENERS INTO PANEL ONLY TO ALLOW THERMAL MOVEMENT.
4. PIPE BOOTS MAY HAVE ROUND OR SQUARE BASE.

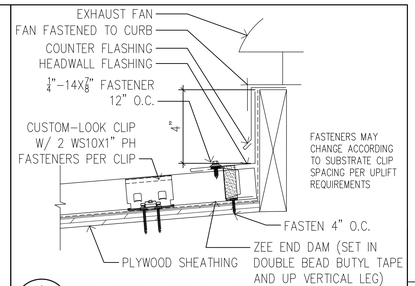
1 A202 VENT STACK AT ROOF
SCALE: N.T.S.



2 A202 EXHAUST FAN AT ROOF-HEAD
SCALE: 3" = 1'-0"



3 A202 EXHAUST FAN AT ROOF-JAMB
SCALE: 3" = 1'-0"



4 A202 EXHAUST FAN AT ROOF-SILL
SCALE: 3" = 1'-0"

0 5' 10'

ROOF PLAN – SCALE: 1/4"=1'-0" **1**

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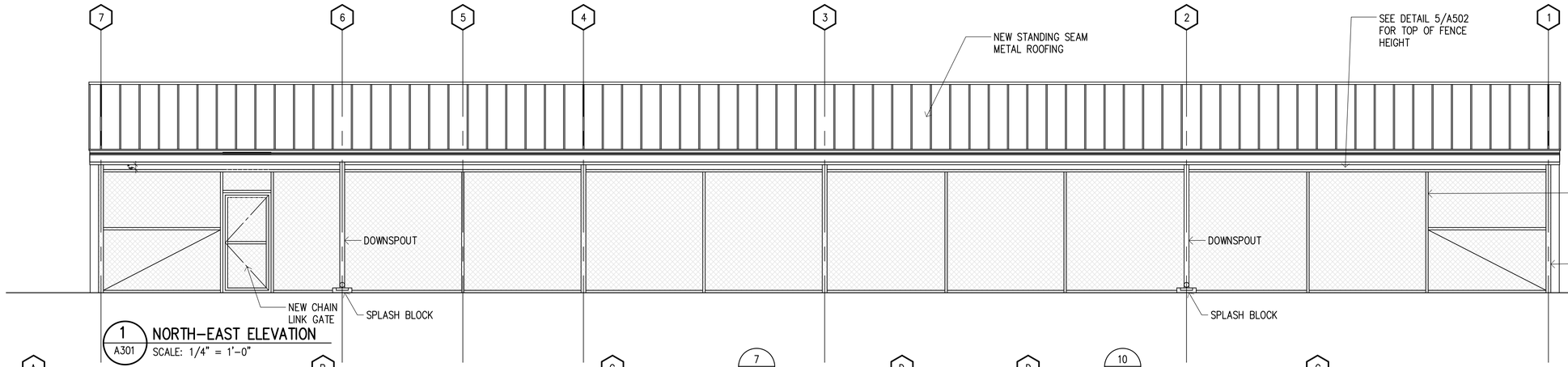
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

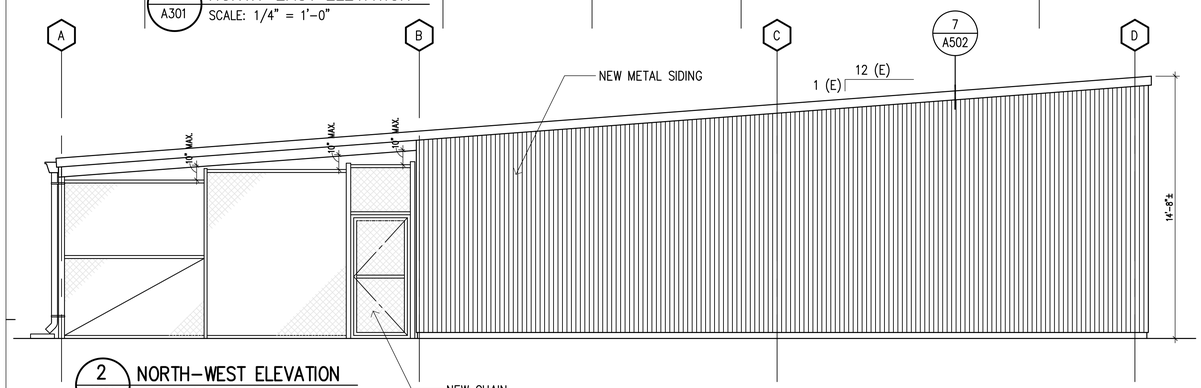
ROOF PLAN

BENJAMIN WOO ARCHITECTS

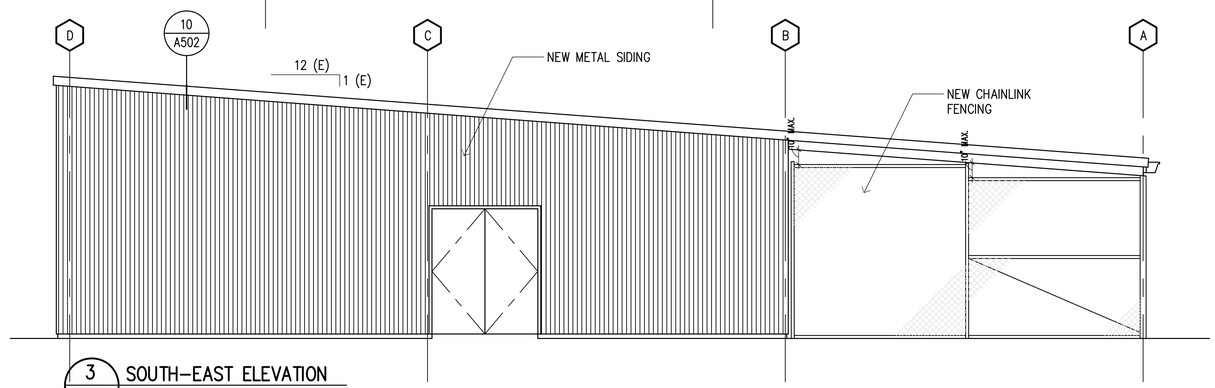
DESIGN BY:	CHECKED BY:	PROJECT NO.	DRAWING NO.
CC	DC, CC	CCR-17-6251B	A202
DRAWN BY:	APPROVED BY:	DATE	SHEET
DC	BW	OCT 2019	14 OF 50 SHTS.
SCALE: AS SHOWN			



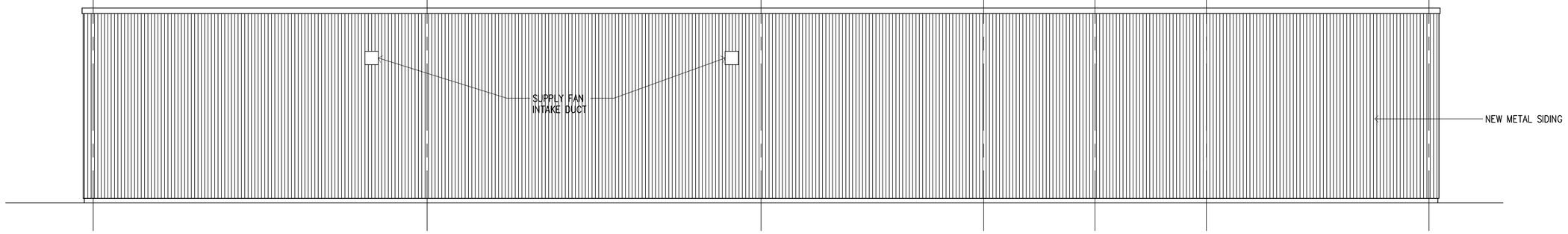
1 A301 **NORTH–EAST ELEVATION**
SCALE: 1/4" = 1'–0"



2 A301 **NORTH–WEST ELEVATION**
SCALE: 1/4" = 1'–0"



3 A301 **SOUTH–EAST ELEVATION**
SCALE: 1/4" = 1'–0"



4 A301 **SOUTH–WEST ELEVATION**
SCALE: 1/4" = 1'–0"

GENERAL NOTES

0 5' 10' 20'

EXTERIOR ELEVATIONS | – | SCALE: 1/4"=1'–0" | 1

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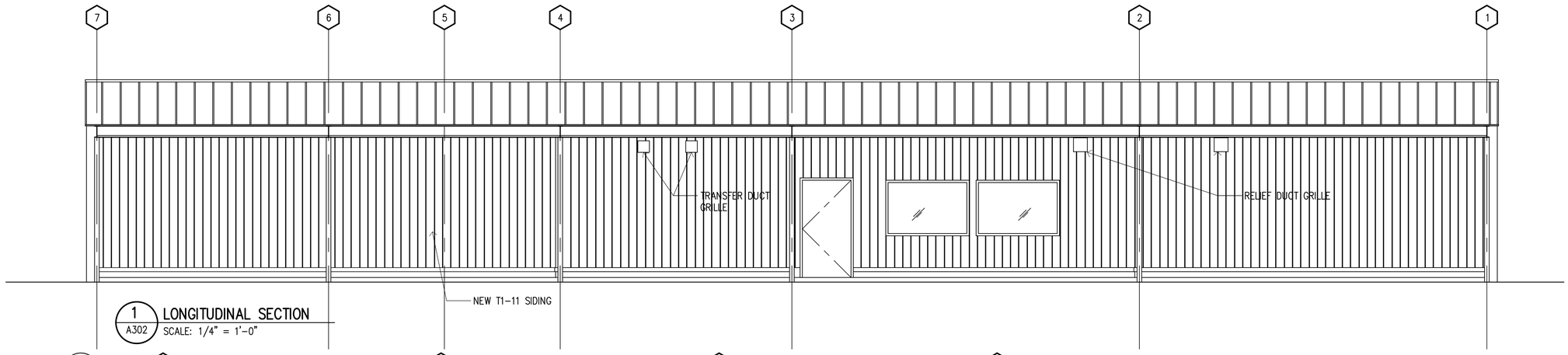
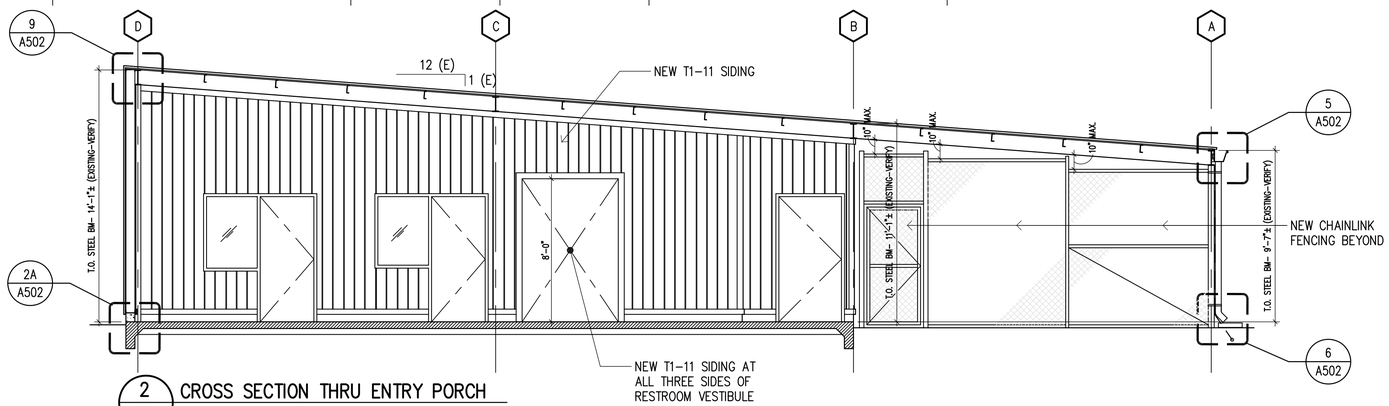
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

EXTERIOR ELEVATIONS

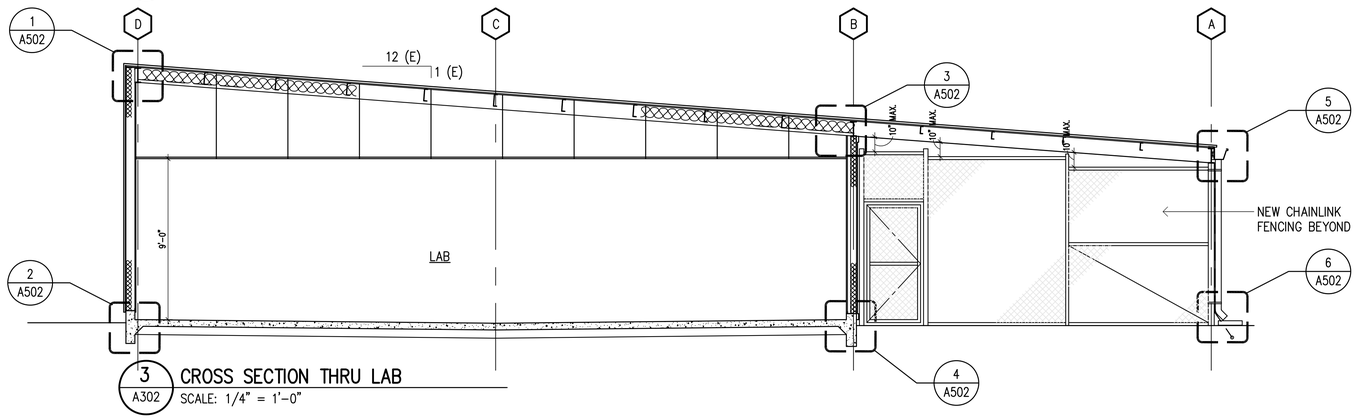
BENJAMIN WOO ARCHITECTS		PROJECT NO.	DRAWING NO.
DESIGN BY: CC	CHECKED BY: CC, DC	CCR–17–6251B	A301
DRAWN BY: DC	APPROVED BY: BW	DATE OCT 2019	SHEET 15 OF 50 SHTS.
SCALE: AS SHOWN			



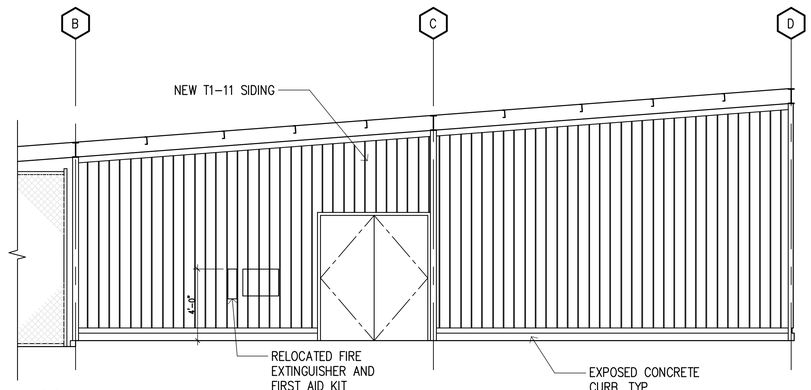
1 A302 LONGITUDINAL SECTION
SCALE: 1/4" = 1'-0"



2 A302 CROSS SECTION THRU ENTRY PORCH
SCALE: 1/4" = 1'-0"



3 A302 CROSS SECTION THRU LAB
SCALE: 1/4" = 1'-0"



4 A302 ELEVATION AT ENTRY PORCH (LOOKING SOUTH-EAST)
SCALE: 1/4" = 1'-0"

GENERAL NOTES

0 5' 10' 20'

SECTIONS | – | SCALE: 1/4"=1'-0" | 1

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

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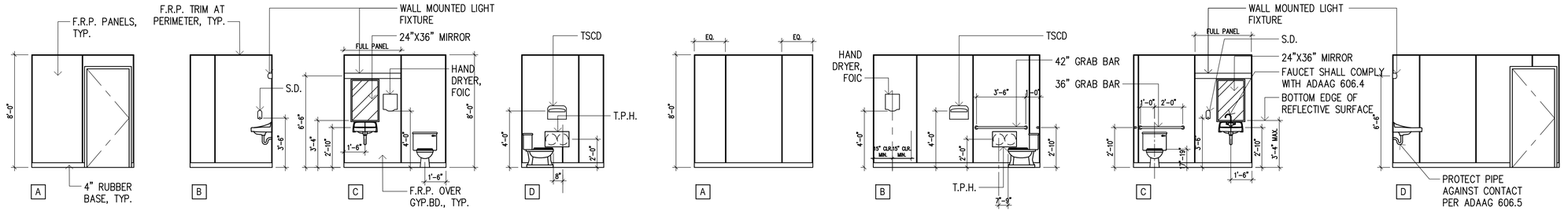
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

SECTIONS

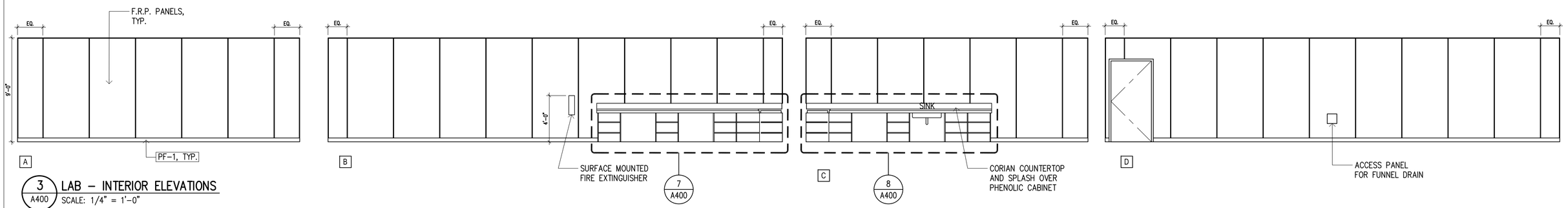
BENJAMIN WOO ARCHITECTS		PROJECT NO.	DRAWING NO.
DESIGN BY: CC	CHECKED BY: CC, DC	CCR-17-6251B	A302
DRAWN BY: DC	APPROVED BY: BW	DATE: OCT 2019	SHEET: 16 OF 50 SHTS.
SCALE: AS SHOWN			



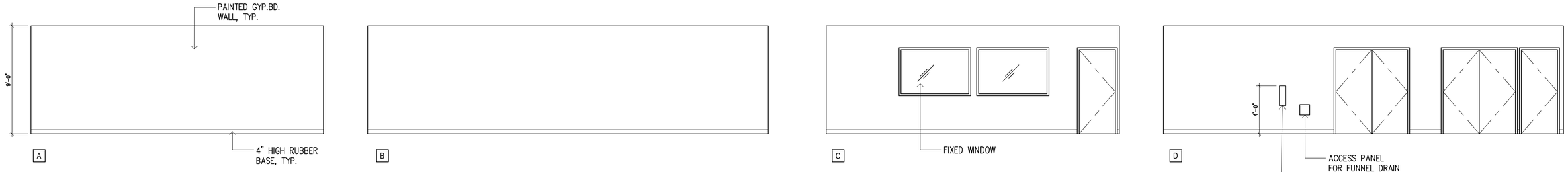
1 A400 **TOILET – INTERIOR ELEVATIONS**
SCALE: 1/4" = 1'-0"

NOTE: LOCATE FRP TRIM AWAY FROM WALL MOUNTED ACCESSORIES, TYP.

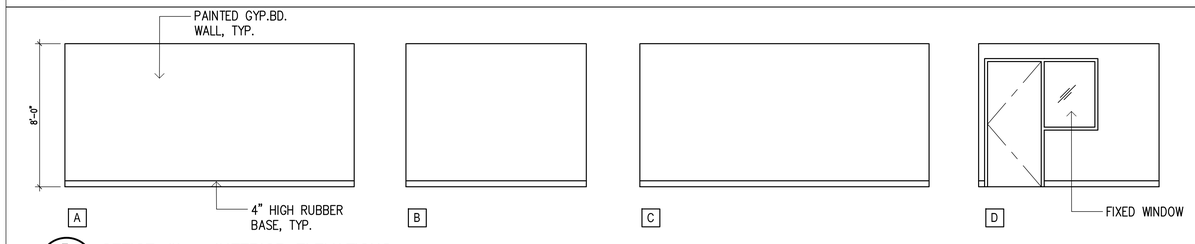
2 A400 **ACCESSIBLE TOILET – INTERIOR ELEVATIONS**
SCALE: 1/4" = 1'-0"



3 A400 **LAB – INTERIOR ELEVATIONS**
SCALE: 1/4" = 1'-0"

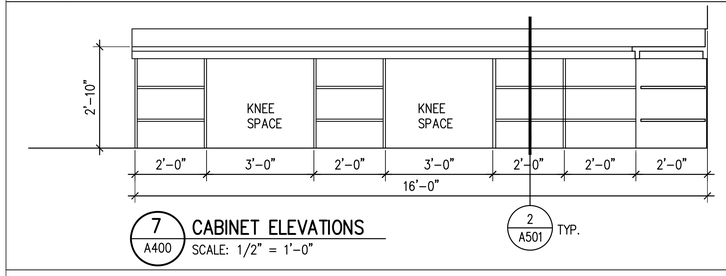


4 A400 **LECTURE – INTERIOR ELEVATIONS**
SCALE: 1/4" = 1'-0"

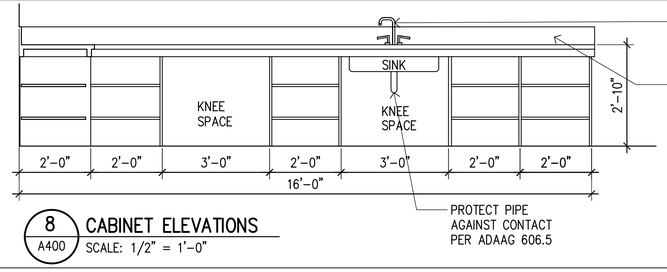


5 A400 **OFFICE #1 – INTERIOR ELEVATIONS**
SCALE: 1/4" = 1'-0"

6 A400 **OFFICE #2 – INTERIOR ELEVATIONS**
SCALE: 1/4" = 1'-0"



7 A400 **CABINET ELEVATIONS**
SCALE: 1/2" = 1'-0"



8 A400 **CABINET ELEVATIONS**
SCALE: 1/2" = 1'-0"

0 5' 10' 20'

0 5' 10'

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

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LICENSED PROFESSIONAL ARCHITECT
No. 5832
HAWAII, U.S.A.

EXP. 4-30-20

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5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

INTERIOR ELEVATIONS

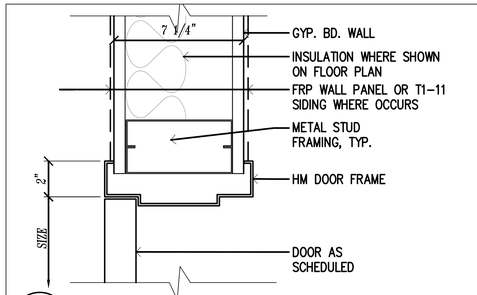
BENJAMIN WOO ARCHITECTS		PROJECT NO.	DRAWING NO.
DESIGN BY: CC	CHECKED BY: CC, DC	CCR-17-6251B	A400
DRAWN BY: DC	APPROVED BY: BW	DATE OCT 2019	SHEET 17 OF 50 SHTS.
SCALE: AS SHOWN			

INTERIOR ELEVATIONS

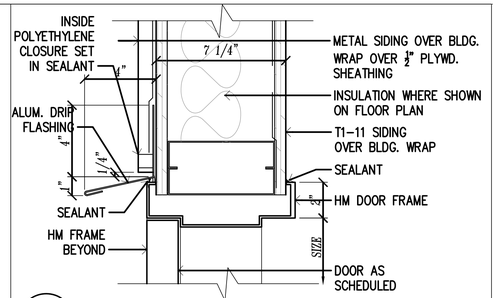
–

SCALE: AS NOTED

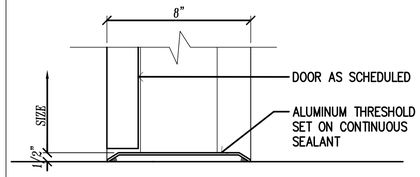
1



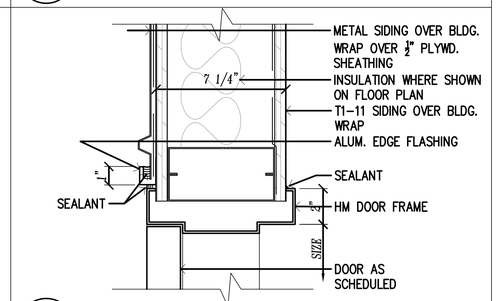
5 A500 INTERIOR DOOR DETAIL – JAMB (HEAD SIM.)
SCALE: 3" = 1'-0"



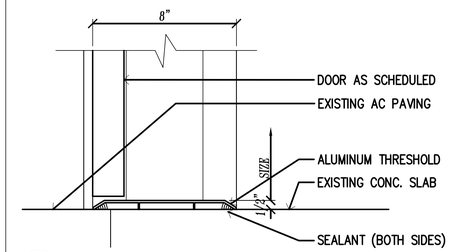
1 A500 ENTRY DOOR DETAIL – HEAD
SCALE: 3" = 1'-0"



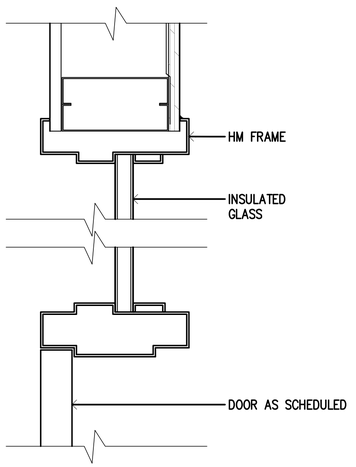
6 A500 INTERIOR DOOR DETAIL – THRESHOLD
SCALE: 3" = 1'-0"



2 A500 ENTRY DOOR DETAIL – JAMB
SCALE: 3" = 1'-0"



3 A500 ENTRY DOOR DETAIL – THRESHOLD
SCALE: 3" = 1'-0"



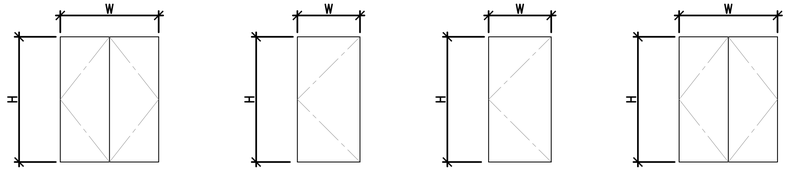
8 A500 WINDOW DETAIL
SCALE: 3" = 1'-0"

DOOR SCHEDULE

LOCATION	DOOR NUMBER	DOOR TYPE	SIZE			DOOR			RATING (NOTE)	FRAME DETAILS			DOOR HDWE GROUP	REMARKS
			HEIGHT	WIDTH	THICKNESS	CORE	MATERIAL	FRAME		HEAD	JAMB	THRESHOLD		
ENTRY PORCH	1	A	7'-0" (VERIFY)	6'-0" (VERIFY)	1-3/4"	HM	HM	HM		1/A500	2/A500	3/A500	001	
LAB	2	B	7'-0"	3'-6"	1-3/4"	HM	HM	HM		5/A500	5/A500	6/A500	002	1
LECTURE	3	B	7'-0"	3'-6"	1-3/4"	HM	HM	HM		5/A500	5/A500	6/A500	002	1
OFFICE-1	4	B	7'-0"	3'-0"	1-3/4"	HM	HM	HM		5/A500	5/A500	6/A500	007	1
OFFICE-2	5	B	7'-0"	3'-0"	1-3/4"	HM	HM	HM		5/A500	5/A500	6/A500	007	1
TOILET	6	B	7'-0"	3'-0"	1-3/4"	HM	HM	HM		5/A500	5/A500	6/A500	003	
ACCESSIBLE TOILET	7	B	7'-0"	3'-6"	1-3/4"	HM	HM	HM		5/A500	5/A500	6/A500	006	
COMM. CLOSET	8	D	7'-0"	6'-0"	1-3/4"	SC	WD	HM		5/A500	5/A500	–	004	2
ELECTRICAL CLOSET	9	D	7'-0"	6'-0"	1-3/4"	SC	WD	HM		5/A500	5/A500	–	004	2
ELECTRICAL CLOSET	10	C	7'-0"	3'-0"	1-3/4"	SC	WD	HM		5/A500	5/A500	–	005	2

DOOR NOTES:
1. HOLLOW METAL DOOR AND FRAME SHALL BE G90 HOT DIPPED GALVANIZED.

DOOR REMARKS:
1. PROVIDE ELECTRONIC ACCESS CONTROL (CARD KEY).
2. UNDERCUT DOORS 3/4"



A HOLLOW METAL FLUSH DOOR

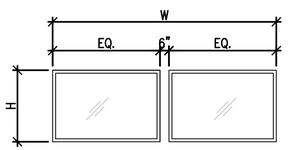
B HOLLOW METAL FLUSH DOOR

C SOLID CORE FLUSH WOOD DOOR

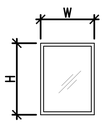
D SOLID CORE FLUSH WOOD DOOR

WINDOW SCHEDULE

WINDOW NO.	TYPE	WINDOW		MATERIAL		DETAIL			REMARKS
		WIDTH	HEIGHT	GLASS	FRAME	HEAD	JAMB	SILL	
1	A	12'-6"	4'-0"	FLOAT	HM	8/A500 SIM.	8/A500 SIM.	8/A500 SIM.	
2	B	3'-0"	4'-0"	TEMPERED	HM	8/A500	8/A500	8/A500	
3	B	3'-0"	4'-0"	TEMPERED	HM	8/A500	8/A500	8/A500	



A METAL FRAME W/ FIXED INSULATED GLASS



B METAL FRAME W/ FIXED INSULATED GLASS

NOTE: GLAZING TO MEET 2015 IECC REQUIREMENTS – SEE SPECIFICATIONS

GENERAL NOTES

0 5" 10" 20"

SCALE: AS NOTED

1

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CLIFFORD G.S. CHU LICENSED PROFESSIONAL ARCHITECT No. 5832 HAWAII, U.S.A.

EXP. 4-30-20

This work was prepared by me or under my supervision and construction of this project will be under my observation. ("Observation of construction" as defined under Section 16-115-2 of Hawaii Administrative Rules, Professional Engineers, Architects, Surveyors, and Landscape Architects.) The Contractor shall check and verify all dimensions at job before proceeding with work.

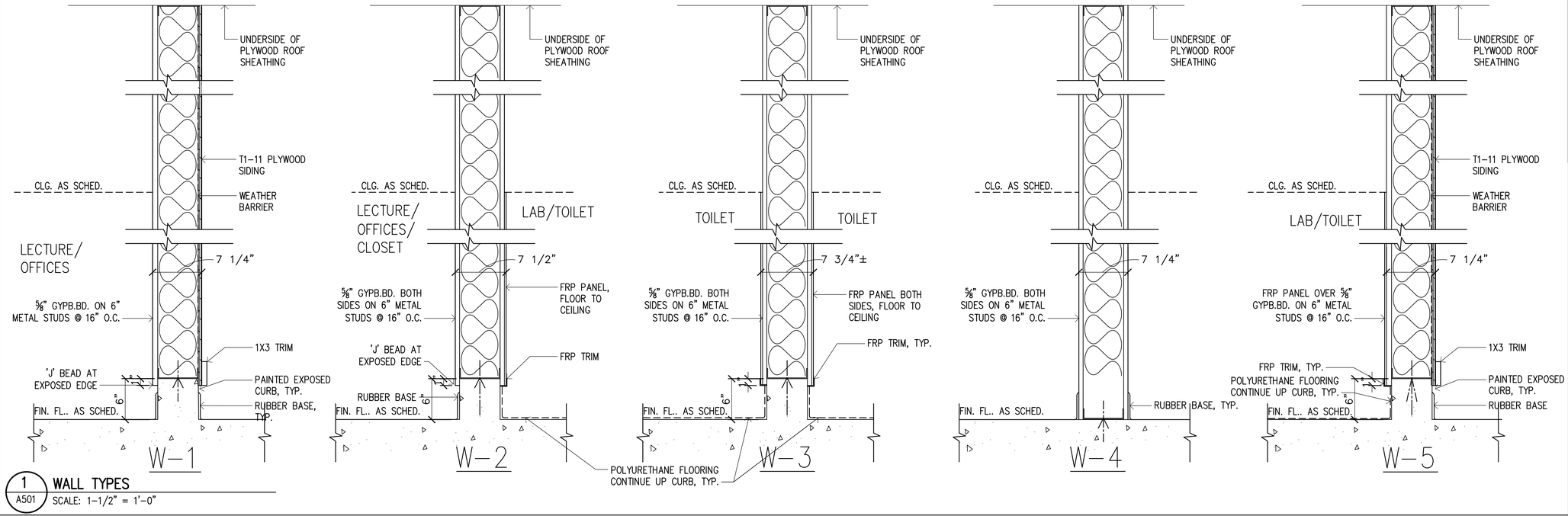
Signature

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

DOOR / WINDOW SCHEDULES DETAILS

BENJAMIN WOO ARCHITECTS		PROJECT NO.	DRAWING NO.
DESIGN BY: CC	CHECKED BY: CC, DC	CCR-17-6251B	A500
DRAWN BY: DC	APPROVED BY: BW	DATE: OCT 2019	SHEET 18 OF 50 SHTS.
SCALE: AS SHOWN			

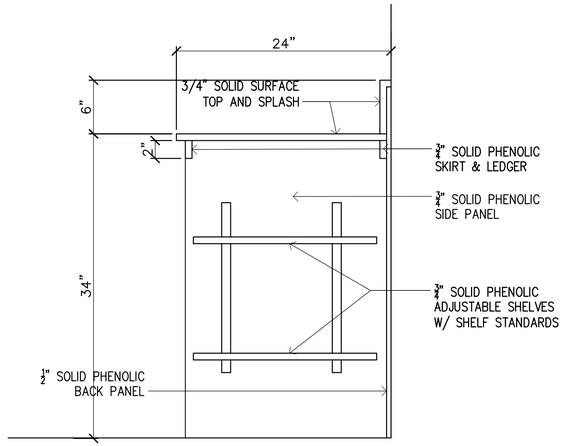


1 A501 **WALL TYPES**
SCALE: 1-1/2" = 1'-0"

MATERIAL FINISH CODE

(PRODUCTS LISTED ARE TO INDICATE DESIRED COLOR/PATTERN-OTHER MANUFACTURERS)

MATERIAL TYPE	MANUFACTURER/ SUPPLIER	DESCRIPTION	COLOR NAME/ NUMBER	REMARKS
POLYURETHANE FLOORING				
PF-1	BASF	UCRETE MF	GREY	
BASE				
RB-1	ROPPE	4" RUBBER COVE BASE	SUBMIT FOR SELECTION	
REINFORCED FIBERGLASS PANEL				
RP-1	MARLITE	STANDARD 4' X 9' PANELS	P 151 LIGHT GREY	PEBBLED TEXTURE
RP-2	MARLITE	STANDARD 4' X 8' PANELS	P 151 LIGHT GREY	PEBBLED TEXTURE
CEILING				
CG-1	ARMSTRONG	2 X 2 FISSURED	755	
CG-2	MARLITE	CEILING 2' X 2' PANELS	P 100CP WHITE	SMOOTH
PAINT				
PT-1	SHERWIN WILLIAMS		SW 6126 NAVAHO WHITE	WALLS AND CEILINGS
PT-2	SHERWIN WILLIAMS	SOLID COLOR STAIN	SW 9117 URBAN JUNGLE	DOORS AND FRAMES
PT-3	SHERWIN WILLIAMS	SOLID COLOR STAIN	SW 3039 TOBACCO	T1-11 SIDING & TRIM, UNDERSIDE OF PLYWOOD ROOF SHEATHING (WHERE EXPOSED)
COUNTERTOP				
SS-1	SAMSUNG	SOLID SURFACE	STARON SANDED TAUPE SP486	
SOLID PHENOLIC PANELS				
SP-1	TRESPA ATHLON		MARINE BLUE	
METAL ROOFING AND SIDING				
MT-1	HPM CUSTOM METAL	DURAPON 70 FINISH	ALMOND	INCLUDES GUTTERS



2 A501 **TYPICAL CABINET SECTION**
SCALE: 1-1/2" = 1'-0"

WALL TYPE NOTES

1. ALL FRP PANEL EDGES SHALL BE TRIMMED WITH MOLDINGS WITH MARLITE BRAND SILICONE SEALANT TO ENSURE A WATERTIGHT SEAL.
2. PROVIDE W/R GYPSUM BOARD BEHIND FRP PANELS AT LAB AND TOILET ROOMS.
3. BATT INSULATION SHALL BE PROVIDED BETWEEN STUDS FROM BASE TO TOP OF WALL AT ALL WALL TYPES.

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CLIFFORD G.S. CHU
LICENSED PROFESSIONAL ARCHITECT
No. 5832
HAWAII, U.S.A.

EXP. 4-30-20

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STATE OF HAWAII

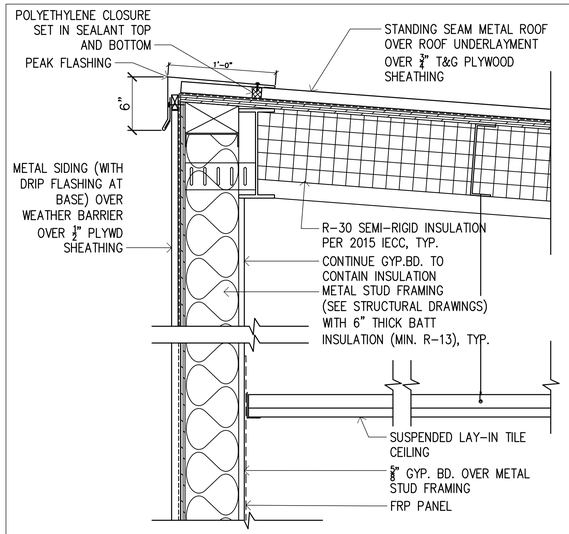
WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

WALL TYPES, DETAILS

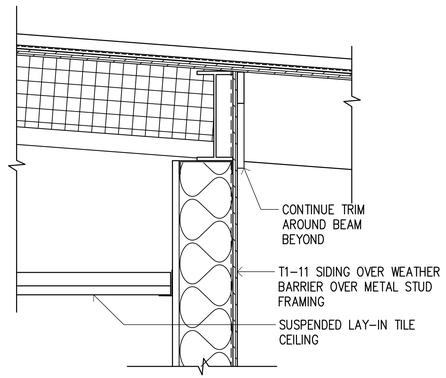
BENJAMIN WOO ARCHITECTS		PROJECT NO.	DRAWING NO.
DESIGN BY: CC	CHECKED BY: CC, DC	CCR-17-6251B	A501
DRAWN BY: DC	APPROVED BY: BW	DATE: OCT 2019	SHEET: 19 OF 50 SHTS.
SCALE: AS SHOWN			

– SCALE: AS NOTED

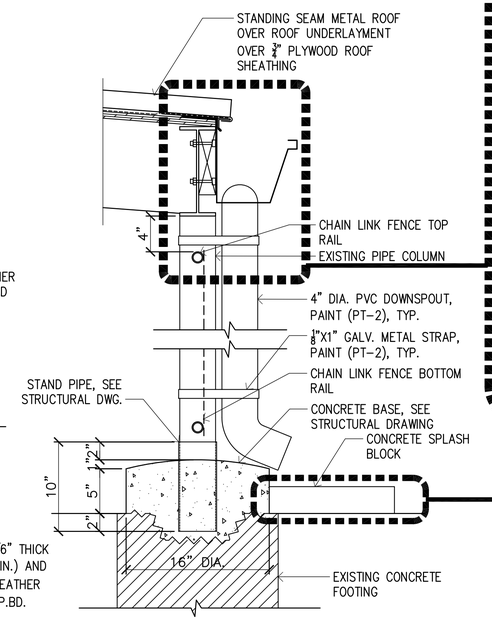
1



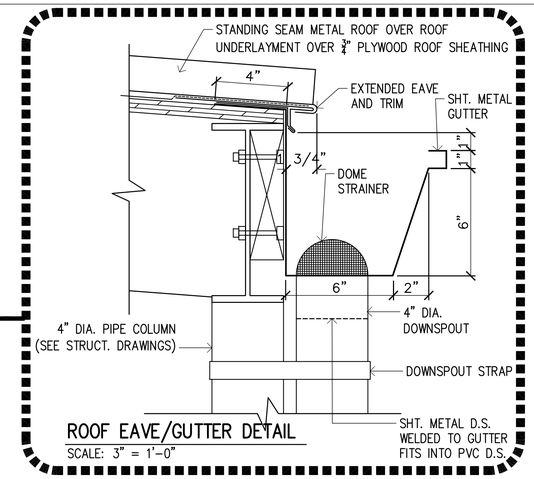
1 A502 **ROOF DETAIL – PEAK**
SCALE: 1-1/2" = 1'-0"



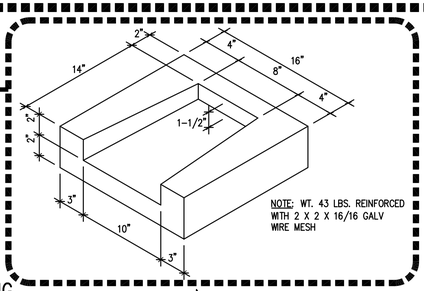
3 A502 **ROOF DETAIL**
SCALE: 1-1/2" = 1'-0"

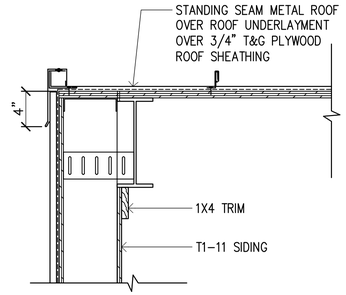


5/6 A502 **ROOF DETAIL – EAVE / PIPE COLUMN FOOTING**
SCALE: 1-1/2" = 1'-0"

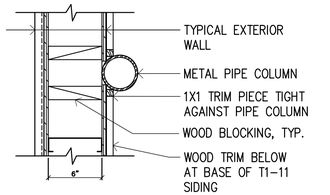


ROOF EAVE/GUTTER DETAIL
SCALE: 3" = 1'-0"



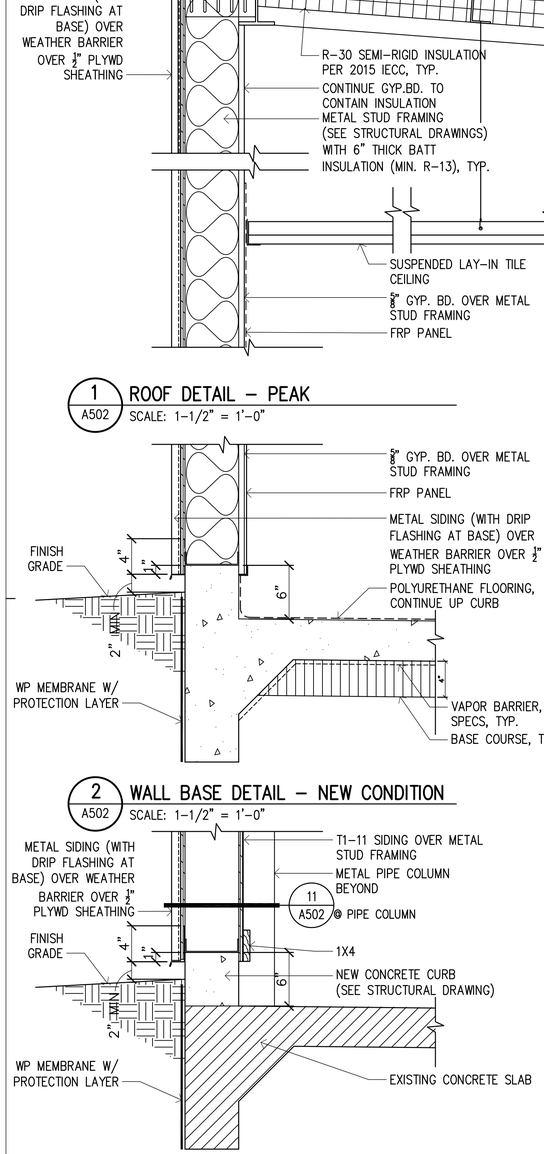


10 A502 **ROOF DETAIL – RAKE**
SCALE: 1-1/2" = 1'-0"

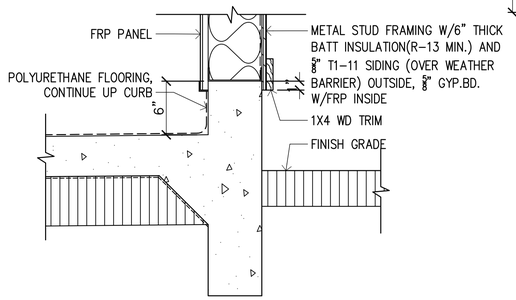


11 A502 **PIPE COLUMN @ ENTRY PORCH**
SCALE: 1-1/2" = 1'-0"

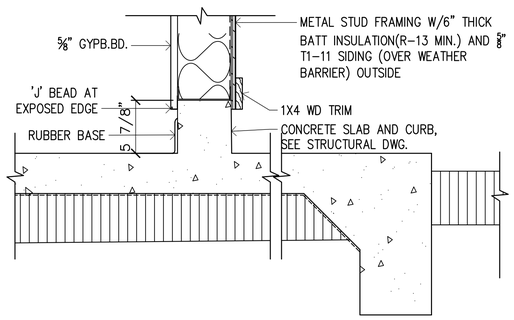
2 A502 **WALL BASE DETAIL – NEW CONDITION**
SCALE: 1-1/2" = 1'-0"



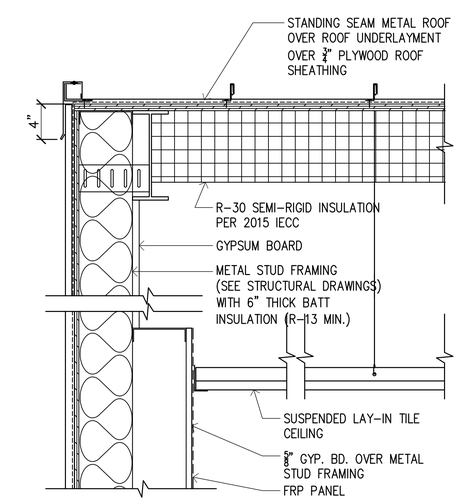
2A A502 **WALL BASE DETAIL – EXISTING CONDITION**
SCALE: 1-1/2" = 1'-0"



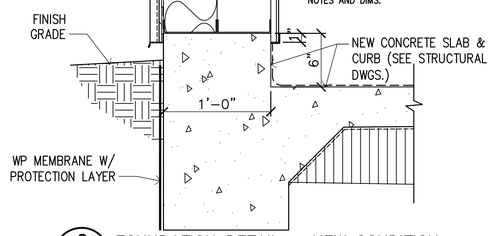
4 A502 **WALL BASE DETAIL – NEW CONDITION**
SCALE: 1-1/2" = 1'-0"



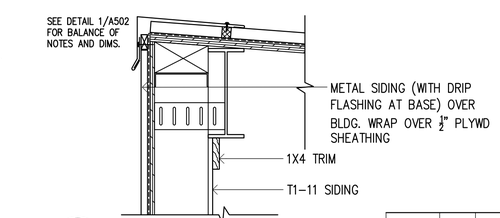
4A A502 **WALL BASE DETAIL – NEW CONDITION**
SCALE: 1-1/2" = 1'-0"



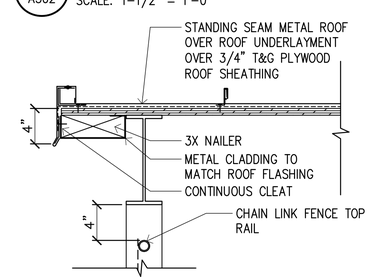
7 A502 **ROOF DETAIL – RAKE**
SCALE: 1-1/2" = 1'-0"



8 A502 **FOUNDATION DETAIL – NEW CONDITION**
SCALE: 1-1/2" = 1'-0"



9 A502 **ROOF DETAIL – PEAK**
SCALE: 1-1/2" = 1'-0"



12 A502 **ROOF DETAIL – RAKE**
SCALE: 1-1/2" = 1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT.__ OF__	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CLIFFORD G.S. CHU
LICENSED PROFESSIONAL ARCHITECT
No. 5832
HAWAII, U.S.A.

EXP. 4-30-20

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STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

DETAILS

BENJAMIN WOO ARCHITECTS

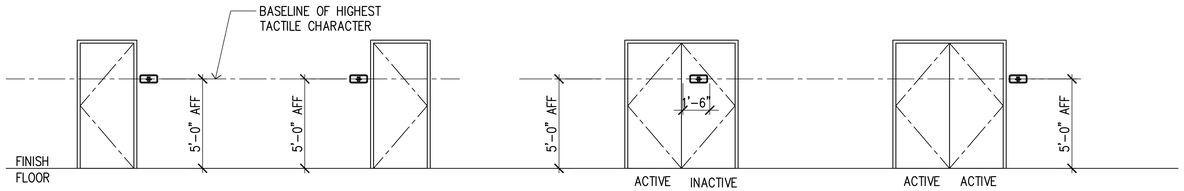
DESIGN BY:	CHECKED BY:	PROJECT NO.	DRAWING NO.
CC	CC, DC	CCR-17-6251B	A502
DRAWN BY:	APPROVED BY:	DATE	SHEET
DC	BW	OCT 2019	20 OF 50 SHTS.
SCALE: AS SHOWN			

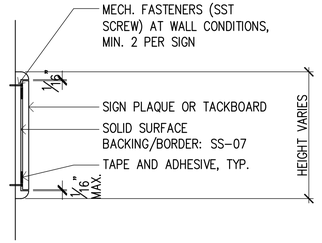
\- | SCALE: AS NOTED | 1

SIGNAGE SCHEDULE

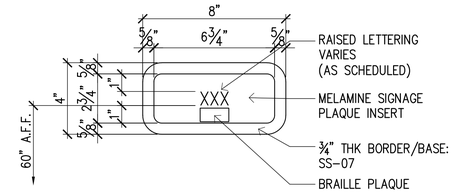
DOOR NO.	LOCATION	LETTERING	TYPE	QTY	MOUNTING LOCATION	REMARKS
1	ENTRY PORCH	HALE ULUWEHI	B	1	INACTIVE DOOR	
1	ENTRY PORCH	EXIT	A	1	INTERIOR, RIGHT OF RIGHT DOOR	
2	LAB	B101	A	1	LATCH SIDE OF DOOR	
3	LECTURE	B102	A	1	LATCH SIDE OF DOOR	
4	OFFICE–1	B103	A	1	HINGE SIDE OF DOOR	
5	OFFICE–2	B104	A	1	HINGE SIDE OF DOOR	
6	TOILET	RESTROOM B105	B	1	LATCH SIDE OF DOOR	
7	ACCESSIBLE TOILET	RESTROOM B106	D	1	LATCH SIDE OF DOOR	
8	COMMUNICATION CLOSET	B102b	A	1	RIGHT OF RIGHT DOOR	
9	ELECTRICAL CLOSET	B102a	A	1	LEFT OF LEFT DOOR	
10	ELECTRICAL CLOSET	B102a	A	1	HINGE SIDE, ADJACENT WALL	
GATE	CHAIN LINK ENCLOSURE	EXIT GATE SHALL REMAIN OPEN DURING UNIVERSITY HOURS	C	2	LATCH SIDE, ADJACENT WALL	

NOTE: UNLESS OTHERWISE NOTED SIGNAGE MOUNTED AT EXTERIOR OF ROOM

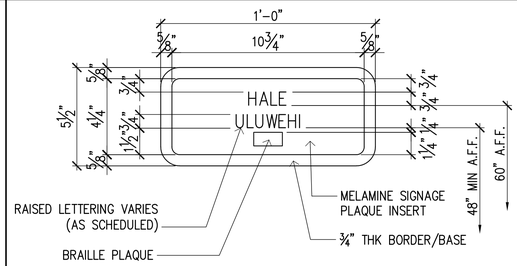




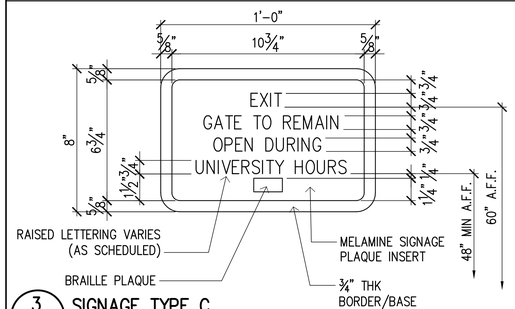
5 / A502 SIGNAGE MOUNTING DETAIL
SCALE: 3" = 1'–0"



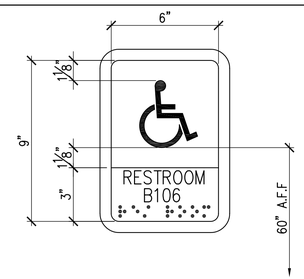
1 / A502 SIGNAGE TYPE A
SCALE: 3" = 1'–0"



2 / A502 SIGNAGE TYPE B
SCALE: 3" = 1'–0"



3 / A502 SIGNAGE TYPE C
SCALE: 3" = 1'–0"



4 / A502 SIGNAGE TYPE D
SCALE: 3" = 1'–0"

GENERAL NOTES

0 5" 10" 20"

SCALE: AS NOTED

1

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CLIFFORD G.S. CHU
LICENSED PROFESSIONAL ARCHITECT
No. 5832
HAWAII, U.S.A.

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5986A & 5986B HALE ULUWEHI
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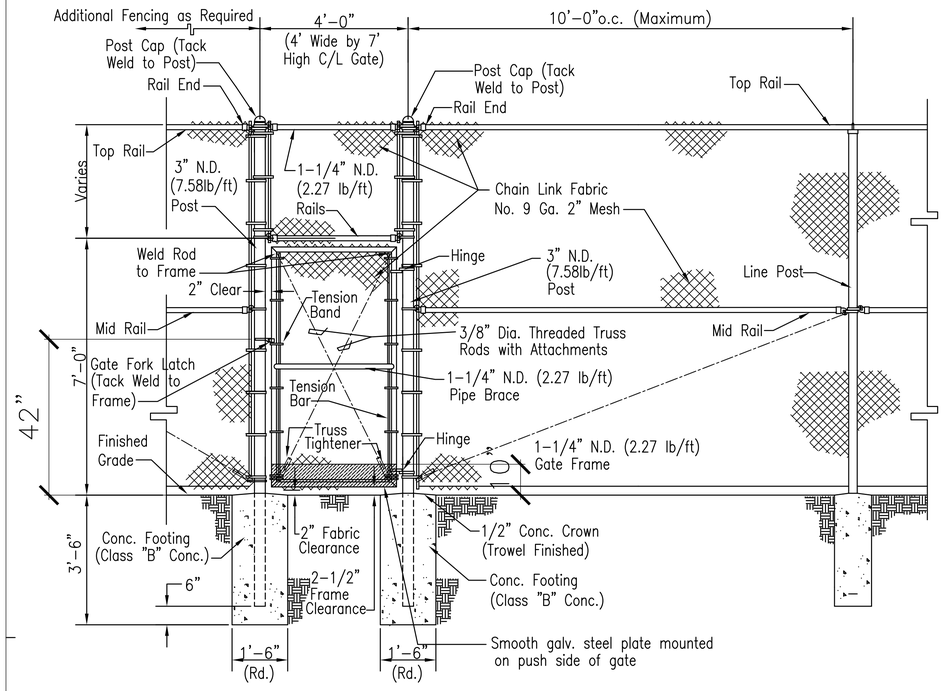
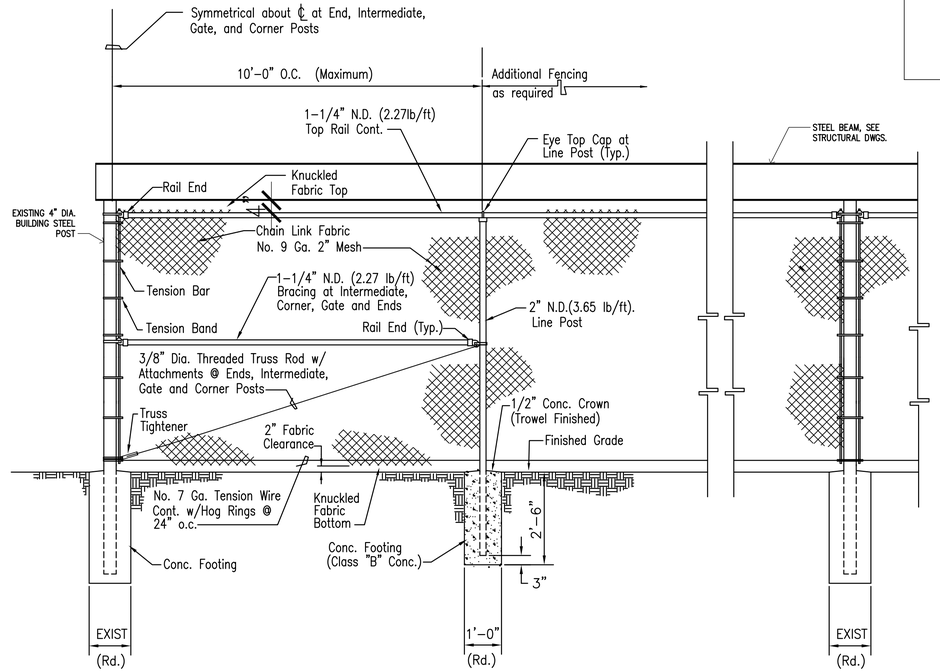
SIGNAGE SCHEDULE

BENJAMIN WOO ARCHITECTS		PROJECT NO.	DRAWING NO.
DESIGN BY: CC	CHECKED BY: CC, DC	CCR–17–6251B	A503
DRAWN BY: DC	APPROVED BY: BW	DATE OCT 2019	SHEET 21 OF 50 SHTS.
SCALE: AS SHOWN			





NOTES:

1. All pipes and post sizes are nominal diameter (N.D.).
2. Gate frame shall be of welded pipe construction. All welding shall conform to the Specifications of the American Welding Society "Structural Welding Code".
3. For all welded connections: corners shall be mitered and all pipe braces properly coped.
4. All welded connections shall be painted with two coats of Z.R.C. cold galvanizing compound.
5. Gate hinges shall be tack welded to gate posts and frames.
6. Chain link fabric, pipes, fittings, fasteners, truss rod, posts and hog rings shall be hot–dip galvanized.
7. Wire fastenings shall be No. 12 gauge galvanized tie wire.
8. Chain link fabric shall be continuous and fastened to side frame pipes by tension bars with tension bands evenly spaced at 15" o.c. (max.).
9. Chain link fabric shall be fastened to top and bottom frame pipes with wire fastenings evenly spaced at 12" o.c. (max.).
10. Chain link fabric shall be fastened to truss rods with No. 9 gauge hog rings evenly spaced at 12" o.c. (max.).
11. Top and bottom selvages of chain link fabric shall be knuckled.
12. All wire fastenings shall be wrapped around chain link a minimum of two complete turn. (Hooking of wire ends shall not be permitted).
13. After installation, all bolt ends shall be cut flush with the nuts and ground smooth.

NOTES:

1. All pipe and post sizes are nominal diameter (N.D.).
2. Chain link fabric, pipes, fitting, fasteners, truss rod, posts, hog rings and tension wire shall be hot–dip galvanized.
3. Chain link fabric shall be continuous and fastened to end, intermediate, gate and corner posts by tension bars with tension bands evenly spaced at 15" o.c. (max.).
4. Wire fastenings shall be No. 12 gauge galvanized tie wire.
5. Chain link fabric shall be fastened to line posts with wire fastenings evenly spaced at 12" o.c. (max.).
6. Chain link fabric shall be fastened to horizontal rails with wire fastenings evenly spaced at 12" o.c. (max.).
7. All wire fastening ends shall be wrapped around chain link a minimum of one complete turn. (Hooking of wire ends shall not be permitted).
8. Chain link fabric shall be fastened to truss rod with No. 9 gauge hog rings at 12" o.c.
9. No splicing shall be allowed on all straight–run pipes.
10. Top and bottom selvages of chain link fabric shall be knuckled.
11. Install intermediate posts at 200' max. intervals.
12. All field welds and damaged galvanized surfaces shall be painted with two coats of Z.R.C. cold galvanizing compound.
13. All fence posts shall be installed evenly spaced.
14. After installation, all bolt ends shall be cut flush with the nuts and ground smooth.

1 / A504 STANDARD CHAIN LINK DETAIL

NOT TO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CLIFFORD G.S. CHU
LICENSED PROFESSIONAL ARCHITECT
No. 5832
HAWAII, U.S.A.

EXP. 4–30–20

This work was prepared by me or under my supervision and construction of this project will be under my observation. ("Observation of construction" as defined under Section 16–115–2 of Hawaii Administrative Rules, Professional Engineers, Architects, Surveyors, and Landscape Architects.) The Contractor shall check and verify all dimensions at job before proceeding with work.

Signature

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

CHAIN LINK STANDARD DETAILS

BENJAMIN WOO ARCHITECTS

DESIGN BY:	CHECKED BY:	PROJECT NO.	DRAWING NO.
CC	CC, DC	CCR–17–6251B	A504
DRAWN BY:	APPROVED BY:	DATE	SHEET
DC	BW	OCT 2019	22 OF 50 SHTS.

SCALE: AS SHOWN

–
SCALE: AS NOTED

1

GENERAL:

A. WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE BUILDING CODE AS STATED BELOW. HOWEVER, WHERE REFERENCE IS MADE TO PERFORMANCE CONFORMING TO OTHER STANDARDS THE MORE STRINGENT SHALL APPLY.
   1. CITY AND COUNTY OF HONOLULU: AMENDED IBC, 2006
B. THE CONTRACTOR SHALL COMPARE ALL THE CONTRACT DOCUMENTS WITH EACH OTHER AND REPORT IN WRITING TO THE ARCHITECT ALL INCONSISTENCIES AND OMISSIONS.
C. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND VERIFY FIELD CONDITIONS AND SHALL COMPARE SUCH FIELD MEASUREMENTS AND CONDITIONS WITH THE DRAWINGS BEFORE COMMENCING WORK. REPORT IN WRITING TO THE ARCHITECT ALL INCONSISTENCIES AND OMISSIONS.
D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES.
E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR METHODS OF CONSTRUCTION, WORKMANSHIP AND JOB SAFETY. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING AS REQUIRED FOR STABILITY OF STRUCTURAL MEMBERS AND SYSTEMS.
F. CONSTRUCTION LOADING SHALL NOT EXCEED DESIGN LIVE LOAD UNLESS SPECIAL SHORING IS PROVIDED. ALLOWABLE LOADS SHALL BE REDUCED IN AREAS WHERE THE STRUCTURE HAS NOT ATTAINED FULL DESIGN STRENGTH.
G. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE ADJACENT PROPERTIES, STRUCTURES, STREETS AND UTILITIES DURING THE CONSTRUCTION PERIOD.
H. DETAILS NOTED AS TYPICAL ON THE STRUCTURAL DRAWINGS SHALL APPLY IN ALL CONDITIONS UNLESS SPECIFICALLY SHOWN OR NOTED.

DEMOLITION, REMOVAL AND RELOCATION WORK:

A. THE CONSTRUCTION DRAWINGS INDICATE THE GENERAL EXTENT OF REQUIRED DEMOLITION AND REMOVAL WORK. SEE ARCHITECTURAL, PLUMBING AND ELECTRICAL DRAWINGS FOR DEMOLITION DRAWINGS.
B. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS (PRIOR TO BID) TO DETERMINE THE EXTENT OF ALL REQUIRED DEMOLITION WORK. THE REMOVAL OR DEMOLITION OF MATERIALS, ACCESSORIES, FIXTURES, ETC., SHALL BE COMPLETE AND INCLUDE ALL RELATED ITEMS TO THE EXTENT THAT FUTURE CONSTRUCTION CAN BE PERFORMED AND COMPLETED WITHOUT ADDITIONAL COST TO THE OWNER.
C. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO INSURE AGAINST DAMAGE TO EXISTING ITEMS AND FEATURES REMAINING IN PLACE.
D. THE CONTRACTOR SHALL REMOVE EXISTING ITEMS AS DEEMED NECESSARY SO THAT FUTURE WORK CAN BE PERFORMED AND ALSO, SO THAT ANY EXISTING ITEM IS NOT DAMAGED WHEN FUTURE WORK IS PERFORMED. THE CONTRACTOR SHALL ALSO INSTALL ANY OR ALL OF THE ITEMS, PATCH AND RESTORE SURROUNDING SURFACES AS REQUIRED AS PART OF THE WORK ACCEPTABLE TO THE ARCHITECT.
E. LOCATION OF UNDERGROUND UTILITIES AND PIPES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS OF THE EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THEM. ANY PORTION OF THE EXISTING UTILITIES THAT MUST BE REMOVED OR OTHERWISE DISTURBED TO ACCOMPLISH THIS WORK CALLED FOR ON THE PLANS SHALL BE RECONSTRUCTED, REPLACED OR RESTORED TO THE ORIGINAL CONDITION AT THE CONTRACTOR'S OWN EXPENSE.

DESIGN CRITERIA (NEW WORK ONLY):

A. FLOOR LIVE LOAD
   1. SCHOOLS
      a. CLASSROOMS: ---------- 40 PSF
      b. FIRST-FLOOR CORRIDORS: ---------- 100 PSF
B. ROOF LIVE LOAD: ---------- 20 PSF
C. WIND DESIGN DATA
   1. BASIC WIND SPEED (3-SECOND GUST): ---------- 100 MPH
   2. OCCUPANCY CATEGORY: ---------- II
   3. IMPORTANCE FACTOR: ---------- 1.0
   4. EXPOSURE CATEGORY: ---------- B
   5. Kzt = 1.00
   6. Kd = 0.70
   7. BUILDING ENCLOSURE CLASSIFICATION: ---------- PARTIALLY ENCLOSED
   8. INTERNAL PRESSURE COEFFICIENT: ---------- +0.55
   9. COMPONENTS AND CLADDING DESIGN WIND PRESSURE: ---- VARIES
D. EARTHQUAKE DESIGN DATA:
   1. OCCUPANCY CATEGORY: ---------- II
   2. IMPORTANCE FACTOR: ---------- 1.0
   3. MAPPED SPECTRAL RESPONSE ACCELERATIONS
      a. SHORT PERIOD: ---------- 0.584g
      b. 1-SEC PERIOD: ---------- 0.171g
   4. SITE CLASS: ---------- D (ASSUMED)
   5. SPECTRAL RESPONSE COEFFICIENTS
      a. SHORT PERIOD: ---------- 0.52
      b. 1-SEC PERIOD: ---------- 0.24
   6. DESIGN CATEGORY: ---------- C
   7. BASIC SEISMIC-FORCE-RESISTING SYSTEM: ---------- LIGHT FRAMED WALLS WITH WOOD STRUCTURAL PANELS
   8. DESIGN BASE SHEAR (ULTIMATE): ---------- .08*W KIPS
   9. SEISMIC RESPONSE COEFFICIENT: ---------- .08
   10. RESPONSE MODIFICATION FACTOR: ---------- 6.5
   11. ANALYSIS PROCEDURE: ---------- EQUIVALENT LATERAL FORCE PROCEDURE
E. SOILS
   1. SITE CLASS: ---------- D (ASSUMED)
   2. ALLOWABLE BEARING CAPACITY: ---------- 1500 PSF (ASSUMED)

SPECIAL INSPECTIONS:

A. CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT SPECIAL INSPECTION AGENCY APPROVED BY THE CONTRACTING OFFICER TO PERFORM ALL REQUIRED SPECIAL INSPECTIONS AS PART OF THE CONTRACTOR'S CONTRACT SCOPE OF WORK AND CORRESPONDING CONTRACT WORK BID PRICE
B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT SPECIAL INSPECTION OF PORTIONS OF THE WORK AS REQUIRED BY THE BUILDING CODE IS MADE AT THE APPROPRIATE TIME. THE CONTRACTOR SHALL SUBMIT STATEMENT OF RESPONSIBILITY TO THE OWNER AND BUILDING DEPARTMENT PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR SHALL GIVE TIMELY NOTICE OF WHEN AND WHERE INSPECTIONS ARE TO BE MADE AND PROVIDE ACCESS FOR THE INSPECTOR. FREQUENCY OF INSPECTION IS DEFINED IN THE IBC, SECTION 1704 TABLES, AS AMENDED BY THE CITY. THE CONTRACTOR SHALL CORRECT DEFECTIVE WORK AT NO ADDITIONAL COST TO THE OWNER AND PAY FOR RE-INSPECTION AS REQUIRED.
C. SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS DONE IN CONFORMANCE WITH APPROVED CONSTRUCTION DOCUMENTS. THE INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT TO THE OWNER AND LICENSED ARCHITECT OR ENGINEER WHO IN TURN SHALL SUBMIT A WRITTEN STATEMENT TO THE CITY CERTIFYING RECEIPT OF THE FINAL INSPECTION LETTER AND DOCUMENTING THAT THERE ARE NO KNOWN UNRESOLVED CODE REQUIREMENTS.
D. THE FOLLOWING TYPE OF WORK LISTED IN THE IBC, SECTION 1704, AS AMENDED BY THE CITY, REQUIRES SPECIAL INSPECTION:
   1. INSPECTION OF FABRICATOR/SHOP UNLESS WORK IS DONE BY A REGISTERED AND APPROVED FABRICATOR SHOP.
      a. STRUCTURAL STEEL
   2. STEEL CONSTRUCTION
      a. WELDING
      b. HIGH STRENGTH BOLTING
   3. CONCRETE CONSTRUCTION
      a. EXCEPTIONS: INSPECTIONS NOT REQUIRED FOR CONCRETE POURS FOR
         i. CONCRETE FOOTINGS SUPPORTING BUILDINGS THREE STORIES OR LESS IN HEIGHT THAT ARE FULL SUPPORTED ON EARTH OR ROCK (DESIGNED f'c=2,500 PSI), INSPECTION OF REINFORCING IS REQUIRED
         ii. NON STRUCTURAL SLABS SUPPORT DIRECTLY ON GROUND.
      b. PLACEMENT OF REINFORCING STEEL
      c. BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE.
      d. POST INSTALLED CONCRETE BOLTS.
      e. DRILL AND EPOXY REINFORCING BARS PER DETAIL 8, SHEET S501.
   4. COLD FORMED STEEL FRAMING
      a. LATERAL FORCE RESISTING SYSTEM COMPONENTS WELDING, SCREW ATTACHMENTS, BOLTING, ANCHORING AND OTHER FASTENS.
         i. SHEAR PANELS

FOUNDATION:

A. CONTRACTOR SHALL PROVIDE FOR DE-WATERING OF EXCAVATION FROM SURFACE WATER, GROUND WATER OR SEEPAGE.
B. EXCAVATIONS FOR ANY PURPOSE SHALL NOT REMOVE LATERAL SUPPORT FROM ANY FOOTING OR FOUNDATION WITHOUT FIRST UNDERPINNING OR PROTECTING THE FOOTING OR FOUNDATION AGAINST SETTLEMENT OR LATERAL TRANSLATION.
C. FOOTINGS SHALL BEAR ON UNDISTURBED IN-SITU FIRM SOILS. BOTTOM OF FOOTINGS SHALL BE COMPACTED TO PROVIDE A RELATIVELY FIRM AND SMOOTH BEARING SURFACE PRIOR TO PLACEMENT OF REINFORCING STEEL AND CONCRETE. IF SOFT AND/OR LOOSE MATERIALS ARE ENCOUNTERED AT THE BOTTOM OF FOOTING EXCAVATIONS, THEY SHALL BE OVER-EXCAVATED TO EXPOSE THE UNDERLYING FIRM MATERIALS. THE OVER-EXCAVATION SHALL BE BACKFILLED WITH SELECT GRANULAR MATERIAL COMPACTED TO A MINIMUM OF 95% RELATIVE COMPACTION OR THE FOOTING BOTTOM MAY BE EXTENDED DOWN TO THE UNDERLYING COMPETENT MATERIAL.
D. UNLESS NOTED OTHERWISE, THE MINIMUM DEPTH OF FOOTINGS BELOW THE UNDISTURBED GROUND SURFACE SHALL BE 12 INCHES.
E. CONTRACTOR SHALL ENGAGE A GEOTECHNICAL ENGINEER. GEOTECHNICAL ENGINEER SHALL REVIEW SOILS AT FOUNDATIONS TO VERIFY ASSUMPTIONS STATED IN DESIGN CRITERIA OF THIS DOCUMENT.FOUNDATIONS SHALL BE MONITORED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF CONCRETE AND REINFORCING STEEL TO CONFIRM FOUNDATION BEARING CONDITIONS AND REQUIRED EMBEDMENT DEPTHS. GEOTECHNICAL ENGINEER SHALL SUBMIT LETTER OF COMPLIANCE TO THE ARCHITECT.

CONCRETE:

A. CONCRETE CONSTRUCTION SHALL CONFORM TO AMERICAN CONCRETE INSTITUTE ACI 318
B. CONCRETE SHALL BE REGULAR WEIGHT HARD ROCK CONCRETE AND SHALL HAVE MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
C. CONCRETE DELIVERY TICKETS SHALL RECORD ALL FREE WATER IN THE MIX: AT BATCHING BY PLANT, FOR CONSISTENCY BY DRIVER, AND ANY ADDITIONAL REQUEST BY CONTRACTOR IF PERMITTED BY THE MIX DESIGN.
D. WATER USED IN MIXING CONCRETE SHALL BE CLEAN AND FREE FROM INJURIOUS AMOUNTS OF OILS, ACIDS, ALKALIS, SALTS, ORGANIC MATERIALS OR OTHER SUBSTANCES THAT ARE DELETERIOUS TO CONCRETE OR STEEL REINFORCEMENT.
E. FREQUENCY OF CONDUCTING STRENGTH TESTS SHALL BE AS FOLLOWS:
   1. SAMPLES FOR STRENGTH OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 150 CUBIC YARDS OF CONCRETE, NOR LESS THAN ONCE FOR EACH 5,000 SQUARE FEET OF SURFACE AREA FOR SLABS OR WALLS.
   2. IF THE TOTAL VOLUME OF CONCRETE IS SUCH THAT THE FREQUENCY OF TESTING WOULD PROVIDE LESS THAN FIVE STRENGTH TESTS FOR A GIVEN CLASS OF CONCRETE, TESTS SHALL BE MADE FROM AT LEAST FIVE RANDOMLY SELECTED BATCHES OR FROM EACH BATCH IF FEWER THAN FIVE BATCHES ARE USED.
F. ALL INSERTS, ANCHOR BOLTS, PLATES, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE HOT-DIPPED GALVANIZED ACCORDING TO ASTM A153 UNLESS OTHERWISE NOTED.
G. REINFORCING BARS, ANCHOR BOLTS, INSERTS, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE SECURED IN POSITION PRIOR TO PLACEMENT OF CONCRETE.
H. CONDUITS, PIPES, AND SLEEVES PASSING THROUGH A SLAB OR FOOTING AND NOT CONFORMING TO TYPICAL DETAILS SHALL BE LOCATED AND SUBMITTED TO THE ARCHITECT FOR APPROVAL.
I. MEASURE FLOOR AND SLAB FLATNESS AND LEVELNESS ACCORDING TO ASTM E1155 WITHIN 48 HOURS OF FINISHING.

REINFORCING STEEL:

A. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60.
B. WELDED REINFORCING STEEL SHALL BE LOW-ALLOY DEFORMED BARS CONFORMING TO ASTM A706.
C. CLEAR CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:
   1. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3".
   2. CONCRETE FORMED AND EXPOSED TO EARTH OR WEATHER: 1.5"
D. STANDARD HOOKS ON REINFORCING BARS USED SHALL COMPLY WITH ACI 318, SECTION 7.1.
E. MINIMUM REINFORCEMENT BEND DIAMETERS SHALL COMPLY WITH ACI 318, SECTION 7.2.

CONCRETE ANCHOR ADHESIVE:

A. CONCRETE ANCHOR ADHESIVE SHALL BE HILTI HIT-RE 500-SD (ESR 2322); POWERS PE 1000 (ESR 2583); SIMPSON SET XP (ESR 2508), OR APPROVED EQUAL.
B. CARBON STEEL THREADED RODS SHALL CONFORM TO ASTM A36/307 GRADE C AND BE FURNISHED WITH A MINIMUM 0.0002 INCH THICK ZINC ELECTROPLATED COATING COMPLYING WITH ASTM B633, SC1, OR A MINIMUM 0.0021 INCH THICK MECHANICALLY DEPOSITED ZINC COATING COMPLYING WITH ASTM B695, CLASS 65, OR STAINLESS STEEL THREADED RODS, TYPE 316 COMPLYING WITH ASTM F593. STEEL GRADES AND MATERIAL TYPES OF THE WASHERS AND NUTS SHALL BE MATCHED TO THE THREADED ROD.
C. INSTALL ONLY WHERE INDICATED ON DRAWINGS. SUBSTITUTION FOR EMBEDDED ANCHORS IS ALLOWED ONLY WHERE INDICATED OR WHEN APPROVED BY ENGINEER.
D. LOCATE ANY EXISTING REINFORCING STEEL PRIOR TO DRILLING HOLES AND RELOCATE HOLE SLIGHTLY AS REQUIRED.
E. INSTALL IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.
F. SPECIAL INSPECTION SHALL BE PROVIDED.

STRUCTURAL STEEL:

A. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STEEL CONSTRUCTION, THIRTEENTH EDITION.
B. STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE NOTED.
C. STEEL WIDE FLANGE SECTIONS SHALL CONFORM TO ASTM A992.
D. CHANNELS, ANGLES SHALL CONFORM TO ASTM A36.
E. PLATES SHALL CONFORM TO ASTM A36.
F. STEEL PIPES SHALL CONFORM TO ASTM A53, TYPE E OR S, GRADE B.
G. BOLTS SHALL CONFORM TO ASTM A307, GRADE A UNLESS OTHERWISE NOTED.
H. WELDS AND WELDING PROCEDURES SHALL CONFORM TO THE STRUCTURAL WELDING CODE AWS D1.1 OF THE AMERICAN WELDING SOCIETY.
I. WELDING SHALL BE PERFORMED BY WELDERS PREQUALIFIED FOR WELDING PROCEDURES TO BE USED.
J. WELDING ELECTRODES SHALL BE E70XX.
K. ALL STEEL SHALL BE PRIME PAINTED IN THE SHOP.
L. EXPOSED STEEL SHALL BE HOT-DIPPED GALVANIZED ACCORDING TO ASTM A123.
M. ALL ANCHOR BOLTS, PLATES, AND OTHER ITEMS TO BE CAST IN CONCRETE SHALL BE HOT-DIPPED GALVANIZED ACCORDING TO ASTM A153 UNLESS OTHERWISE NOTED.

STEEL DECK:

A. STEEL DECK AND ACCESSORIES SHALL BE FORMED FROM GALVANIZED STEEL SHEETS CONFORMING TO ASTM A653, STRUCTURAL STEEL (SS), GRADE 33, MINIMUM YIELD 38 KSI, G60 ZINC COATING.
B. STEEL DECK SHALL BE OF THE PROFILE DEPTH AND THICKNESS AS INDICATED ON THE DRAWINGS.
C. STEEL DECK SHALL HAVE A MINIMUM END BEARING OF 2 INCHES END JOINTS SHALL BE LAPPED 2 INCHES MINIMUM.
D. COMPOSITE AND NONCOMPOSITE STEEL DECKS MAY BE EITHER LAPPED OR BUTTED AT CONTRACTOR'S OPTION.
E. STEEL DECK SHALL BE TRIPLE SPAN CONTINUOUS WHERE POSSIBLE. DO NOT LOCATE SINGLE SPANS AT EDGES OR CORNERS.
F. WELDED ATTACHMENT OF STEEL DECK UNITS TO THE SUPPORTING MEMBERS SHALL CONFORM TO AWS D1.3. WELDING OF STEEL DECK SHALL BE PERFORMED BY CERTIFIED LIGHT GAGE STEEL WELDERS.
G. ARC SPOT OR ARC SEAM (PUDDLE) WELDS SHALL HAVE AN EFFECTIVE FUSION AREA TO SUPPORTING MEMBERS, EQUIVALENT TO AT LEAST 3/8 INCH BY 1 INCH LONG OR ½ INCH DIAMETER AND IN NO CASE SHALL ANY WELD SPACING EXCEED 3 FEET. IF STUD WELDS ARE WELDED THROUGH STEEL DECK TO STRUCTURAL STEEL, STUD WELDS CAN REPLACE ARC SPOT WELDS.

COLD-FORMED STEEL FRAMING:

A. COLD-FORMED METAL FRAMING SHALL COMPLY WITH AISI'S "NORTH AMERICAN SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" AND ITS "STANDARD FOR COLD FORMED STEEL FRAMING -GENERAL PROVISIONS"
B. COLD-FORMED STEEL MEMBERS AND ACCESSORIES SHALL BE OF THE TYPE AND THICKNESS CALLED FOR ON THE DRAWINGS. MEMBER DESIGNATIONS ARE PER STEEL STUD MANUFACTURER'S ASSOCIATION.
C. ALL MEMBERS 54, 68 OR 97 MILS THICK SHALL MEET THE REQUIREMENTS OF ASTM A1003 GRADE ST50H. ALL MEMBERS 33 OR 43 MILS THICK SHALL MEET THE REQUIREMENTS OF ASTM A1003 GRADE ST33H.
D. CUT FRAMING MEMBERS BY SAWING OR SHEARING. DO NOT TORCH CUT.
E. PREFABRICATED FRAMING HARDWARE SHALL BE SIMPSON STRONG TIE GALVANIZED OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
F. PLACE A LAYER OF 30# ROOFING FELT BETWEEN ALL COLD-FORMED METAL MEMBERS AND CONCRETE SURFACES.
G. HOLES IN WALL STUDS AND OTHER STRUCTURAL MEMBERS SHALL NOT EXCEED 1.5 INCHES IN WIDTH OR 4 INCHES IN LENGTH. HOLES SHALL BE PERMITTED ONLY ALONG THE CENTERLINE OF THE WEB OF THE FRAMING MEMBER. HOLES SHALL NOT BE LESS THAN 24 INCHES CENTER TO CENTER AND SHALL NOT BE LOCATED MORE THAN 10 INCHES FROM EDGE OF HOLE TO END OF MEMBER.
H. SCREWS SHALL BE INSTALLED WITH A MINIMUM EDGE DISTANCE AND CENTER-TO-CENTER SPACING OF 1/2 INCH, SHALL BE SELF TAPPING AND SHALL CONFORM TO SAE J 78. SCREWS SHALL EXTEND THROUGH THE STEEL A MINIMUM OF THREE EXPOSED THREADS. ALL SELF-DRILLING TAPPING SCREWS CONFORMING TO SAE J 78 SHALL HAVE A TYPE II COATING IN ACCORDANCE WITH ASTM B633.
I. STUD WEB HOLES CLOSER THAN 10 INCHES FROM THE EDGE OF THE HOLE TO THE EDGE OF THE MEMBER SHALL BE PATCHED WITH A SOLID PLATE, C-SECTION OR TRACK SECTION. THE PATCH SHALL BE OF A MINIMUM THICKNESS AS THE STUD MEMBER AND SHALL EXTEND AT LEAST 1 INCH BEYOND ALL EDGES OF THE HOLE. THE PATCH SHALL BE FASTENED TO THE WEB WITH NO. 8 SCREWS SPACED NO GREATER THAN 1 INCH CENTER TO CENTER ALONG THE EDGES OF THE PATCH, WITH A MINIMUM EDGE DISTANCE OF 1/2 INCH.
J. STEEL STUDS AND OTHER STRUCTURAL MEMBERS SHALL NOT BE SPLICED.

DIMENSION LUMBER:

A. WOOD USED FOR SUPPORTING LOADS SHALL BE IDENTIFIED BY THE GRADE MARK OF A LUMBER GRADING OR INSPECTION AGENCY THAT HAS BEEN APPROVED BY AN ACCREDITATION BODY THAT COMPLIES WITH AMERICAN SOFTWOOD LUMBER STANDARD DOC PS 20 OR EQUIVALENT.
B. UNLESS NOTED OTHERWISE, WOOD USED SHALL HAVE THE FOLLOWING GRADES OR BETTER:
   1. GRADE NO. 2
C. WOOD STRUCTURAL PANELS SHALL CONFORM TO THE REQUIREMENTS FOR THEIR TYPE IN DOC PS 1 OR PS 2. EACH PANEL OR MEMBER SHALL BE IDENTIFIED FOR GRADE AND GLUE TYPE BY THE TRADEMARKS OF AN APPROVED TESTING AGENCY.
D. WOOD STRUCTURAL PANEL SHEATHING USED AS THE EXPOSED FINISH ON THE EXTERIOR OF OUTSIDE WALLS SHALL HAVE AN EXTERIOR EXPOSURE DURABILITY CLASSIFICATION.
E. WOOD STRUCTURAL PANEL SHEATHING USED ON EXTERIOR OF OUTSIDE WALLS BUT NOT AS THE EXPOSED FINISH SHALL BE OF A TYPE MANUFACTURED WITH EXTERIOR GLUE (EXPOSURE 1 OR EXTERIOR). WOOD STRUCTURAL PANEL SHEATHING USED ELSEWHERE SHALL BE OF A TYPE MANUFACTURED WITH INTERMEDIATE OR EXTERIOR GLUE.
F. WOOD SUPPORTING PERMANENT STRUCTURES SHALL BE PRESERVATIVE TREATED AND CONFORM TO THE REQUIREMENTS OF THE APPLICABLE AWPA STANDARD FOR THE SPECIES, PRODUCT, PRESERVATIVE, AND END USE. PRESERVATIVE SHALL CONFORM TO AWPA C2.
G. WOOD REQUIRED TO BE PRESERVATIVE TREATED SHALL BEAR THE QUALITY MARK OF AN INSPECTION AGENCY.
H. WOOD SHALL BE AT A MOISTURE CONTENT OF 19 PERCENT OR LESS BEFORE BEING COVERED WITH INSULATION, INTERIOR WALL FINISH, FLOOR COVERINGS OR OTHER MATERIALS.
I. NAILS FOR WOOD STRUCTURAL PANEL SHEATHING SHALL BE PLACED NO LESS THAN 3/8 INCH FROM THE PANEL EDGE, NOT MORE THAN 12 INCHES APART ALONG INTERMEDIATE SUPPORTS, AND 6 INCHES ALONG PANEL EDGE BEARINGS. SHEET TYPE SHEATHING SHALL BE ARRANGED SO THAT THE WIDTH OF A SHEET SHALL NOT BE LESS THAN 2 FEET.

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

BRIAN C MURDOCK
LICENSED PROFESSIONAL ENGINEER
No. 11208-S
HAWAII, U.S.A.

Brian Murdock

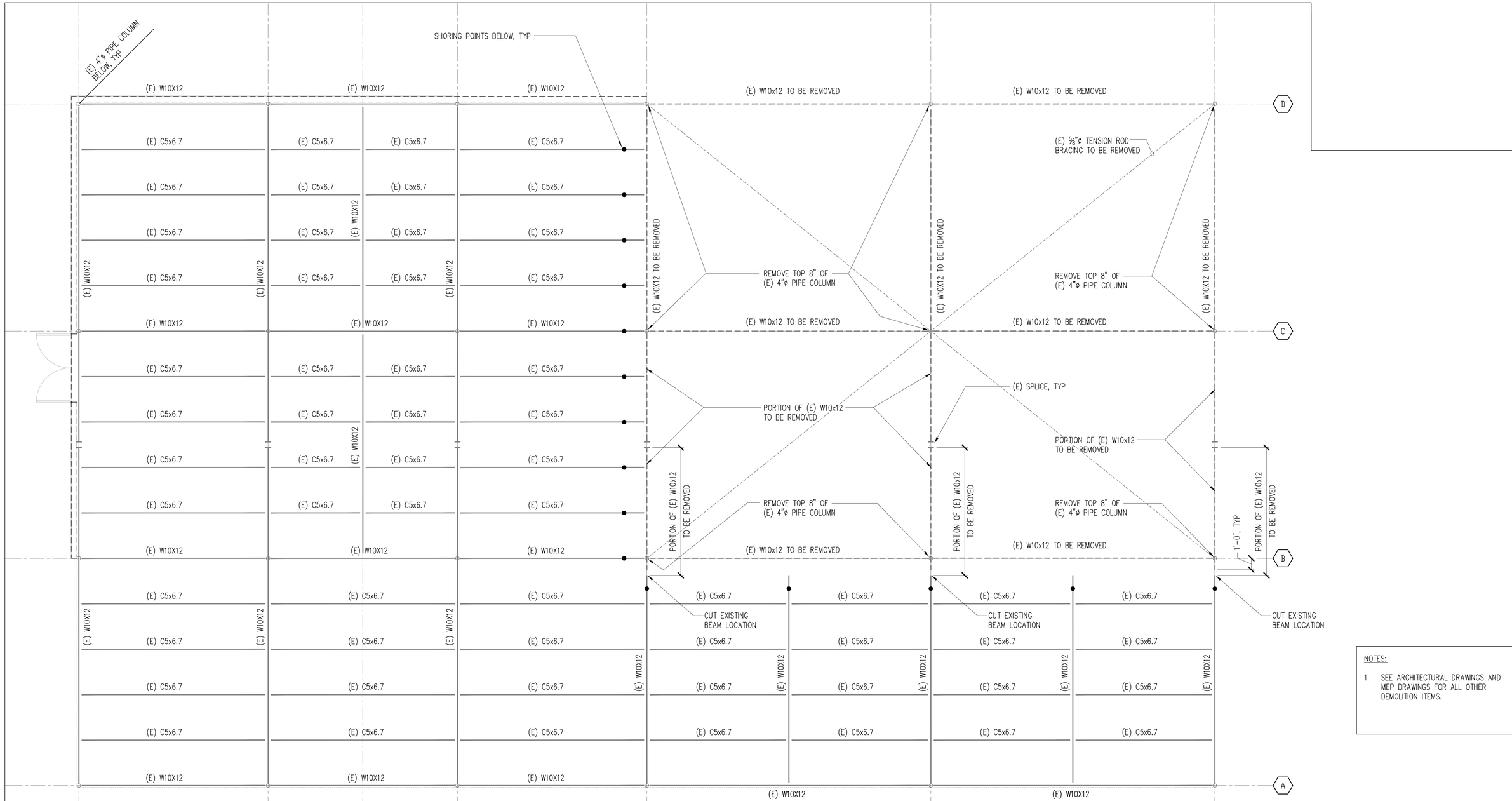
EXPIRATION DATE OF THE LICENSE 4/30/2020
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

GENERAL NOTES

KAI HAWAII		PROJECT NO.	DRAWING NO.
DESIGN BY: ZS	CHECKED BY: BM	CCR-17-6251B	S001
DRAWN BY: CAD	APPROVED BY: BM	DATE: OCT 2019	SHEET 23 OF 50 SHTS.
SCALE: AS SHOWN			



NOTES:

1. SEE ARCHITECTURAL DRAWINGS AND MEP DRAWINGS FOR ALL OTHER DEMOLITION ITEMS.

1 / S101 (E) ROOF FRAMING PLAN - STRUCTURAL DEMO, SHORING AND REPAIRS

SCALE: 1/4" = 1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

BRIAN C MURDOCK LICENSED PROFESSIONAL ENGINEER No. 11208-S HAWAII, U.S.A.

EXPIRATION DATE OF THE LICENSE 4/30/2020
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

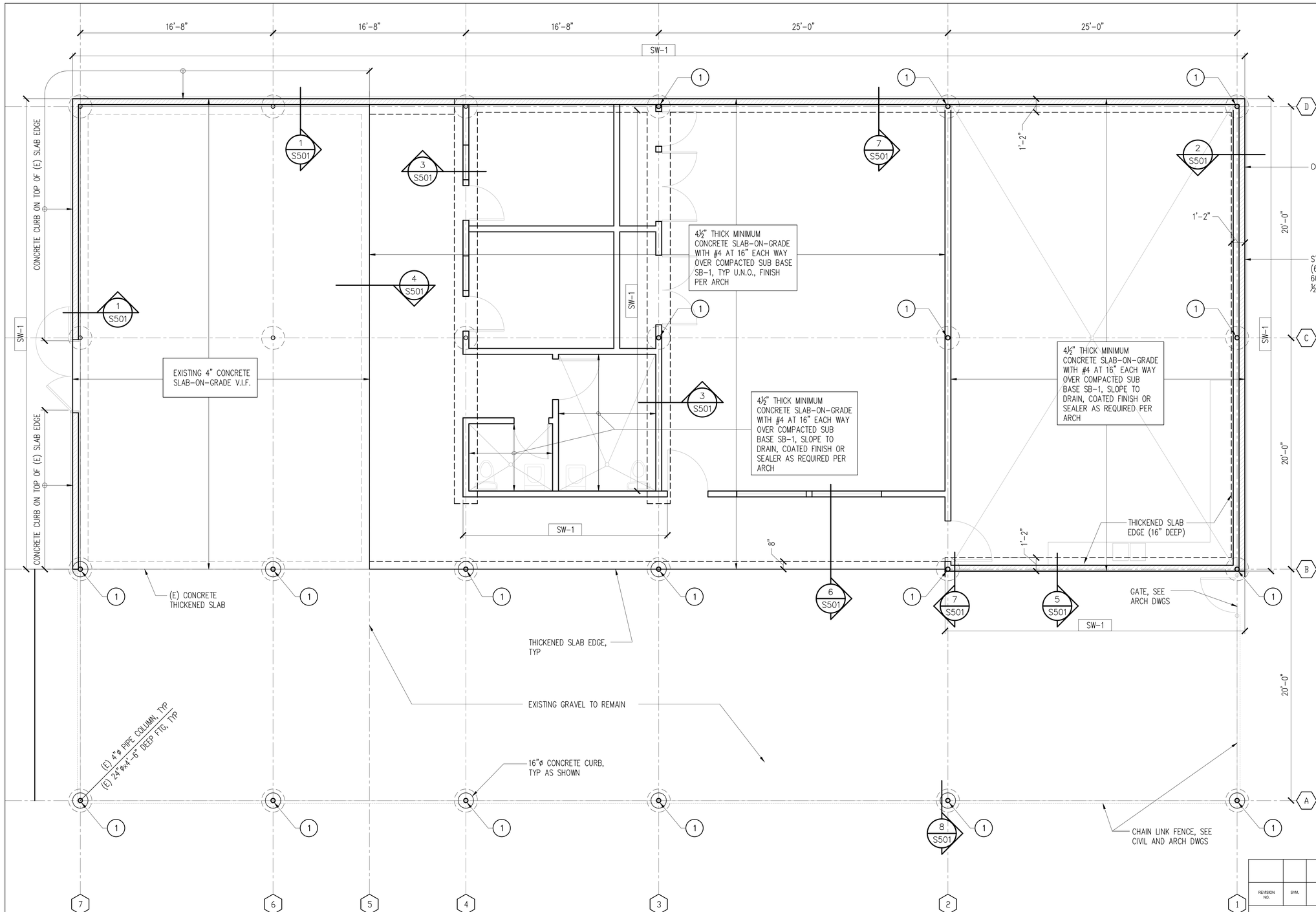
UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE

5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

ROOF FRAMING PLAN – STRUCTURAL DEMO, SHORING AND REPAIRS

KAI HAWAII		PROJECT NO.	DRAWING NO.
DESIGN BY: ZS	CHECKED BY: BM	CCR-17-6251B	S101
DRAWN BY: CAD	APPROVED BY: BM	DATE	SHEET 24
SCALE: AS SHOWN		OCT 2019	OF 50 SHTS.



NOTES:

1. CORROSION REPAIR, SEE NOTES THIS SHEET.
2. (1) INDICATES REPAIR TYPE.
3. MECHANICAL PAD, SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATION. PROVIDE CONCRETE PAD PER DETAIL 10/S501
4. GENERATOR PAD, SEE ARCHITECTURAL AND ELECTRICAL DRAWINGS FOR LOCATION. PROVIDE CONCRETE PAD PER DETAIL 9/S501

CORROSION REPAIR NOTES:

SURFACE PREPARATION AND COATINGS PER SSPC AND NACE COMPLYING WITH ALL FEDERAL, STATE AND LOCAL LAW REQUIRED FOR THE PROTECTION OF THE PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY:

1. REMOVE CORROSION AND CLEAN STEEL SURFACES PER SSPC SP3 POWER TOOL CLEANING. REMOVE ALL LOOSE MILL SCALE, LOOSE RUST, LOOSE PAINT AND OTHER LOOSE DETRIMENTAL FOREIGN MATTER BY POWER WIRE BRUSHING, POWER SANDING, POWER GRINDING, POWER TOOL CHIPPING AND POWER TOOL DESCALING.
2. ALL STEEL THAT WILL BE COMPLETELY ENCLOSED AFTER CONSTRUCTION SHALL BE PRIME PAINTED WITH ZINC BASED PRIMER, SEE SPECIFICATIONS.
3. ALL STEEL THAT WILL BE PARTIALLY EXPOSED OR COMPLETELY EXPOSED SHALL BE PRIME PAINT STRUCTURAL STEEL WITH ZINC RICH PRIMER, SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
4. PAINT EXPOSED STRUCTURAL STEEL PER ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

REPAIRS TYPES:

(1) ADD 5"ø STD PIPE 10" HIGH AT BASE OF (E) COLUMN, WELD ALL AROUND, SEE DETAIL 8/S501.

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

BRIAN C MURDOCK LICENSED PROFESSIONAL ENGINEER No. 11208-S HAWAII, U.S.A.

EXPIRATION DATE OF THE LICENSE 4/30/2020
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

UNIVERSITY OF HAWAII
STATE OF HAWAII

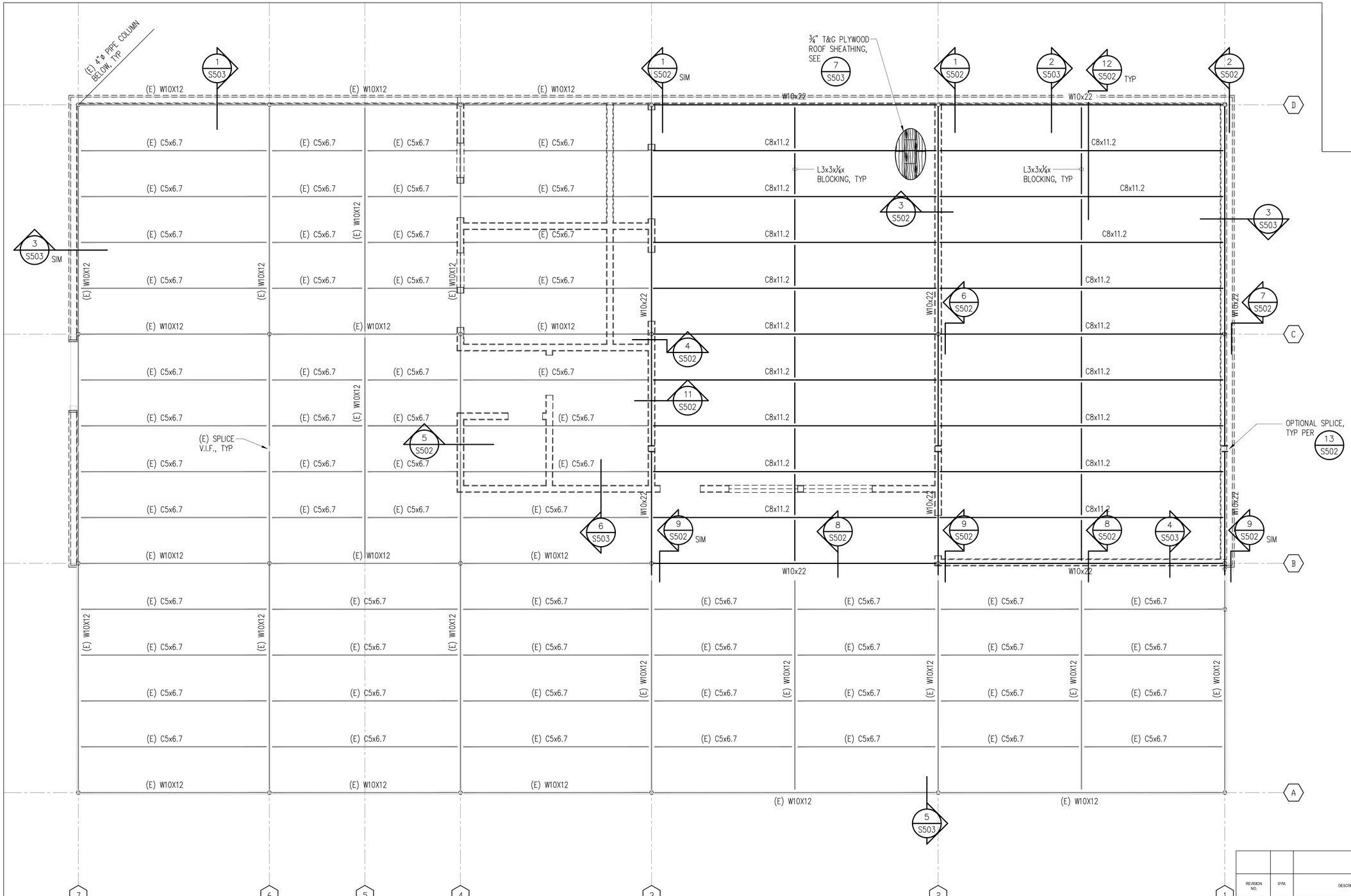
WINDWARD COMMUNITY COLLEGE

5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

FOUNDATION PLAN

KAI HAWAII		PROJECT NO.	DRAWING NO.
DESIGN BY: ZS	CHECKED BY: BM	CCR-17-6251B	S201
DRAWN BY: CAD	APPROVED BY: BM	DATE	SHEET 25 OF 50 SHTS.
SCALE: AS SHOWN		OCT 2019	

1/S201 FOUNDATION PLAN
SCALE: 1/4" = 1'-0"



NOTES:

1. ALL EXISTING STEEL FRAMING SHALL BE WIRE BRUSHED OR SAND BLASTED, PRIME PAINTED AND PAINTED.
3. (1) INDICATES REPAIR TYPE

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

BRIAN C MURDOCK LICENSED PROFESSIONAL ENGINEER No. 11208-S HAWAII, U.S.A.

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STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE

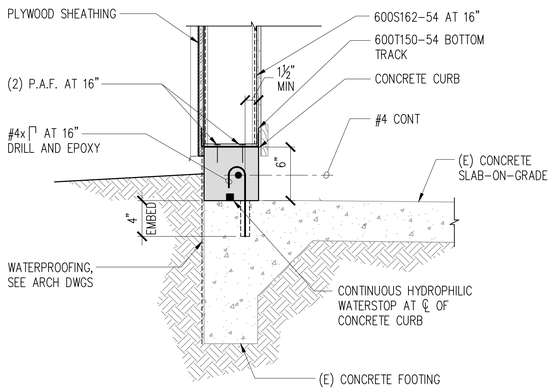
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

ROOF FRAMING PLAN

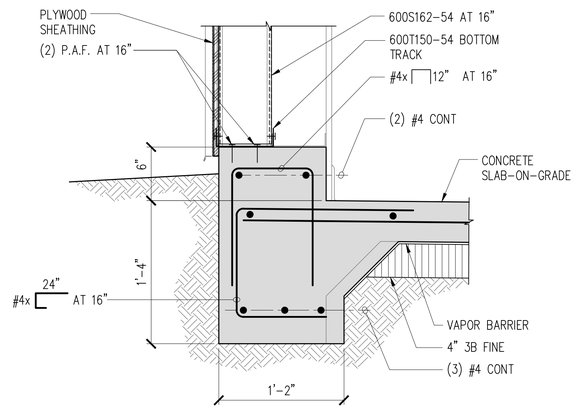
KAI HAWAII

DESIGN BY:	CHECKED BY:	PROJECT NO.	DRAWING NO.
ZS	BM	CCR-17-6251B	S202
DRAWN BY:	APPROVED BY:	DATE	SHEET
CAD	BM	OCT 2019	26 OF 50 SHTS.
SCALE: AS SHOWN			

1/202 ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"



1 S501 **SECTION**
SCALE: 1-1/2"" = 1'-0"



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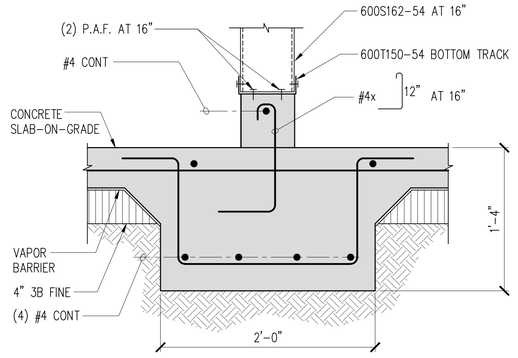

3 S501 **SECTION**
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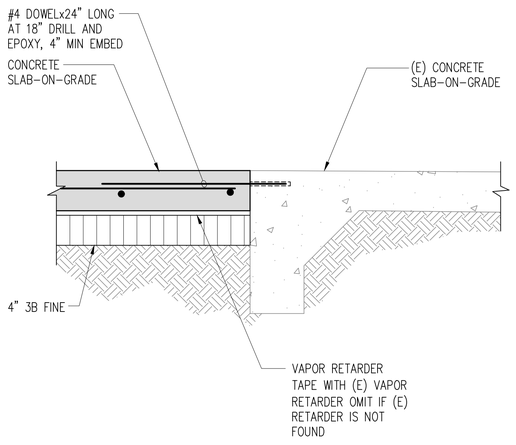

4 S501 **SECTION**
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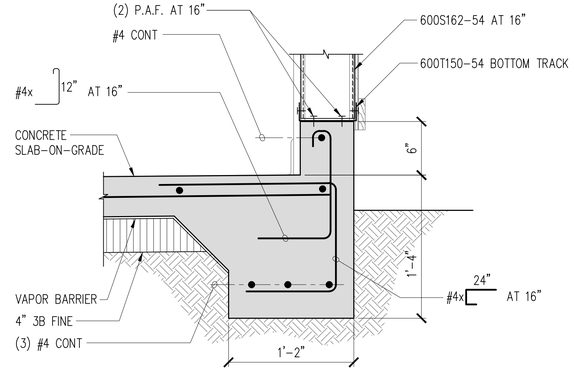

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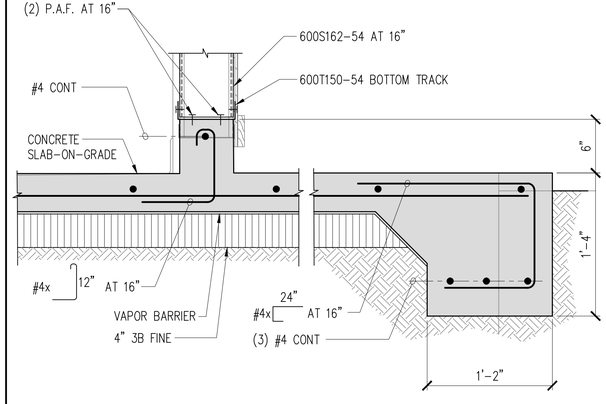

6 S501 **SECTION**
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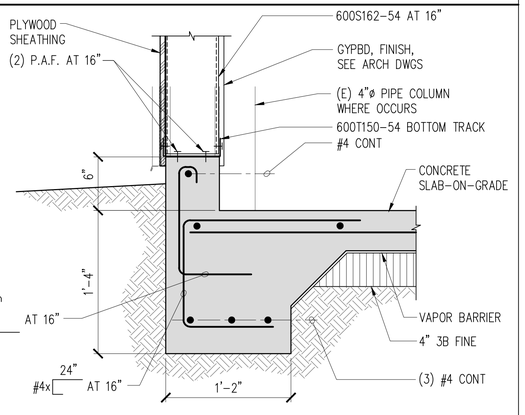

7 S501 **SECTION**
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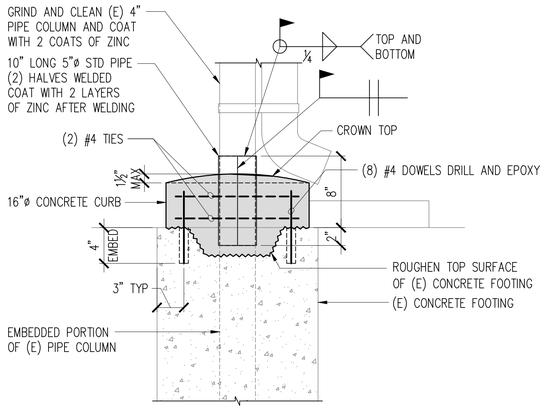

8 S501 **SECTION**
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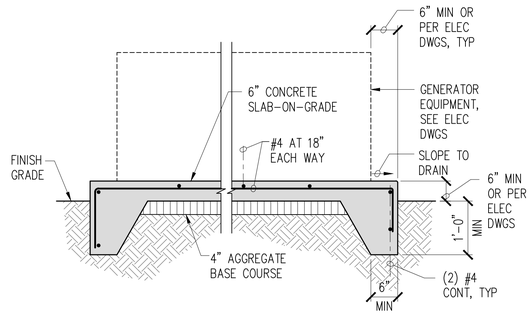
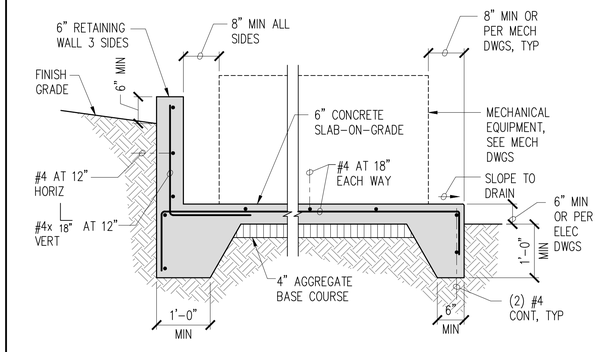


9 S501 **GENERATOR EQUIPMENT PAD**
NOT TO SCALE



10 S501 **MECHANICAL EQUIPMENT PAD**
NOT TO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

BRIAN C MURDOCK LICENSED PROFESSIONAL ENGINEER No. 11208-S HAWAII, U.S.A.

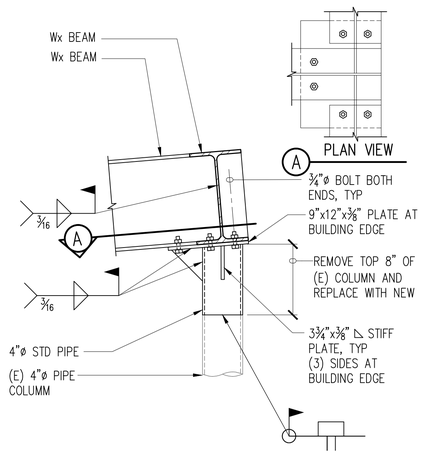
EXPIRATION DATE OF THE LICENSE 4/30/2020
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

SECTIONS AND DETAILS

KAI HAWAII		PROJECT NO.	DRAWING NO.
DESIGN BY: ZS	CHECKED BY: BM	CCR-17-6251B	S501
DRAWN BY: CAD	APPROVED BY: BM	DATE: OCT 2019	SHEET 27 OF 50 SHTS.
SCALE: AS SHOWN			



1 S502 **SECTION**
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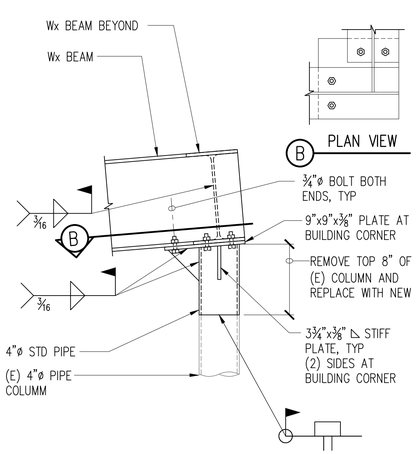
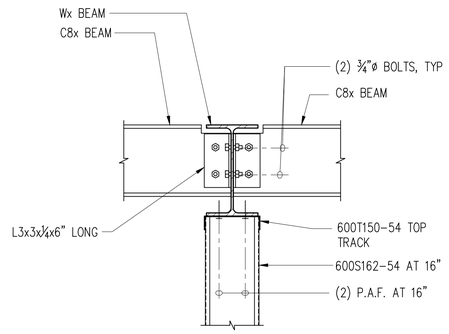
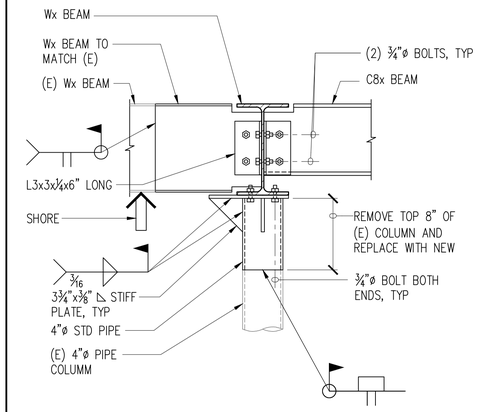


2 S502 **SECTION**
SCALE: 1–1/2"" = 1'–0"



3 S502 **SECTION**
SCALE: 1–1/2"" = 1'–0"



4 S502 **SECTION**
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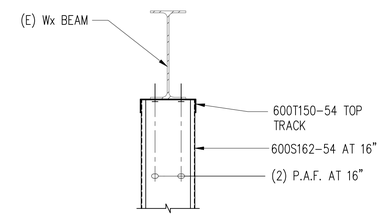

5 S502 **SECTION**
SCALE: 1–1/2"" = 1'–0"

6 S502 **SECTION**
SCALE: 1–1/2"" = 1'–0"

7 S502 **SECTION**
SCALE: 1–1/2"" = 1'–0"

8 S502 **SECTION**
SCALE: 1–1/2"" = 1'–0"

9 S502 **SECTION**
SCALE: 1–1/2"" = 1'–0"

11 S502 **SECTION**
SCALE: 1–1/2"" = 1'–0"

12 S502 **SECTION**
SCALE: 1–1/2"" = 1'–0"

13 S502 **SECTION**
SCALE: 1–1/2"" = 1'–0"

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

BRIAN C MURDOCK
LICENSED PROFESSIONAL ENGINEER
No. 11208–S
HAWAII, U.S.A.

EXPIRATION DATE OF THE LICENSE 4/30/2020
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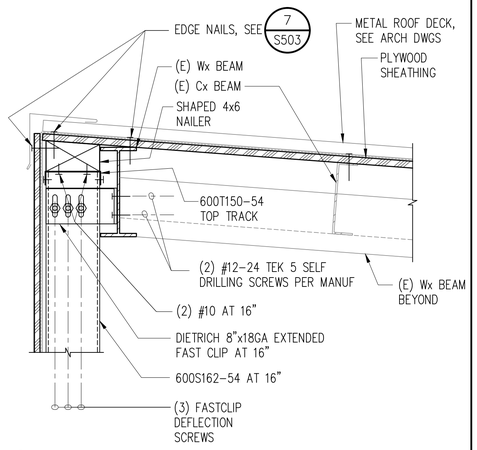
UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

SECTIONS AND DETAILS

KAI HAWAII		PROJECT NO.	DRAWING NO.
DESIGN BY: ZS	CHECKED BY: BM	CCR–17–6251B	S502
DRAWN BY: CAD	APPROVED BY: BM	DATE: OCT 2019	SHEET 28 OF 50 SHTS.
SCALE: AS SHOWN			



1 S503 **SECTION**
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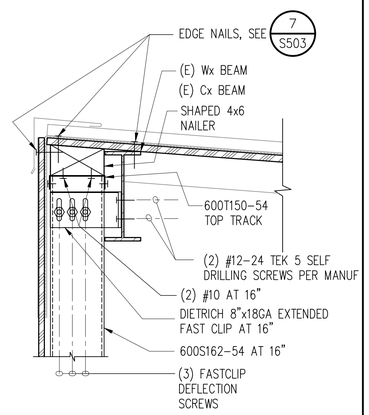

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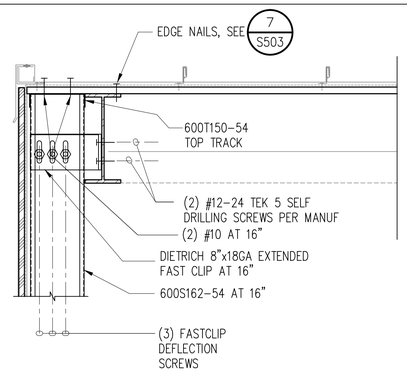

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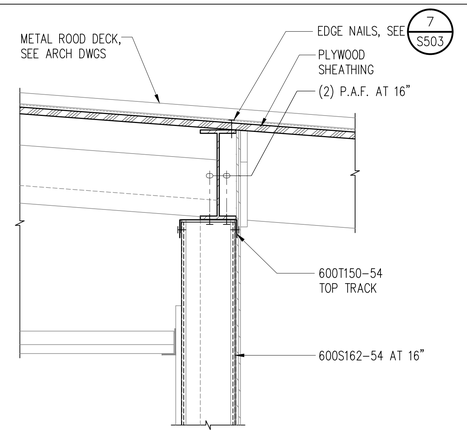
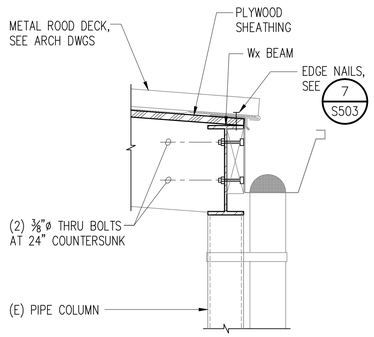
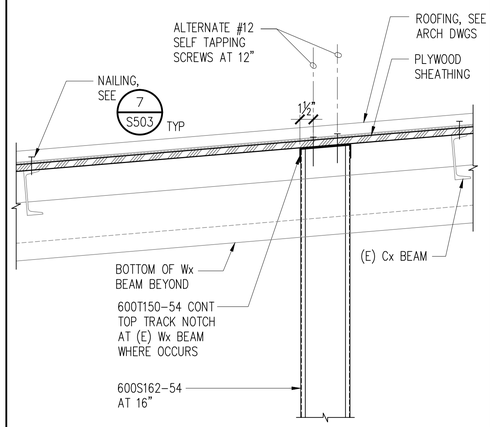
SCALE: 1-1/2"" = 1'-0"



4 S503 **SECTION**
SCALE: 1-1/2"" = 1'-0"



5 S503 **SECTION**
SCALE: 1-1/2"" = 1'-0"



6 S503 **SECTION**
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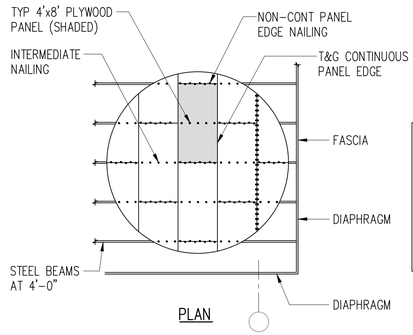


PLAN

NOTES:

1. SCREWS AT STRUCTURAL STEEL SHALL BE #10 FLAT HEAD SELF TAPPING.
2. SCREWS AT WOOD AND LIGHT GAGE STEEL SHALL BE #10 SCREWS.

NAILING SCHEDULE

	PLYWOOD SHEATHING THICKNESS	DIAPHRAGM BOUNDARY SCREWS	CONTINUOUS PANEL EDGES	NON-CONT PANEL EDGES	INTERMEDIATE SCREWS	REMARKS
SCHEDULE	¾" T&G	8d AT 6"	N/A	SCREWS AT 6"	SCREWS AT 12"	SIMPSON PSCL AT 24" ALONG CONT EDGE IN LIEU OF T&G

7 S503 **PLYWOOD ROOF SHEATHING NAILING SCHEDULE**
NOT TO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

BRIAN C MURDOCK
LICENSED PROFESSIONAL ENGINEER
No. 11208-S
HAWAII, U.S.A.

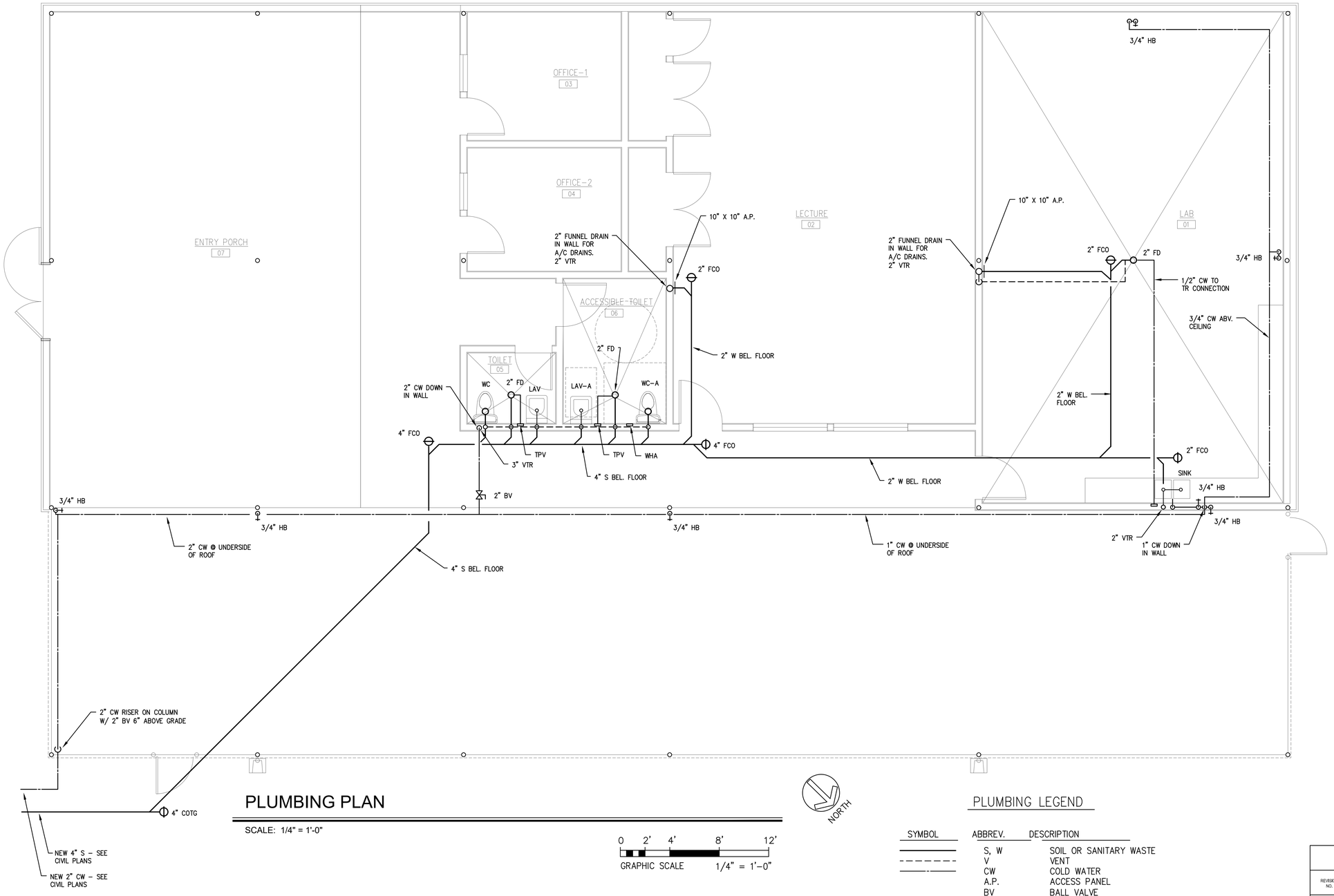
EXPIRATION DATE OF THE LICENSE 4/30/2020
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

SECTIONS AND DETAILS

KAI HAWAII		PROJECT NO.	DRAWING NO.
DESIGN BY: ZS	CHECKED BY: BM	CCR-17-6251B	S503
DRAWN BY: CAD	APPROVED BY: BM	DATE	SHEET
SCALE: AS SHOWN		OCT 2019	29 OF 50 SHTS.



PLUMBING PLAN

SCALE: 1/4" = 1'-0"

GRAPHIC SCALE 0 2' 4' 8' 12' — 1/4" = 1'-0"

NORTH

PLUMBING LEGEND

SYMBOL	ABBREV.	DESCRIPTION
———	S, W	SOIL OR SANITARY WASTE
- - - - - - -	V	VENT
———	CW	COLD WATER
	A.P.	ACCESS PANEL
	BV	BALL VALVE
	CO	CLEANOUT
	COTG	CLEANOUT TO GRADE
	(E)	EXISTING
	FCO	FLOOR CLEANOUT
	FD	FLOOR DRAIN
	HB	HOSE BIBB
	LAV	LAVATORY
	PRV	PRESSURE REDUCING VALVE
	SK	SINK
	TP	TRAP PRIMER
	TPV	TRAP PRIMER VALVE
	VTR	VENT THRU ROOF
	WC	WATER CLOSET
	WHA	WATER HAMMER ARRESTOR

PLUMBING NOTES

1. THESE PLANS ARE DIAGRAMMATIC AND SHOW THE DESIGN INTENT. THESE PLANS ARE NOT TO BE CONSIDERED "SHOP DRAWINGS". THE CONTRACTOR SHALL VERIFY CONDITIONS AT THE PROJECT SITE AND SHALL MAKE ADJUSTMENTS IN THE NEW WORK TO SUIT ACTUAL CONDITIONS, AS REQUIRED TO ACCOMPLISH THE DESIGN INTENT, AT NO ADDITIONAL COST TO THE OWNER. PROVIDE FITTINGS, OFFSETS AND ADJUSTMENTS TO FIT THE WORK INTO THE AVAILABLE SPACES. NOTIFY AND COORDINATE WITH THE ENGINEER OF ANY MAJOR DEVIATIONS FROM THE PLANS DUE TO VARYING OR UNFORESEEN FIELD CONDITIONS.

2. PLUMBING WORK SHALL COMPLY WITH THE 2012 UNIFORM PLUMBING CODE, AS AMENDED BY THE CITY AND COUNTY OF HONOLULU.

3. SANITARY WASTE AND VENT PIPING: PLASTIC ABS TYPE DWV PIPING.

4. WATER PIPING: COPPER TUBING TYPE L FOR ABOVE GROUND AND TYPE K FOR BURIED PIPING, WITH SOLDER JOINT FITTINGS. IN LIEU OF SOLDER JOINTS, UPC APPROVED PRESSED JOINT FITTINGS ARE PERMITTED, INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ALL HOT WATER PIPING SHALL BE INSULATED AS SPECIFIED.

5. PLUMBING FIXTURES: PROVIDE CHROME PLATED QUARTER TURN STOPS AND SUPPLIES RISERS FOR ALL FIXTURES. PROVIDE AIR CHAMBERS IN THE WATER BRANCH PIPING TO EACH FIXTURE, CONSISTING OF FULL SIZED, CAPPED PIPES EXTENDING 12" ABOVE THE FIXTURE DRAIN.

6. INSTALLATION: WASTE AND VENT PIPING SHALL SLOPE NOT LESS THAN 1/4" PER FOOT. ANCHOR PIPING WITH APPROVED CLAMPS OR ADJUSTABLE HANGERS, PER THE PLUMBING CODE. COPPER TUBING SHALL BE WRAPPED WITH PIPE TAPE AT ALL SUPPORTS. ALL NEW FLOOR DRAINS SHALL HAVE TRAP PRIMER CONNECTIONS. PROVIDE MIN. 10"x 10" WALL ACCESS PANELS AT ALL TRAP PRIMER VALVES AND WATER HAMMER ARRESTORS.

7 TEST: TEST THE WASTE AND VENT SYSTEM IN ACCORDANCE WITH THE PLUMBING CODE. PROVIDE HYDROSTATIC PRESSURE TEST ON THE WATER PIPING.

8. CHLORINATION: CHLORINATE NEW WATER PIPING WITH 50 PPM DOSAGE FOR 24 HOURS MIN. FLUSH WITH CLEAN WATER UNTIL RESIDUAL IS LESS THAN 0.2 PPM. PROVIDE CERTIFICATE OF CHLORINATION AFTER COMPLETION.

0. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

10. FIXTURES DESIGNATED "ADA COMPLIANT" OR "ACCESSIBLE" SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN, INCLUDING THE 2004 ADAAG REQUIREMENTS FOUND IN CHAPTER 6 – PLUMBING ELEMENTS AND FACILITIES. VERIFY MOUNTING HEIGHTS BEFORE INSTALLATION. PROVIDE PROTECTIVE PADDING ON EXPOSED PIPING BELOW ACCESSIBLE SINKS NOT ENCLOSED BY CABINETS. THE CONTRACTOR IS EXPECTED TO HAVE A COPY OF THE STANDARDS AND IS EXPECTED TO BE KNOWLEDGEABLE WITH ITS REQUIREMENTS.

11. ALL HOSE BIBBS SHALL HAVE NON-REMOVABLE VACUUM BREAKERS.

REVISION NO.	SYM.	DESCRIPTION	SHT.__ OF__	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CHARLES T. LUNSON LICENSED PROFESSIONAL ENGINEER No. 4573-M HAWAII, U.S.A.

LICENSE EXPIRES 04/30/20

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

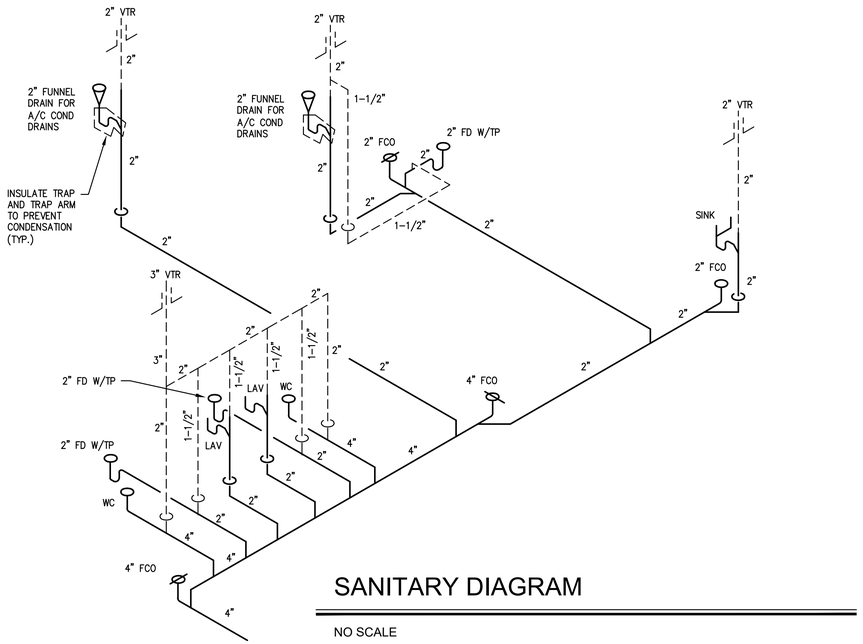
UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE

5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

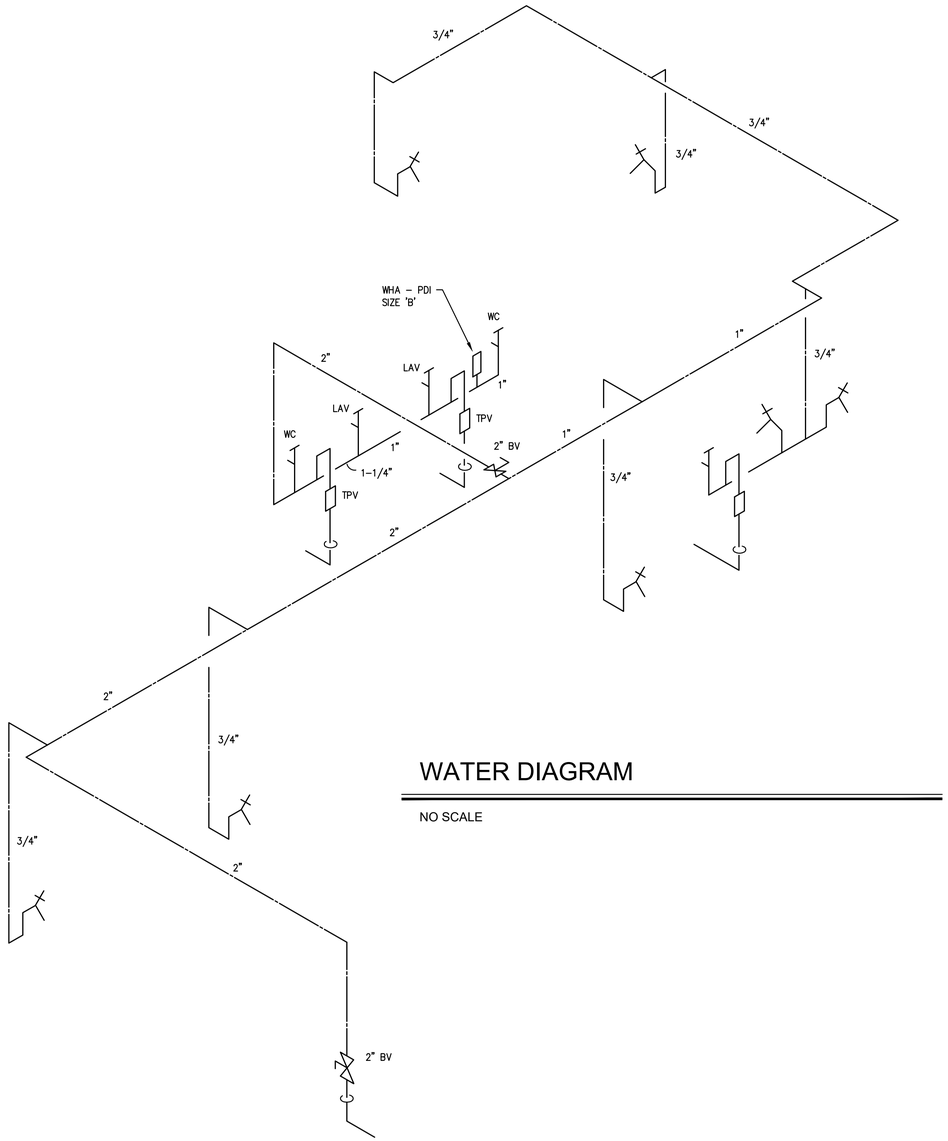
PLUMBING PLAN, NOTES, LEGEND

CHARLES T. LUNSON & ASSOC., INC.		PROJECT NO.	DRAWING NO.
DESIGN BY: CL	CHECKED BY: CL	CCR-17-6251B	P101
DRAWN BY: CL	APPROVED BY: CL	DATE	SHEET
SCALE: AS NOTED		SEPT 2019	30 OF 50 SHTS.



SANITARY DIAGRAM

NO SCALE



WATER DIAGRAM

NO SCALE

PLUMBING FIXTURE SCHEDULE		
MARK	DESCRIPTION	REMARKS
WC–A	WATER CLOSET, FLOOR MOUNTED, FLUSH VALVE, OPEN FRONT SEAT, NO COVER	ADA COMPLIANT ACCESSIBLE FIXTURE
WC	WATER CLOSET, FLOOR MOUNTED, FLUSH VALVE, OPEN FRONT SEAT, NO COVER	
LAV–A	WALL HUNG LAV, COLD WATER ONLY	ADA COMPLIANT ACCESSIBLE FIXTURE
LAV	WALL HUNG LAV, COLD WATER ONLY	
SINK	TWO COMPARTMENT STAINLESS STEEL COUNTER SINK, GOOSENECK FAUCET, COLD WATER ONLY	

NOTES:

1. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. SEE ARCHITECTURAL PLANS FOR MOUNTING HEIGHTS.
3. FIXTURES DESIGNATED AS ACCESSIBLE SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE ADA ACCESSIBILITY GUIDELINES. SEE PLUMBING NOTES.

BOARD OF WATER SUPPLY FLOW DATA

PREMISE ID: 4080277458
METER NO. 05180253

A. PROPOSED DOMESTIC	15.6 FU	32 GPM	100 GPD
B. PROPOSED IRRIGATION	0.0 FU	00 GPM	0 GPD
C. TOTAL PROPOSED	15.6 FU	32 GPM	100 GPD
D. DEMOLITION	0.0 FU	0 GPM	0 GPD
E. NET CHANGE	15.6 FU	32 GPM	100 GPD
F. EXISTING TO REMAIN	459.1 FU	135 GPM	26,050 GPD
G. NEW GRAND TOTAL	474.7 FU	140 GPM	26,150 GPD

PROPOSED: 2 WC (FLUSH VALVE) x 3.4 FU = 6.8 FU
2 LAV x 0.6 FU = 1.2 FU
1 SINK x 1.6 FU = 1.6 FU
7 HB x 1.0 FU – 6 FU
TOTAL = 15.6 FU

REMOVAL: NONE

THERE IS NO AIR CONDITIONING WORK IN THIS PROJECT THAT AFFECTS THE WATER DEMAND.

THERE IS NO FIRE SPRINKLER SYSTEM ON THIS METER.

IRRIGATION IS EXISTING AND IS ESTIMATED AT 50 GPM MAX. AND IS DONE OFF–PEAK HOURS ONLY.

REVISION NO.	SYM.	DESCRIPTION	SHT.__ OF__	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

CHARLES T. LUNSON
LICENSED PROFESSIONAL ENGINEER
No. 4573–M
HAWAII, U.S.A.

LICENSE EXPIRES 04/30/20

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

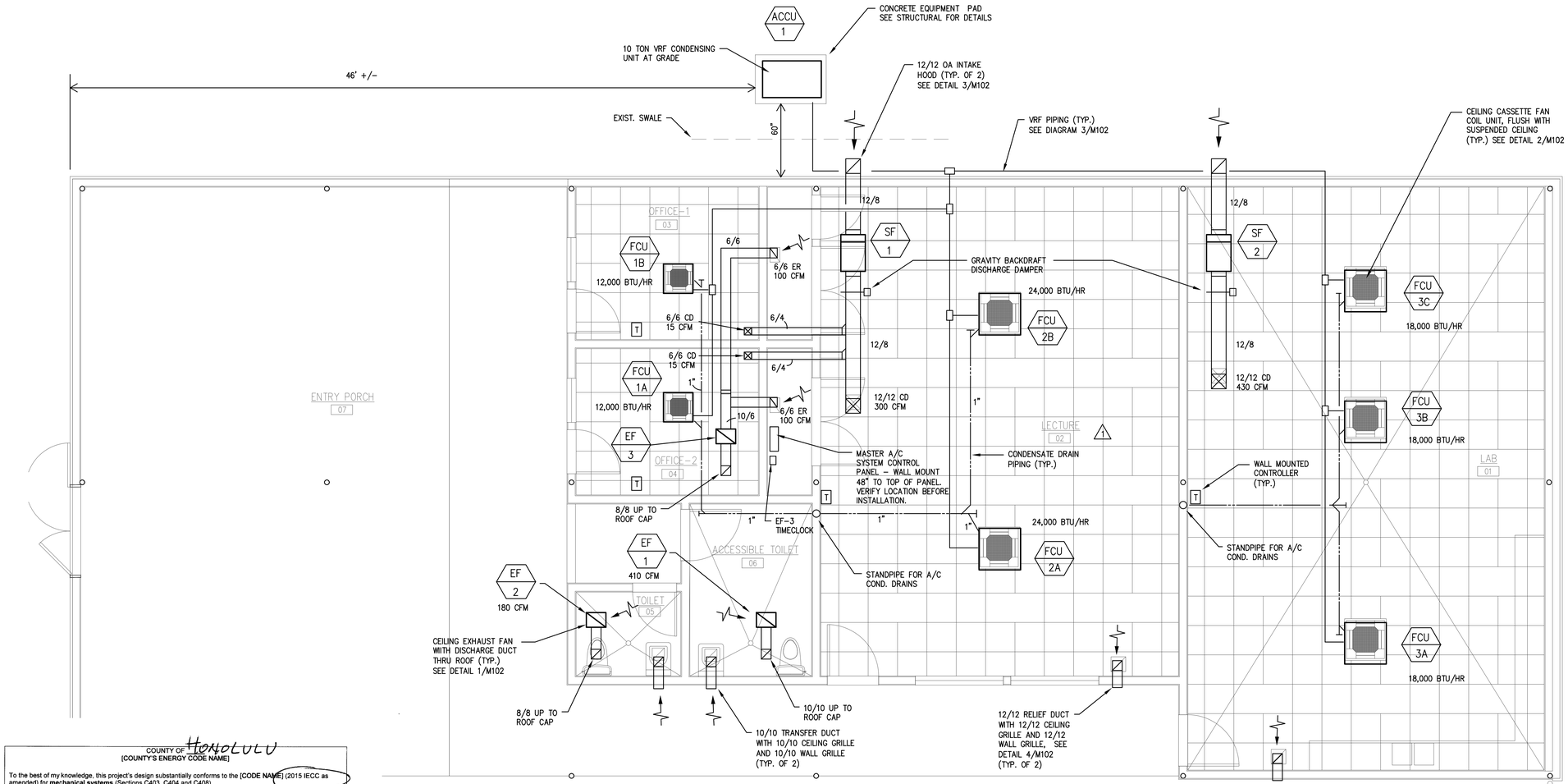
UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

PLUMBING DIAGRAMS, FIXTURE SCHEDULE, BWS FLOW DATA

CHARLES T. LUNSON & ASSOC., INC.

DESIGN BY:	CHECKED BY:	PROJECT NO.	DRAWING NO.
CL	CL	CCR–17–6251B	P102
DRAWN BY: CL	APPROVED BY: CL	DATE: SEPT 2019	SHEET 31 OF 50 SHTS.
SCALE: AS NOTED			



NOTE: RUN CONDENSATE DRAINS FROM EACH FAN COIL UNIT TO THE NEAREST STANDPIPE. INSULATE CONDENSATE DRAIN PIPING AS SPECIFIED. DO NOT RUN DRAIN LINES ABOVE ELEC ROOM OR COMM ROOM.

OUTSIDE AIR CALCULATION:

OFFICE 1: (170 SF x .06 CFM/SF) + (1 PERSON x 5 CFM/PERSON) = 15 CFM

OFFICE 2: SAME

LECTURE: (850 SF x 0.12 CFM/SF) + (20 PEOPLE x 10 CFM/PERSON) = 300 CFM

LAB: (1000 SF x 0.18 CFM/SF) + (25 PEOPLE x 10 CFM/PERSON) = 430 CFM

TOTAL OUTSIDE AIR = 15 + 15 + 300 + 430 = 760 CFM

MECHANICAL PLAN

SCALE: 1/4" = 1'-0"

GRAPHIC SCALE 0 2' 4' 8' 12' — 1/4" = 1'-0"

NORTH

COUNTY OF HONOLULU
[COUNTY'S ENERGY CODE NAME]

To the best of my knowledge, this project's design substantially conforms to the [CODE NAME] (2015 IECC as amended) for **mechanical systems** (Sections C403, C404 and C408).

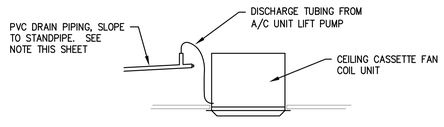
COMPLIANCE METHOD

- ☑ 2015 IECC as amended. Mandatory & Prescriptive
- ☐ 2015 IECC as amended. Mandatory & Total Building Performance
- ☐ ASHRAE Standard 90.1-2013. Mandatory & Prescriptive
- ☐ ASHRAE Standard 90.1-2013. Mandatory & Energy Cost Budget

INFORMATION IN CONSTRUCTION DOCUMENTS	Yes	N/A
HVAC Systems		
Equipment capacity and efficiency. C403.2.3	☑	☐
Thermostatic controls C403.2.4	☑	☐
Guest room door switches. C403.2.4.2.4	☐	☑
Ventilation rate C403.2.6	☑	☐
Demand control ventilation controls C403.2.6.1	☐	☑
Enclosed parking garage ventilation control. C403.2.6.2	☐	☑
Energy recovery ventilation system. C403.2.7	☐	☑
Kitchen exhaust systems. C403.2.8	☐	☑
Duct and plenum insulation thickness/R-value. C403.2.9	☐	☑
Duct and plenum sealing requirements. C403.2.9	☐	☑
Pipe insulation thickness/R-value. C403.2.10	☑	☐
Fan motor horsepower. C403.2.12	☑	☐
Fan efficiency. C403.2.12	☑	☐
Fan motor efficiency. C405.8	☑	☐
Pump motor efficiency. C405.8	☐	☑
Variable-flow fan control. C403.4.1	☐	☑
Static pressure sensor location. C403.4.1.2	☐	☑
Static pressure reset control. C403.4.1.3	☐	☑
Chilled water variable flow control. C403.4.2.4	☐	☑
Chiller isolation. C403.4.2.6	☐	☑
Cooling tower fan control. C403.4.3	☐	☑
Terminal unit minimum and maximum airflow. C403.4.4	☐	☑
Commissioning requirements. C408.2	☐	☑
Refrigeration		
Refrigeration equipment efficiency. C403.2.14	☐	☑
Walk-in coolers and freezers. C403.2.15, C403.2.16 & C403.5	☐	☑
Refrigerated warehouses. C403.2.15 & C403.5	☐	☑
Refrigerated display cases. C403.2.17 & C403.5	☐	☑
Service Water Heating		
Heat recovery for service water heating. C403.4.5	☐	☑
Equipment capacity and efficiency. C404.2	☐	☑
Pipe insulation. C404.4	☐	☑
Hot water pipe length/volume. C404.5	☐	☑
Hot water circulation controls. C404.6	☐	☑
Heated pool and spa covers. C404.9.3	☐	☑
Commissioning requirements. C408.2	☐	☑

NOTES

SIGNATURE:
DATE: 9/19/2019
NAME: Charles T. Lunson, Mech. Engineer
TITLE:
LICENSE NO.: 4573-M



CONDENSATE DRAIN DETAIL

NO SCALE

MECHANICAL LEGEND

SYMBOL	ABBREV.	DESCRIPTION
	ACCU	AIR COOLED CONDENSING UNIT
	CFM	CUBIC FEET PER MINUTE
	CLR	CLEAR
	EF	EXHAUST FAN
	FCU	FAN COIL UNIT
	MIN	MINIMUM
	OA	OUTSIDE AIR
	REFRIG	REFRIGERANT
	SF	SUPPLY FAN
	TYP	TYPICAL
	VD	VOLUME DAMPER
	VRF	VARIABLE REFRIGERANT FLOW

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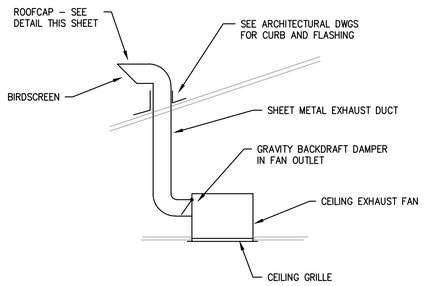
Agriculture Facility and Greenhouse Renovation

MECHANICAL PLAN, LEGEND, EQUIPMENT SCHEDULE

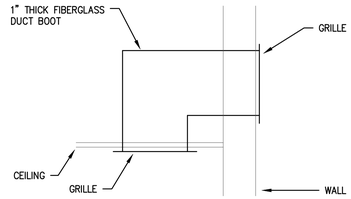
CHARLES T. LUNSON & ASSOC., INC.		PROJECT NO.	DRAWING NO.
DESIGN BY: CL	CHECKED BY: CL	CCR-17-6251B	M101
DRAWN BY: CL	APPROVED BY: CL	DATE: SEPT 2019	SHEET 32 OF 50 SHTS.
SCALE: AS NOTED			



CEILING EXHAUST FAN DETAIL

1 / M102

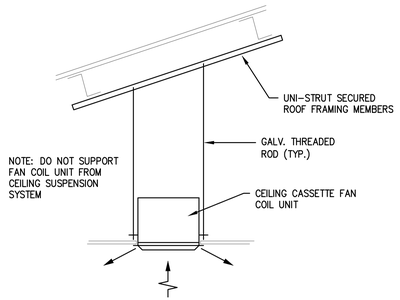
NO SCALE



TRANSFER DUCT DETAIL

4 / M102

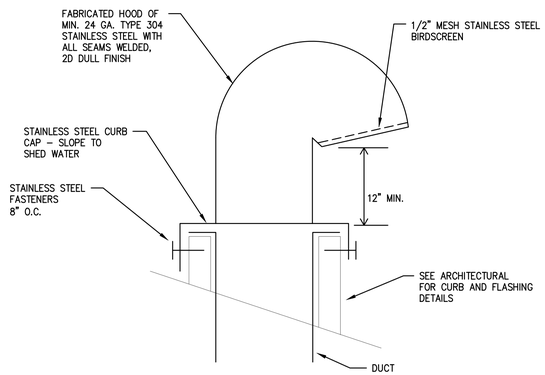
NO SCALE



CEILING FAN COIL UNIT DETAIL

2 / M102

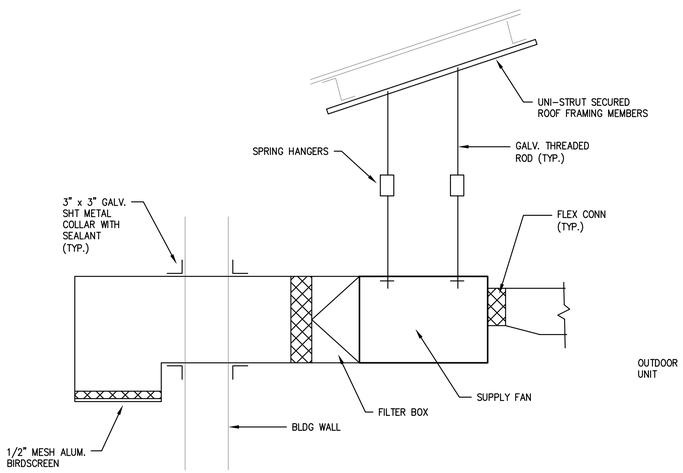
NO SCALE



ROOF CAP DETAIL

5 / M102

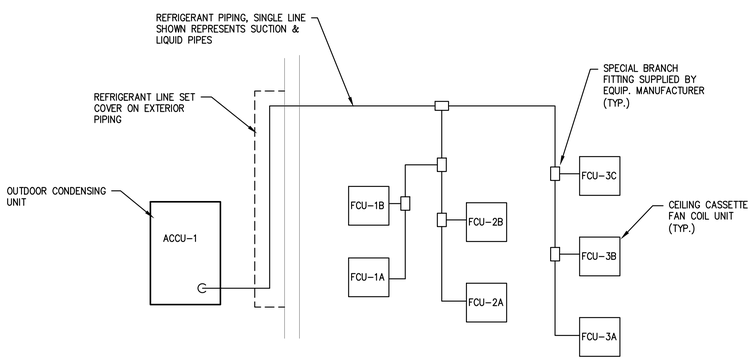
NO SCALE



SUPPLY FAN DETAIL

3 / M102

NO SCALE



VRF REFRIGERANT PIPING DIAGRAM

6 / M102

NO SCALE

EQUIPMENT SCHEDULE

ACCU 1 — AIR COOLED CONDENSING UNIT, R–410A, VERTICAL AIRFLOW
MINIMUM CAPACITY 120,000 BTU/HR, 208 VOLTS/3 PHASE, 41 MIN. CKT. AMPS
MIN. EER = 12.3 AT STANDARD AHRI RATING CONDITIONS
DESIGN UNIT: MITSUBISHI PUHY–P120

FCU 1A — CEILING CASSETTE DUCTLESS FAN COIL UNIT, NOMINAL CAPACITY
12,000 BTU/HR, 300 CFM SUPPLY AIR AT HIGH SPEED
208 VOLTS/1 PHASE, 0.3 MIN. CKT. AMPS
DESIGN UNIT: MITSUBISHI PLFY–P12
1B SAME

FCU 2A — CEILING CASSETTE DUCTLESS FAN COIL UNIT, NOMINAL CAPACITY
24,000 BTU/HR, 700 CFM SUPPLY AIR AT HIGH SPEED
208 VOLTS/1 PHASE, 0.5 MIN. CKT. AMPS
DESIGN UNIT: MITSUBISHI PLFY–P24
2B SAME

FCU 3A — CEILING CASSETTE DUCTLESS FAN COIL UNIT, NOMINAL CAPACITY
18,000 BTU/HR, 600 CFM SUPPLY AIR AT HIGH SPEED
208 VOLTS/1 PHASE, 0.4 MIN. CKT. AMPS
DESIGN UNIT: MITSUBISHI PLFY–P18
3B, 3C SAME

AIR CONDITIONING EQUIPMENT SHALL BE BY THE SAME MANUFACTURER, RATED TOGETHER AS PART OF A VARIABLE REFRIGERANT FLOW SYSTEM. THE MANUFACTURER SHALL PROVIDE ALL ACCESSORIES AND APPURTENANCES REQUIRED FOR A COMPLETE AND FUNCTIONAL SYSTEM.

EF 1 — CEILING EXHAUST FAN WITH INTEGRAL CEILING GRILLE, GRAVITY BACKDRAFT DAMPER ON DISCHARGE OPENING, 180 CFM AT 0.25" S.P., 1400 RPM, 54 WATTS, 1.8 SONES, 115 VOLTS,
DESIGN UNIT: GREENHECK MODEL SP–A190

EF 2 — CEILING EXHAUST FAN WITH INTEGRAL CEILING GRILLE, GRAVITY BACKDRAFT DAMPER ON DISCHARGE OPENING, 410 CFM AT 0.25" S.P., 1070 RPM, 224 WATTS, 4.5 SONES, 115 VOLTS,
DESIGN UNIT: GREENHECK MODEL SP–A510

EF 3 — IN–LINE CABINET FAN, 200 CFM AT 0.25" S.P.
900 RPM, 58 WATTS, 0.9 SONES, 115 VOLTS
DESIGN UNIT: GREENHECK MODEL CSP–200

SF 1 — IN–LINE CABINET FAN WITH ANGULAR FILTER RACK, BELT DRIVE
330 CFM AT 0.5" S.P., 1450 RPM, .07 BHP, 1/4 HP, 115 VOLTS
DESIGN UNIT: GREENHECK BCF–106

SF 2 — IN–LINE CABINET FAN WITH ANGULAR FILTER RACK, BELT DRIVE
430 CFM AT 0.5" S.P., 1600 RPM, .10 BHP, 1/4 HP, 115 VOLTS
DESIGN UNIT: GREENHECK BCF–106

DESIGN UNITS FOR ALL EQUIPMENT ARE SHOWN TO INDICATE THE TYPE AND STYLE OF EQUIPMENT REQUIRED, AND IS NOT INTENDED TO RESTRICT OTHER MANUFACTURER'S FROM PROPOSING EQUIPMENT SIMILAR IN DESIGN AND PERFORMANCE. THE DESIGN UNIT AND ACCEPTABLE ALTERNATE MANUFACTURERS SHALL BE SUBJECT TO THE SPECIFICATION REQUIREMENTS AND TO THE APPROVAL OF THE CONTRACTING OFFICER THROUGH SUBMITTAL REVIEW.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN CHANGES TO THE MECHANICAL, ELECTRICAL AND SUPPORT SYSTEMS REQUIRED TO ACCOMMODATE ALTERNATE MAKES AND MODELS OF EQUIPMENT.

REFRIGERANT PIPING NOTES:

1. THESE DIAGRAMS ARE PROVIDED TO SHOW THE GENERAL ARRANGEMENT OF EACH SYSTEM AND ARE NOT INTENDED AS DETAILED PIPING DIAGRAMS. INSTALLATION OF PIPING SHALL BE IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S INSTRUCTIONS AND CONTRACTOR PREPARED SHOP DRAWINGS.

2. FIELD RUN PIPING WHERE SPACE PERMITS. ALL PIPING SHALL BE CONCEALED ABOVE CEILINGS AND SOFFITS.

3. PIPE SIZES SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER. PROVIDE PIPE SIZING RECOMMENDATIONS WITH THE EQUIPMENT SUBMITTALS.

4. THE CONTRACTOR SHALL PREPARE DETAILED PIPING PLANS AND DIAGRAMS SHOWING THE PIPING SYSTEM ARRANGEMENTS.

MECHANICAL GENERAL NOTES

1. EXISTING CONDITIONS SHOWN ARE BASED ON RECORD DRAWINGS AND VISUAL OBSERVATIONS. CONCEALED CONDITIONS BELOW GRADE AND INSIDE WALLS HAVE NOT BEEN VERIFIED. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AT THE JOBSITE. NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THESE PLANS ARE NOT TO BE CONSIDERED "AS–BUILT" DRAWINGS, NOR ARE THEY TO BE CONSIDERED "SHOP DRAWINGS". THESE PLANS SHOW THE DESIGN INTENT. THE CONTRACTOR SHALL PROVIDE ADJUSTMENTS IN THE NEW WORK AS REQUIRED TO ACCOMPLISH THE DESIGN INTENT, AT NO ADDITIONAL COST TO THE STATE.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT FOR REPAIRS TO ANY DAMAGED UTILITIES AND BUILDING ELEMENTS. RESTORE EXISTING LANDSCAPING DAMAGED BY THE CONTRACTOR'S ACTIVITIES TO ITS ORIGINAL CONDITION.

3. PAINTING: PAINT ALL NEW EXPOSED SURFACES INSIDE AND OUTSIDE THE BUILDING. REPAIR AND TOUCH–UP PAINT ALL BUILDING SURFACES AFFECTED BY THE WORK. SELECT PAINT COLORS TO MATCH ADJACENT BUILDING SURFACES.

4. ALL CONTRACTOR FURNISHED SUPPORTS AND ACCESSORIES SHALL BE HOT DIPPED GALVANIZED.

5. ALL WORK SHALL COMPLY WITH APPLICABLE BUILDING CODES OF THE CITY AND COUNTY OF HONOLULU.

6. THE CONTRACTOR SHALL VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CONTRACTING OFFICER OF ANY DISCREPANCY OR CONFLICTS FOUND IN THE FIELD PRIOR TO OR DURING THE COURSE OF CONSTRUCTION AND SHALL NOT PROCEED WITH CONSTRUCTION UNTIL THE CONTRACTING OFFICER RESOLVES THE SAID DISCREPANCY OR CONFLICT.

7. THIS PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN, INCLUDING THE 2004 ADAAG REQUIREMENTS FOUND IN CHAPTER 3 – BUILDING BLOCKS, PARAGRAPH 308 REACH RANGES. WALL MOUNTED SWITCHES AND CONTROLS SHALL BE MOUNTED WITH THE TOP OF THE DEVICE NOT MORE THAN 48" ABOVE THE FINISHED FLOOR, AND SHALL BE WITH UNOBSTRUCTED FORWARD AND SIDE APPROACH, AS DEFINED IN THE STANDARDS.

8. MOUNT THE NEW OUTDOOR CONDENSING UNITS ON NEW CONCRETE EQUIPMENT PAD OR PRE–FABRICATED FIBERGLASS EQUIPMENT PADS DESIGNED FOR THE INTENDED APPLICATION.

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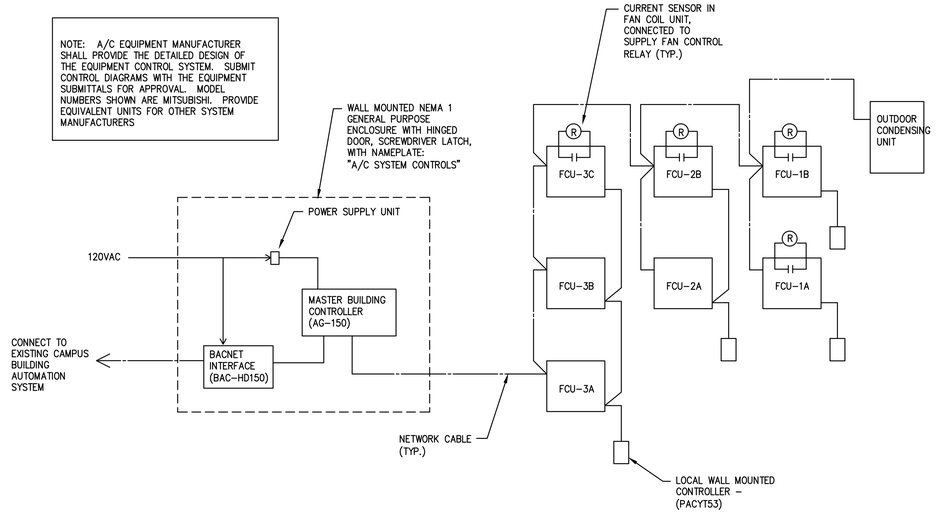
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE

5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

MECHANICAL DETAILS, DIAGRAMS, GENERAL NOTES, EQUIPMENT SCHEDULE

CHARLES T. LUNSON & ASSOC., INC.		PROJECT NO.	DRAWING NO.
DESIGN BY: CL	CHECKED BY: CL	CCR–17–6251B	M102
DRAWN BY: CL	APPROVED BY: CL	DATE: SEPT 2019	SHEET: 33 OF 50 SHTS.
SCALE: AS NOTED			



1 M103 AIR CONDITIONING SYSTEM CONTROL DIAGRAM

NO SCALE

CONTROL SYSTEM NOTES:

1. THE AIR CONDITIONING SYSTEM IS A HYBRID OF TWO SEPARATE SYSTEMS. PRIMARY COOLING IN EACH CLASSROOM IS PROVIDED BY THE VARIABLE REFRIGERANT FLOW (VRF) SYSTEM. OUTSIDE AIR IS PROVIDED BY SEPARATE, INTERLOCKED OUTSIDE AIR FANS.

2. THE OUTSIDE AIR SUPPLY FANS SHALL BE INTERLOCKED WITH THE FAN COIL UNITS IN THE RESPECTIVE ROOMS. CURRENT SENSORS IN DESIGNATED FAN COIL UNITS SHALL ENERGIZE CONTROL RELAYS TO CAUSE THE SUPPLY FAN TO RUN WHENEVER THE FAN COIL UNIT IS RUNNING.

3. CONTROL OF THE VRF SYSTEMS SHALL BE THROUGH THE EQUIPMENT MANUFACTURER'S CONTROL COMPONENTS. THERE SHALL BE A MASTER VRF CONTROL PANEL WHERE SHOWN. THE MASTER CONTROL PANEL SHALL BE CONNECTED TO THE EXISTING CAMPUS BUILDING AUTOMATION SYSTEM (BAS) UNDER THIS CONTRACT. SEE SPECIFICATIONS.

4. DETAILED DESIGN OF THE VRF CONTROL SYSTEM SHALL BE THE RESPONSIBILITY OF THE A/C EQUIPMENT MANUFACTURER. DETAILED DESIGN OF THE CONNECTION TO THE CAMPUS BAS SHALL BE THE RESPONSIBILITY OF THE UNIVERSITY'S BAS SYSTEM VENDOR UNDER THIS CONTRACT.

SEQUENCE OF OPERATION:

1. THE A/C SYSTEM START/STOP TIMES SHALL BE PROGRAMMED THRU THE MASTER CONTROL PANEL. THE COOLING SYSTEM IN EACH ROOM SHALL BE CAPABLE OF INDEPENDENT START/STOP TIMES, WITH OVERRIDE CAPABILITIES AT EACH ROOM CONTROLLER. EACH ROOM SHALL BE CAPABLE OF INDEPENDENT TEMPERATURE SET POINTS.

2. A SINGLE ROOM CONTROLLER SHALL CONTROL THE THREE FAN COIL UNITS IN THE LAB (SYSTEM 3).

3. A SINGLE ROOM CONTROLLER SHALL CONTROL THE TWO FAN COIL UNITS IN THE LECTURE ROOM (SYSTEM 2).

4. SEPARATE ROOM CONTROLLERS SHALL CONTROL THE FAN COIL UNIT IN EACH OFFICE (SYSTEMS 1A AND 1B).

5. THE SUPPLY AIR FAN IN EACH FAN COIL UNIT SHALL RUN CONTINUOUSLY WHENEVER THE SYSTEM IS ON. FAN CYCLING IS NOT PERMITTED.

6. THE OUTDOOR AIR SUPPLY FAN FOR EACH ROOM SHALL RUN CONTINUOUSLY WHENEVER THE SYSTEM IN THAT ROOM IS ON.

ZONE	INPUT POINTS	OUTPUT POINTS
LAB (ROOM 01)	ROOM TEMPERATURE ROOM HUMIDITY FCU STATUS	A/C START/STOP SETPOINT ADJUSTMENT
LECTURE (ROOM 02)	ROOM TEMPERATURE ROOM HUMIDITY FCU STATUS	A/C START/STOP SETPOINT ADJUSTMENT
OFFICE 1 (ROOM 03)	ROOM TEMPERATURE ROOM HUMIDITY FCU STATUS	A/C START/STOP SETPOINT ADJUSTMENT
OFFICE 1 (ROOM 04)	ROOM TEMPERATURE ROOM HUMIDITY FCU STATUS	A/C START/STOP SETPOINT ADJUSTMENT

2 M103 BUILDING AUTOMATION SYSTEM POINT LIST

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5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

MECHANICAL CONTROL DIAGRAMS

CHARLES T. LUNSON & ASSOC., INC.

DESIGN BY:	CHECKED BY:	PROJECT NO.	DRAWING NO.
CL	CL	CCR-17-6251B	M103
DRAWN BY: CL	APPROVED BY: CL	DATE: SEPT 2019	SHEET 34 OF 50 SHTS.
SCALE: AS NOTED			

ELECTRICAL SYMBOL LIST

MOUNTING HEIGHT FROM FLOOR TO		(SPECIAL MOUNTING HEIGHTS INDICATED ON PLAN)		
		SYMBOL		DESCRIPTION
TOP	℄	EXISTING	NEW	
			(1)	LED LUMINAIRE, CEILING MOUNTED (NUMERAL IN CIRCLE CORRESPONDS TO LUMINAIRE SCHEDULE)
			(1)	LED LUMINAIRE, CEILING MOUNTED WITH EMERGENCY BATTERY PACK (NUMERAL IN CIRCLE CORRESPONDS TO LUMINAIRE SCHEDULE)
			(1)	LED LUMINAIRE, WALL MOUNTED (NUMERAL IN CIRCLE CORRESPONDS TO LUMINAIRE SCHEDULE)
				LUMINAIRE, WALL MOUNTED
	7'–6"			EMERGENCY LUMINAIRE, WALL MOUNTED
	8'–0"			EXIT SIGN, WALL MOUNTED
				EXIT SIGN, STEM MOUNTED
	46"		^{a}	LIGHT SWITCH, FLUSH MOUNTED (LETTER INDICATES LUMINAIRES CONTROLLED)
	46"		$_a$	OCCUPANCY SENSOR LIGHT SWITCH (LETTER INDICATES LUMINAIRES CONTROLLED)
	46"		S $_a$	LIGHTING CONTROL SYSTEM SWITCH (LETTER INDICATES LUMINAIRES CONTROLLED)
			$_2$	2 POLE SWITCH, 1 HP
84"				OCCUPANCY SENSOR, WALL MOUNTED
				OCCUPANCY SENSOR, CEILING MOUNTED
			P	LOW VOLTAGE LIGHTING CONTROL SYSTEM POWER PACK/AREA CONTROLLER
	18"			RECEPTACLE, DUPLEX, GROUNDING TYPE, 125V, NEMA 5–20R
	18"			RECEPTACLE, DUPLEX, GFCI–TYPE, 125V, NEMA 5–20R
		e		CONDUIT CONCEALED IN CEILING OR WALLS, HASHMARKS INDICATE QUANTITY OF CURRENT CARRYING WIRES WITHIN, NO HASHMARKS INDICATE 2 CURRENT CARRYING WIRES WITHIN, PROVIDE GREEN EQUIPMENT GROUNDING CONDUCTOR IN ACCORDANCE WITH GENERAL ELECTRICAL NOTE 3 ON E002
		e		SURFACE MOUNTED RACEWAY, PROVIDE STRAP AT INTERVAL NOT EXCEEDING 8'–0", HASHMARKS INDICATE QUANTITY OF CURRENT CARRYING WIRES WITHIN, NO HASHMARKS INDICATE 2 CURRENT CARRYING WIRES WITHIN, PROVIDE GREEN EQUIPMENT GROUNDING CONDUCTOR IN ACCORDANCE WITH GENERAL ELECTRICAL NOTE 3 ON E002
		e	A–1,3	HOMERUN ARROW TO PANELBOARD. LETTER INDICATES PANELBOARD, NUMBERS INDICATES CIRCUITS, HASHMARKS INDICATE QUANTITY OF CURRENT CARRYING WIRES WITHIN, NO HASHMARKS INDICATE 2 CURRENT CARRYING WIRES WITHIN, PROVIDE GREEN EQUIPMENT GROUNDING CONDUCTOR IN ACCORDANCE WITH GENERAL ELECTRICAL NOTE 3 ON E002
		e		UNDERGROUND DUCTLINE, SEE TYPICAL DUCT SECTION, SHEET E601
		J	J	JUNCTION BOX, CEILING MOUNTED
		J	J	JUNCTION BOX, WALL MOUNTED
		J	J	JUNCTION BOX, LARGE, CEILING MOUNTED
		J	J	JUNCTION BOX, LARGE, WALL MOUNTED
		T		TRANSFORMER, PAD MOUNTED
5'–0"				DISCONNECT SWITCH
6'–0"				PANELBOARD
				EQUIPMENT TERMINATION WITH FLEXIBLE CONDUIT WHIP
	46"		CR	CARD READER
			DS	ELECTRIC DOOR STRIKE CONNECTION
			D	DOOR STATUS CONTACT
	18"			TELECOMMUNICATIONS OUTLET, VERTICALLY ORIENTED, FLUSH WALL MOUNTED, 4 11/16" x 2 1/8" DEEP OUTLET BOX WITH DOUBLE–GANG REDUCER AND DOUBLE GANG COVER PLATE
	82"	F	F	FIRE ALARM HORN/VISUAL NOTIFICATION APPLIANCE, 75 CANDELA STROBE
	82"		F	FIRE ALARM HORN/VISUAL NOTIFICATION APPLIANCE, 15 CANDELA STROBE
		F		FIRE ALARM VISUAL NOTIFICATION APPLIANCE
		S		SMOKE DETECTOR, CEILING MOUNTED
	46"	F	F	FIRE ALARM MANUAL PULL STATION
			X	DENOTES DEMOLITION/REMOVAL
			+42"	DENOTES 42" ABOVE FINISHED FLOOR OR GRADE
			ATS	AUTOMATIC TRANSFER SWITCH
			FA	FIRE ALARM
			FO	FIBER OPTIC
			GND	GROUND
			KVA	KILOVOLT–AMPERE
			KW	KILOWATT
			WP	WEATHERPROOF
			1	NOTE INDICATOR
			1 / E002	DETAIL INDICATOR: TOP HALF DENOTES DETAIL NUMBER, BOTTOM HALF DENOTES SHEET NUMBER

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	LAMPS
1	LED, RECESSED, 2' x 4', 0.125" PATTERN 12 ACRYLIC LENS, WHITE FLUSH ALUMINUM DOOR FRAME, TRIPLE GASKETING BETWEEN DOOR, HOUSING AND CEILING, WET LOCATION, 4700 NOMINAL LUMENS COLUMBIA LIGHTING #LJT24–35MLGFAA12125–EU–G3WL OR APPROVED EQUIVALENT	38W LED 3500K
2	LED, RECESSED, 2' x 4', 0.125" PATTERN 12 ACRYLIC LENS, WHITE FLUSH STEEL DOOR FRAME, 4700 NOMINAL LUMENS, 0–10V DIMMING, 1400 LUMEN EMERGENCY BATTERY PACK WHERE INDICATED COLUMBIA LIGHTING #LJT24–35MLGFS12125–EDU–ELL14 OR APPROVED EQUIVALENT	38W LED 3500K
3	LED, WALL MOUNTED LENSED STRIP, MOUNTED AT +6'–6", STEEL HOUSING, 4 FOOT LONG, WHITE ENAMEL FINISH, PAINTED AFTER FABRICATION, FROSTED PRISMATIC LENS, DAMP LOCATION, 5000 LUMENS COLUMBIA LIGHTING #LCL4–35LM–EU–PAF OR APPROVED EQUIVALENT	42W LED 3500K
4	LED, STEM MOUNTED AT +10'–0", FIBERGLASS HOUSING, ENCLOSED AND GASKETED, RIBBED FROSTED POLYCARBONATE LENS, POLYACETAL LATCHES, IP66 RATED, SINGLE WET HUB, 50 DEGREE F AMBIENT, 5000 LUMENS COLUMBIA LIGHTING #LXEM4–35ML–RFP–EU–SWH OR APPROVED EQUIVALENT	42W LED 3500K
5	LED, RECESSED, 2' x 4', 0.125" PATTERN 12 ACRYLIC LENS, WHITE FLUSH STEEL DOOR FRAME, 4700 NOMINAL LUMENS COLUMBIA LIGHTING #LJT24–35MLGFS12125–EU OR APPROVED EQUIVALENT	38W LED 3500K
	EXIT SIGN, WALL MOUNTED OR STEM MOUNTED WHERE INDICATED, WHITE THERMOPLASTIC HOUSING, RED LETTERING, DAMP LOCATION, 90 MINUTE NICKEL–CADMIUM EMERGENCY BATTERY AND TEST SWITCH EVENLITE #TLX–EM–RU–W OR APPROVED EQUIVALENT	2W LED
	EMERGENCY WALL PACK, UV STABILIZED THERMOPLASTIC HOUSING, LIGHT GRAY FINISH, MAINTENANCE FREE LEAD CALCIIUM BATTERIES, 90 MINUTE EMERGENCY BACKUP, SEALED EXTERNAL MOMENTARY TEST SWITCH AND AC INDICATOR, WET LOCATION EVENLITE #NXLED OR APPROVED EQUIVALENT	2 – 1.875W LED

STATE OF HAWAII
ADMINISTRATIVE RULES CHAPTER 3-181.1,
"STATE ENERGY CONSERVATION CODE"
(IECC 2015, AS AMENDED)

To the best of my knowledge, this project's design substantially conforms to the State Energy Conservation Code for:

- ☐ Building Component Systems
- ☒ Electrical Component Systems
- ☐ Mechanical Component Systems

Signature: _____ Date: 09–06–19

Name: MICHELE N. ADOLPHO

Title: PROJECT ENGINEER

License No: 10017–E

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO LICENSED PROFESSIONAL ENGINEER No. 10017–E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE

5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

ELECTRICAL SYMBOL LIST AND LUMINAIRE SCHEDULE

ECS INC.		PROJECT NO.	DRAWING NO.
DESIGN BY: MA	CHECKED BY: MA	CCR–17–6251B	E001
DRAWN BY: CAD	APPROVED BY: MA	DATE: OCT 2019	SHEET 35 OF 50 SHTS.
SCALE: AS SHOWN			

10/28/19–11:19 Y:\001\001.640 WCC Uluweh\001.640 E001.001.dwg

GENERAL ELECTRICAL NOTES:

1. ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRICAL SAFETY CODE, AND ALL LOCAL RULES AND REGULATIONS.

2. THE CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS AND THE EXTENT OF REMOVAL, RELOCATION, RECONNECTION AND/OR NEW WORK PRIOR TO BIDDING. BID SUBMISSION SHALL BE CONSIDERED AS EVIDENCE THAT THE CONTRACTOR HAS VISITED THE SITE AND RESOLVED ALL DISCREPANCIES AND QUESTIONS AND NO EXTRA PAYMENT WILL BE AUTHORIZED FOR WORK MADE NECESSARY BY THE CONTRACTOR'S FAILURE TO DO SO.

3. ALL CIRCUITS SHALL INCLUDE AN INSULATED GREEN GROUNDING CONDUCTOR, SIZED PER THE NATIONAL ELECTRICAL CODE. THIS CONDUCTOR SHALL BE CARRIED IN ALL RACEWAYS AND SHALL BE ATTACHED TO THE DEVICE OR EQUIPMENT HOUSING USING A SUITABLE GROUNDING LUG.

4. COMMON NEUTRAL CONDUCTORS SHALL NOT BE USED FOR MULTI-WIRE BRANCH CIRCUITS INSTALLED IN A COMMON RACEWAY. PROVIDE DEDICATED CONDUCTORS FOR EACH INDIVIDUAL CIRCUIT. PROVIDE COLOR CODING OF THE DIFFERENT NEUTRAL CONDUCTORS IN ACCORDANCE WITH THE NEC.

5. WORK INCIDENTAL TO THE CONTRACT AND NECESSARY TO COMPLETE THE PROJECT, ALTHOUGH NOT SPECIFICALLY REFERRED TO ON THE CONTRACT DOCUMENTS, SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR.

6. IN PERFORMING ALL WORK, THE CONTRACTOR SHALL EXERCISE DUE CARE AND CAUTION NECESSARY TO AVOID ANY DAMAGE TO AND IMPAIRMENT IN THE USE OF ANY EXISTING UTILITY LINES. ANY DAMAGE INFLICTED ON EXISTING UTILITY LINES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE IMMEDIATELY REPAIRED OR RESTORED AS DIRECTED BY THE UNIVERSITY AT THE CONTRACTOR'S EXPENSE.

7. THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

8. SHOULD PROJECT CONDITIONS REQUIRE REARRANGEMENT OF WORK, THE CONTRACTOR SHALL MARK SUCH CHANGES ON THE AS-BUILT DRAWINGS. IF THESE CHANGES REQUIRE ALTERNATE METHODS TO THOSE SPECIFIED IN THE CONTRACT DRAWINGS, THE CONTRACTOR SHALL SUBMIT DRAWINGS TO REFLECT THE PROPOSED ALTERNATE METHODS TO THE UNIVERSITY. THE CONTRACTOR SHALL NOT PROCEED UNTIL APPROVAL IS OBTAINED. REARRANGEMENT OF WORK FOR THE PURPOSE OF COORDINATION SHALL NOT BE CONSIDERED AN ITEM FOR EXTRA COST.

9. MAINTAIN CONTINUITY OF ALL EXISTING CIRCUITS TO AREAS AND SYSTEMS OUTSIDE OF THE PROJECT LIMITS.

10. MINIMUM TELECOMMUNICATIONS CONDUIT BEND RADIUS SHALL BE PER ANSI/TIA-569-C. NO MORE THAN TWO 90-DEGREE BENDS AND 100 FEET WILL BE ALLOWED BETWEEN ACCESSIBLE PULLING POINTS.

11. ALL TELECOMMUNICATIONS INFRASTRUCTURE SHALL BE INSTALLED IN ACCORDANCE WITH ANSI/TIA/EIA WIRING STANDARDS AND UH-ITS INFRASTRUCTURE DEISGN GUIDELINES.

12. ALL TELECOMMUNICATIONS PATHWAYS (CABLE SUPPORTS, JUNCTION BOXES, AND CONDUIT) SHALL BE INSTALLED IN ACCORDANCE WITH ANSI/TIA-569-C AND ADDENDA.

13. PROVIDE NYLON PULLSTRINGS IN ALL EMPTY CONDUITS UNLESS OTHERWISE INDICATED.

14. CONDUIT BODIES (e.g. LB, LR, etc.) SHALL NOT BE PERMITTED IN THE TELECOMMUNICATIONS RACEWAY SYSTEMS. USE OF FLEXIBLE CONDUIT WILL NOT BE ALLOWED FOR TELECOMMUNICATIONS RACEWAY SYSTEMS.

15. PROVIDE INSULATED BUSHINGS AT ALL TELECOMMUNICATIONS CONDUIT TERMINATIONS AT ALL BOXES, BACKBOARDS, AND CONDUIT STUBS.

16. PENETRATIONS THROUGH FIRE-RATED WALLS AND FLOORS SHALL BE SEALED TO MAINTAIN FIRE RATINGS. UTILIZE 3M CP25, PUTTY 303 OR EQUIVALENT.

17. STRUCTURES UNDERGOING CONSTRUCTION, ALTERATION, OR DEMOLITION OPERATIONS, INCLUDING THOSE IN UNDERGROUND LOCATIONS, SHALL COMPLY WITH NFPA 241, STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS, AND NFPA 1 (2012 EDITION, AS AMENDED).

18. FIRE SAFETY DURING ALTERATION:
    a. 16.4.4.1 WHERE THE BUILDING IS PROTECTED BY FIRE PROTECTION SYSTEMS, SUCH SYSTEMS SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES DURING ALTERATION. 2012 NFPA 1.

    b. 16.4.4.2 WHERE ALTERATION REQUIRES MODIFICATION OF A PORTION OF THE FIRE PROTECTION SYSTEM, THE REMAINDER OF THE SYSTEM SHALL BE KEPT IN SERVICE AND THE FIRE DEPARTMENT SHALL BE NOTIFIED. 2012 NFPA 1.

    c. 16.4.4.3 WHEN IT IS NECESSARY TO SHUT DOWN THE SYSTEM, THE AHJ SHALL HAVE THE AUTHORITY TO REQUIRE ALTERNATE MEASURES OF PROTECTION UNTIL THE SYSTEM IS RETURNED TO SERVICE. 2012 NFPA 1.

    d. 10.8.1.1 AS NECESSARY DURING EMERGENCIES, MAINTENANCE, DRILLS, PRESCRIBED TESTING, ALTERATIONS, OR RENOVATIONS, PORTABLE OR FIXED FIRE-EXTINGUISHING SYSTEMS OR DEVICES OR ANY FIRE-WARNING SYSTEM SHALL BE PERMITTED TO BE MADE INOPERATIVE OR INACCESSIBLE. A FIRE WATCH SHALL BE REQUIRED AS SPECIFIED IN SECTIONS 13.3.3.6.5.2(4)(b), 13.7.1.4.4, 16.5.4, 34.6.3.3, 41.2.2.6, 41.2.2.7, 41.2.4, 41.3.5, 41.4.1, 34.5.4.3, AND 25.1.8 AT NO COST TO THE AHJ. NFPA 1 2012, AS AMENDED.

19. AHJ APPROVAL: 13.1.1 THE AHJ SHALL HAVE THE AUTHORITY TO REQUIRE THAT CONSTRUCTION DOCUMENTS FOR ALL FIRE PROTECTION SYSTEMS BE SUBMITTED FOR REVIEW AND APPROVAL AND A PERMIT BE ISSUED PRIOR TO THE INSTALLATION, REHABILITATION, OR MODIFICATION. FURTHER, THE AHJ SHALL HAVE THE AUTHORITY TO REQUIRE THAT FULL ACCEPTANCE TESTS OF THE SYSTEMS BE PERFORMED IN THE AHJ'S PRESENCE PRIOR TO FINAL SYSTEM CERTIFICATION. FIRE ALARM SYSTEMS; FIRE HYDRANT SYSTEMS; FIRE-EXTINGUISHING SYSTEMS; STANDPIPES; AND OTHER FIRE-PROTECTION SYSTEMS AND APPURTENANCES REQUIRED BY THIS CODE SHALL BE APPROVED BY THE AHJ AS TO INSTALLATION AND LOCATION AND SHALL BE SUBJECT TO ACCEPTANCE TESTS REQUIRED BY THE APPROPRIATE COUNTY AGENCY. NFPA 1, CHAPTER 13 AS AMENDED.

20. COORDINATE ALL FIRE ALARM SYSTEM WORK WITH THE UNIVERSITY'S FIRE ALARM SYSTEM MAINTENANCE CONTRACTOR. PAY FOR ALL CHARGES LEVIED BY THE UNIVERSITY'S FIRE ALARM SYSTEM MAINTENANCE CONTRACTOR FOR SERVICES RENDERED.

21. PRIOR TO COMMENCING ANY WORK ON THE EXISTING FIRE ALARM SYSTEM, CONFIRM THAT THE SYSTEM IS OPERATING PROPERLY BY TESTING THE SYSTEM IN THE PRESENCE OF THE UNIVERSITY'S DESIGNATED REPRESENTATIVE OR OBTAINING A CLEARANCE FROM THE UNIVERSITY. ANY PRE-EXISTING DEFICIENCIES SHOULD BE NOTED AT THIS TIME AND PRESENTED TO THE UNIVERSITY FOR THEIR ACTION. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY ENSUING SYSTEM DEFICIENCIES NOT DOCUMENTED DURING THIS PRELIMINARY TESTING/CONFIRMATION PERIOD AT NO ADDITIONAL COST TO THE PROJECT.

22. DETECTION, ALARM, AND COMMUNICATION SYSTEMS:
    a. 13.7.1.1 WHERE BUILDING FIRE ALARM SYSTEMS OR AUTOMATIC FIRE DETECTORS ARE REQUIRED BY OTHER SECTIONS OF THIS CODE, THEY SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH NFPA 70, NFPA 72, NATIONAL FIRE ALARM AND SIGNALLING CODE, AND SECTION 13.7. 2012 NFPA 1, AS AMENDED.

    b. FIRE ALARM SYSTEM INSTALLATION AND MAINTENANCE SHALL BE IN ACCCORDANCE WITH NFPA 72, NATIONAL FIRE ALARM AND SIGNALLING CODE AND NFPA 1, 2012, AS AMENDED.

    c. 13.7.1.4.8.3 A MANUAL FIRE ALARM BOX SHALL BE PROVIDED AS FOLLOWS, UNLESS MODIFIED BY ANOTHER SECTION OF THE CODE.

    i. FOR NEW ALARM SYSTEM INSTALLATIONS, THE MANUAL FIRE ALARM BOX SHALL BE LOCATED WITHIN 5 FT (1.5 M) OF EXIT DOORWAYS.

    ii. FOR EXISTING ALARM SYSTEM INSTALLATIONS, THE MANUAL FIRE ALARM BOX EITHER SHALL BE PROVIDED IN THE NATURAL EXIT ACCESS PATH NEAR EACH REQUIRED EXIT OR WITHIN 5 FT (1.5 M) OF EXIT DOORWAYS.

    d. 13.7.1.4.8.4 MANUAL FIRE ALARM BOXES SHALL BE MOUNTED ON BOTH SIDES OF GROUPED OPENINGS OVER 40 FT (12.2 M) IN WIDTH, AND WITHIN 5 FT (1.5 M) OF EACH SIDE OF THE OPENING.

    e. 13.7.1.4.8.5* ADDITIONAL MANUAL FIRE ALARM BOXES SHALL BE LOCATED SO THAT, ON ANY GIVEN FLOOR IN ANY PART OF THE BUILDING, NO HORIZONTAL DISTANCE ON THAT FLOOR EXCEEDING 200 FT (60M) SHALL NEED TO BE TRAVERSED TO REACH A MANUAL FIRE ALARM BOX. [101:9.6.2.5]

    f. 13.7.1.4.10.5 UNLESS OTHERWISE PROVIDED IN 13.7.1.4.10.5.1 THROUGH 13.7.1.4.10.5.8, NOTIFICATION SIGNALS FOR OCCUPANTS TO EVACUATE SHALL BE AUDIBLE AND VISIBLE SIGNALS IN ACCORDANCE WITH NFPA 72 AND ICC/ANSI A117.1, AMERICAN STANDARD FOR ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES, OR OTHER MEANS OF NOTIFICATION ACCEPTABLE TO THE AHJ SHALL BE PROVIDED. NFPA 1 2012, AS AMENDED. [101:9.6.3.5]

    g. ALL VISUAL SIGNALLING DEVICES SHALL BE SYNCHRONIZED.

    h. 13.7.1.4.10.8 AUDIBILITY. AUDIBLE ALARM NOTIFICATION APPLIANCES SHALL PRODUCE SIGNALS THAT ARE DISTINCTIVE FROM AUDIBLE SIGNALS USED FOR OTHER PURPOSES IN A GIVEN BUILDING. NFPA 1 2012, AS AMENDED. [101:9.6.3.8]

    i. ALARM-SIGNALING DEVICES SHALL PRODUCE A SOUND THAT EXCEEDS THE AVERAGE AMBIENT SOUND LEVEL IN THE ROOM OR SPACE BY 15 DECIBELS MINIMUM, OR EXCEEDS ANY MAXIMUM SOUND LEVEL WITH A DURATION OF 60 SECONDS MINIMUM BY 5 DECIBELS MINIMUM, WHICHEVER IS GREATER. SOUND LEVELS FOR ALARM SIGNALS SHALL BE 110 DECIBELS MAXIMUM.

    j. THE CONTRACTOR AND FIRE ALARM VENDOR SHALL ENSURE AUDIBILITY IS MET THROUGH ALL OCCUPIABLE AREAS AND SPACES. AUDIBILITY WILL BE THOROUGHLY CHECKED AT THE TIME OF ALARM ACCEPTANCE TESTING.

    k. THE STANDARD EVACUATION SIGNAL SHALL BE SYNCHRONIZED WITHIN A NOTIFICATION ZONE.

23. 13.7.3.2.5 A TAG SHALL BE PLACED ON THE FIRE ALARM PANEL WHEN TESTED IN ACCORDANCE WITH SECTION 13.7.3.2. INFORMATION ON THE TAG SHALL INCLUDE THE DATE OF TESTING, TESTING COMPANY, AND CONTACT INFORMATION, TECHNICIAN PERFORMING THE TEST, AND THAT THE TEST WAS SATISFACTORY. NFPA 1 2012, CHAPTER 13, AS AMENDED.

24. 13.7.3.2.1 APPROVAL AND ACCEPTANCE:
    a. 13.7.3.2.1.3 BEFORE REQUESTING FINAL APPROVAL OF THE INSTALLATION, IF REQUIRED BY THE AHJ, THE INSTALLING CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT STATING THAT THE SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS AND TESTED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND THE APPROPRIATE NFPA REQUIREMENTS. [72:10.8.18.1.3]

    b. 13.7.3.2.1.4* THE RECORD OF COMPLETION FORM, FIGURE 10.18.2.1.1 OF NFPA 72 2010, SHALL BE PERMITTED TO BE A PART OF THE WRITTEN STATEMENT REQUIRED IN 13.7.3.2.1.3 WHEN MORE THAN ONE CONTRACTOR HAS BEEN RESPONSIBLE FOR THE INSTALLATION, EACH CONTRACTOR SHALL COMPLETE THE PORTIONS OF THE FORM FOR WHICH THAT CONTRACTOR HAD RESPONSIBILITY. [72:10.8.18.1.4]

    c. 13.7.3.2.1.5 THE RECORD OF COMPLETION FORM, FIGURE 10.18.2.1.1 OF NFPA 72 2010, SHALL BE PERMITTED TO BE A PART OF THE DOCUMENTS THAT SUPPORT THE REQUIREMENTS OF 13.7.3.2.2.4. 2012 NFPA 1, AS AMENDED. [72:10.18.1.5]

REVISION NO.	SYM.	DESCRIPTION	SHT.__ OF__	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE

5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

GENERAL ELECTRICAL, LIGHTING AND FIRE ALARM NOTES
NOTES

ECS INC.

DESIGN BY:	CHECKED BY:	PROJECT NO.	DRAWING NO.
MA	MA	CCR-17-6251B	E002
DRAWN BY:	APPROVED BY:	DATE	SHEET
CAD	MA	OCT 2019	36 OF 50 SHTS.
SCALE: AS SHOWN			

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EXISTING 150 KVA PAD MOUNTED TRANSFORMER T-5

EXISTING 750 KVA PAD MOUNTED TRANSFORMER T-3

EXISTING 2' x 4' HANDHOLE #1

REMOVE #1/0 CONDUCTORS FROM EXISTING 1-4"C, EXISTING 350 KCMIL CONDUCTORS IN 1-4"C TO REMAIN

REMOVE #1/0 CONDUCTORS FROM EXISTING 4"C

MAINTENANCE FACILITY

HALE IMILOA

SAWCUT AND PATCH AC PAVEMENT, SEE CIVIL DRAWINGS FOR PAVEMENT RESTORATION DETAILS

EXISTING 2' x 4' HANDHOLE #2

NEW 3"C, SEE TYPICAL DUCT SECTION 2/E601

REMOVE CONDUCTORS FROM EXISTING 2"C, ABANDON CONDUIT IN PLACE

TUNNEL BELOW GRATED TRENCH DRAIN

SEE ENLARGED PLAN, 2/E101

HALE ULUWEHI

GREENHOUSE

N

1/E101 ELECTRICAL SITE PLAN

SCALE: 1" = 20'

HALE ULUWEHI

GREENHOUSE

6.4 KW STANDBY GENERATOR, SEE 1/E601

3/4"C, 1 1/4"C, SEE E301 FOR CONTINUATION

1 1/4" PVC SCHEDULE 40, SEE E301 FOR CONTINUATION

#10 37 41 39 37 41 39 37 #10 41 #10 39 #10 37

DUPLEX GFCI RECEPTACLE WITH WEATHERPROOF IN-USE COVER, TYPICAL FOR 10, SEE MOUNTING DETAIL 3/E601

1"C PVC SCHEDULE 40

GRS CONDUIT, SURFACE MOUNTED ALONG CHAIN LINK FENCE, TYPICAL, SEE 4/E601

N

2/E101 ENLARGED ELECTRICAL SITE PLAN

SCALE: 1" = 10'

GRAPHIC SCALES

10' 0' 10' 20' 30' 80'

1" = 10'

20' 0' 20' 40' 60' 80'

1" = 20'

REVISION NO.	SYM.	DESCRIPTION	SHT.__ OF__	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO LICENSED PROFESSIONAL ENGINEER No. 10017-E HAWAII, U.S.A.

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UNIVERSITY OF HAWAII
STATE OF HAWAII

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5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

ELECTRICAL SITE PLAN

ECS INC.		PROJECT NO. CCR-17-6251B	DRAWING NO. E101
DESIGN BY: MA	CHECKED BY: MA		
DRAWN BY: CAD	APPROVED BY: MA	DATE OCT 2019	SHEET 37 OF 50 SHTS.
SCALE: AS SHOWN			

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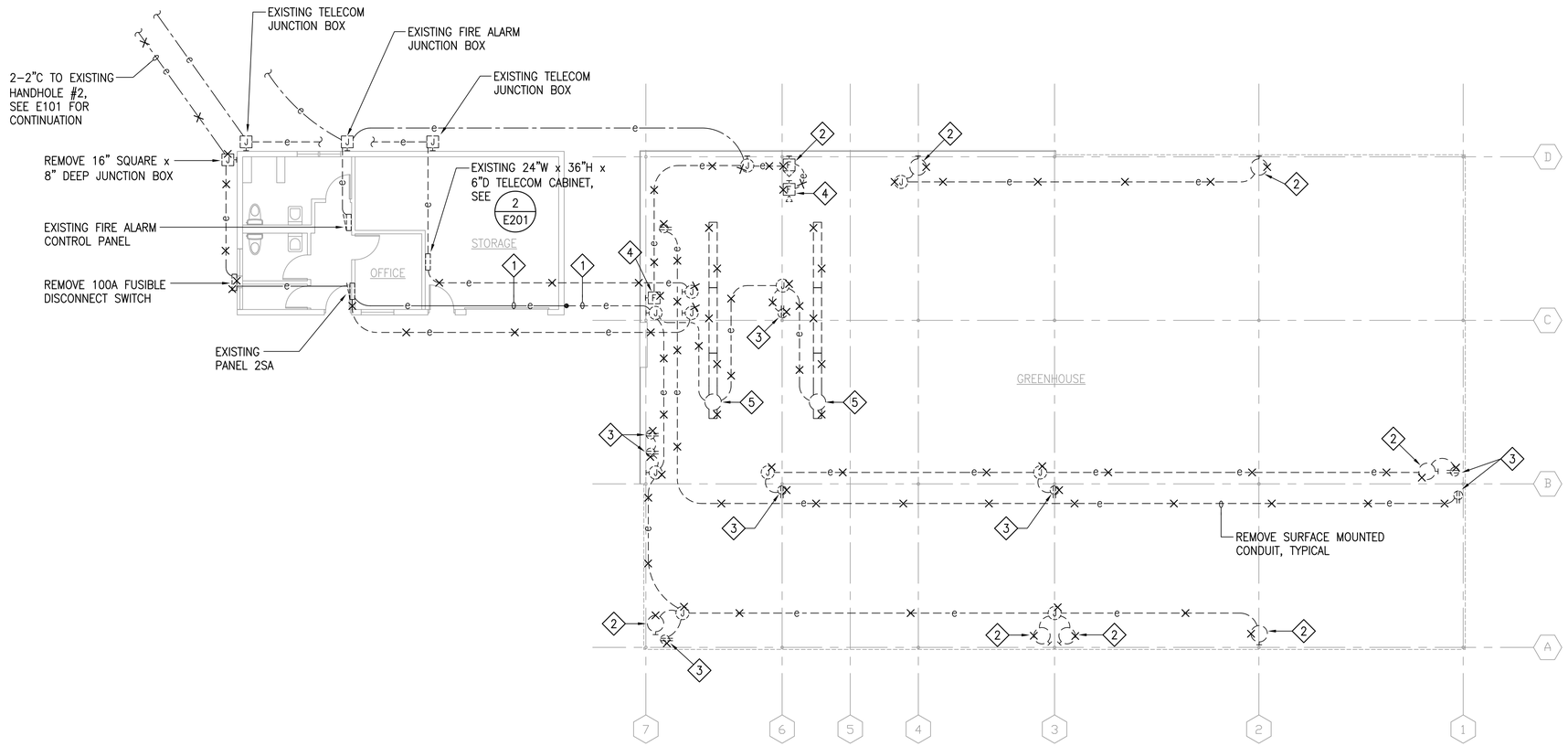
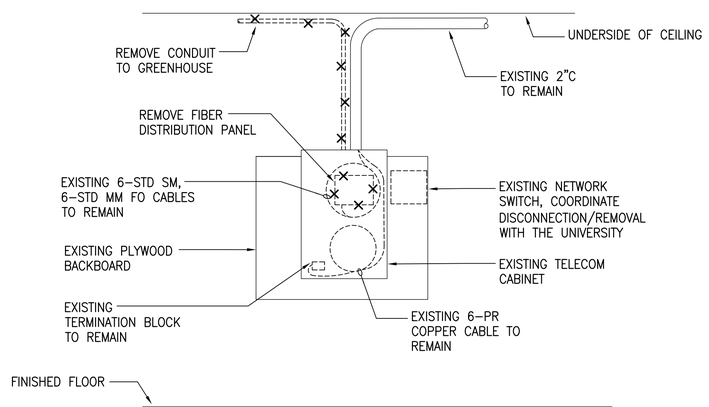


1/E201 ELECTRICAL DEMOLITION PLAN

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

NOTES:

1. REMOVE CONDUCTORS FROM UNDERGROUND OR CONCEALED CONDUIT. ABANDON CONDUIT IN PLACE.
2. REMOVE LUMINAIRE. SALVAGE AND RETURN TO THE UNIVERSITY.
3. REMOVE WIRING DEVICE.
4. REMOVE FIRE ALARM DEVICE.
5. REMOVE LUMINAIRE. SALVAGE FLUORESCENT LAMPS AND RETURN TO THE UNIVERSITY.
6. THERE IS A CCTV SYSTEM AT THE FACILITY. THE CCTV SYSTEM WILL BE DISCONNECTED/REMOVED BY THE UNIVERSITY.



2/E201 EXISTING TELECOM CABINET DETAIL - REMOVAL WORK

NOT TO SCALE

GRAPHIC SCALE

5' 0 5' 10' 15' 20' 25' 30' 35' 40'

1/8" = 1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

ELECTRICAL DEMOLITION PLAN

ECS INC.		PROJECT NO. CCR-17-6251B	DRAWING NO. E201
DESIGN BY: MA	CHECKED BY: MA		
DRAWN BY: CAD	APPROVED BY: MA	DATE OCT 2019	SHEET 38 OF 50 SHTS.
SCALE: AS SHOWN			

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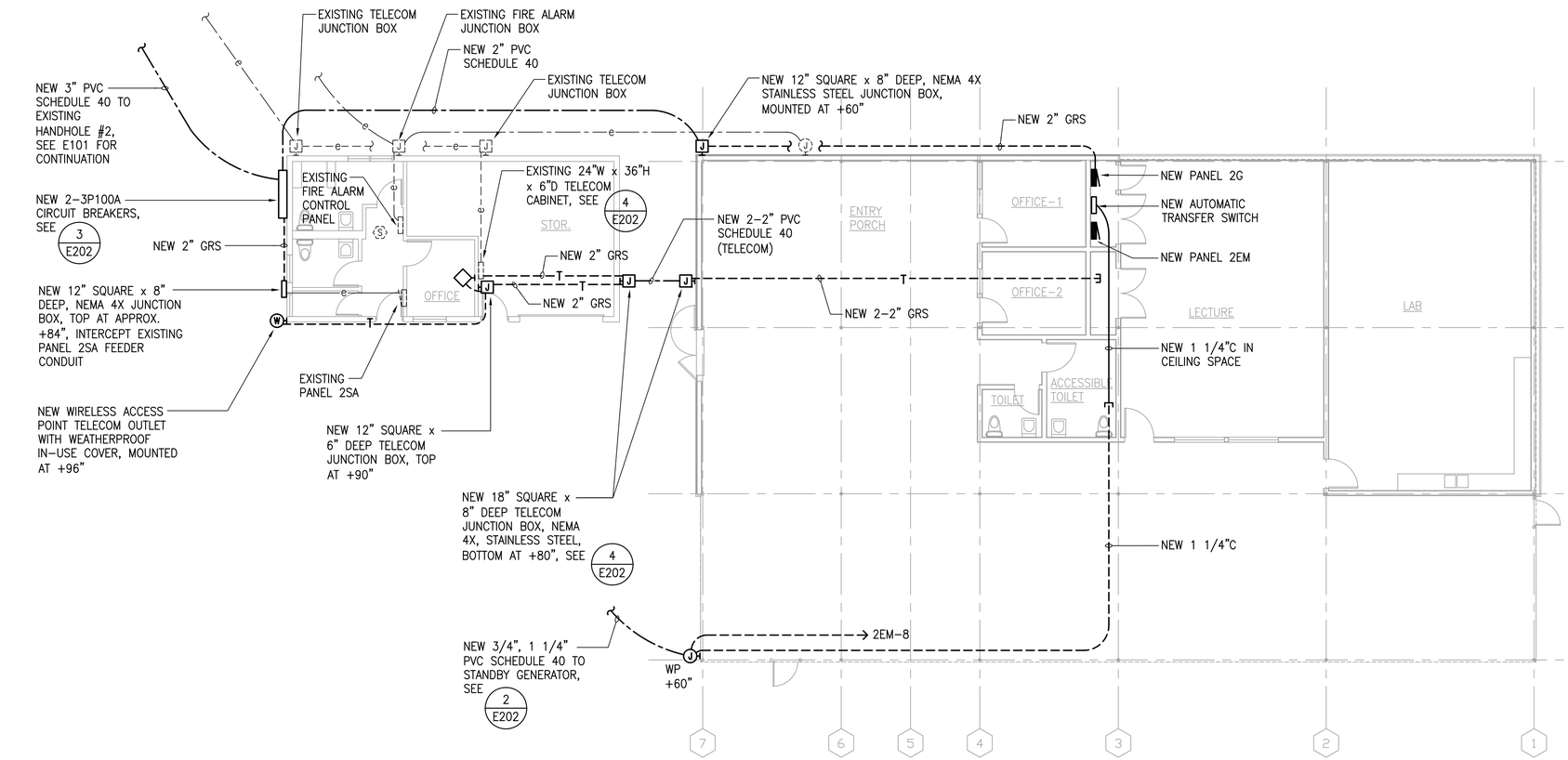
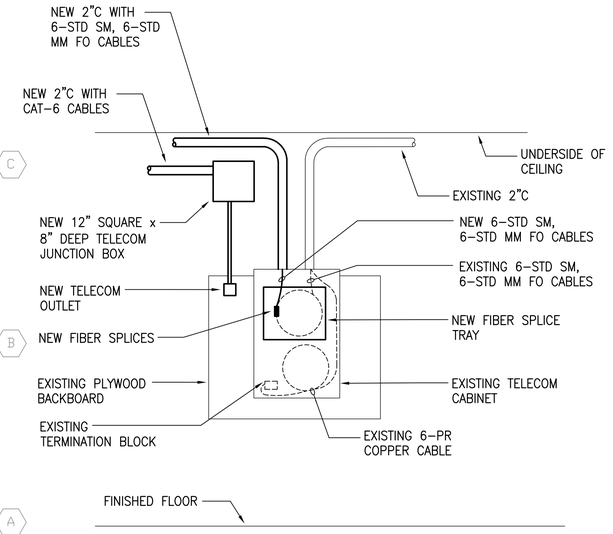


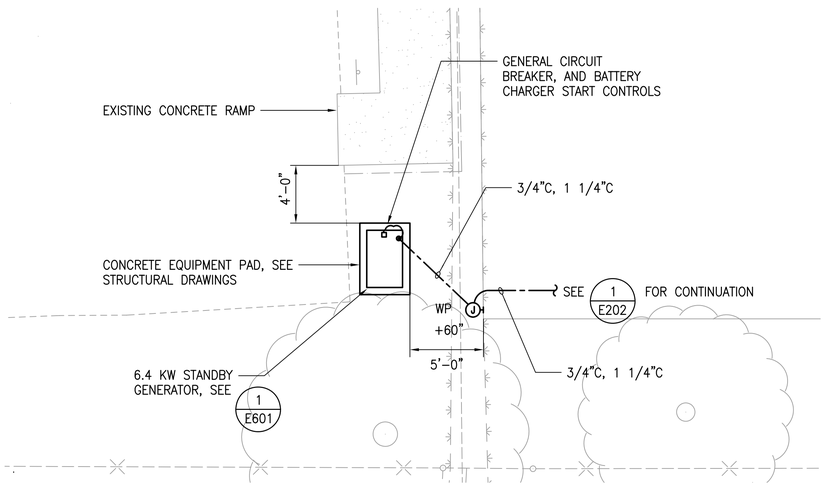
1 E202 ELECTRICAL DISTRIBUTION PLAN

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



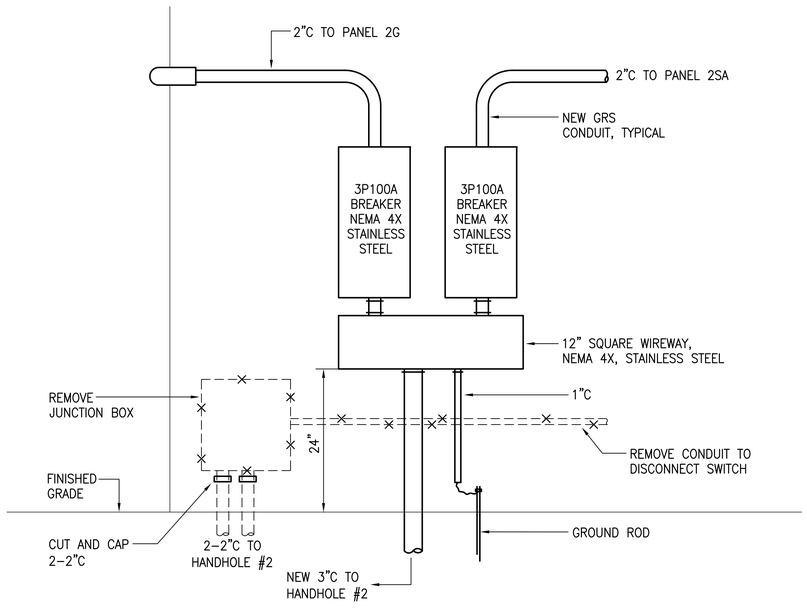
4 E202 EXISTING TELECOM CABINET DETAIL - NEW WORK

NOT TO SCALE



2 E202 STANDBY GENERATOR ELECTRICAL PLAN

SCALE: 1" = 5'-0"



3 E202 CIRCUIT BREAKER ELEVATION

NOT TO SCALE

GRAPHIC SCALE

5' 0 5' 10' 15' 20' 25' 30' 35' 40'

1/8" = 1'-0"

5' 0' 5' 10' 15'

1" = 5'

REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO LICENSED PROFESSIONAL ENGINEER No. 10017-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

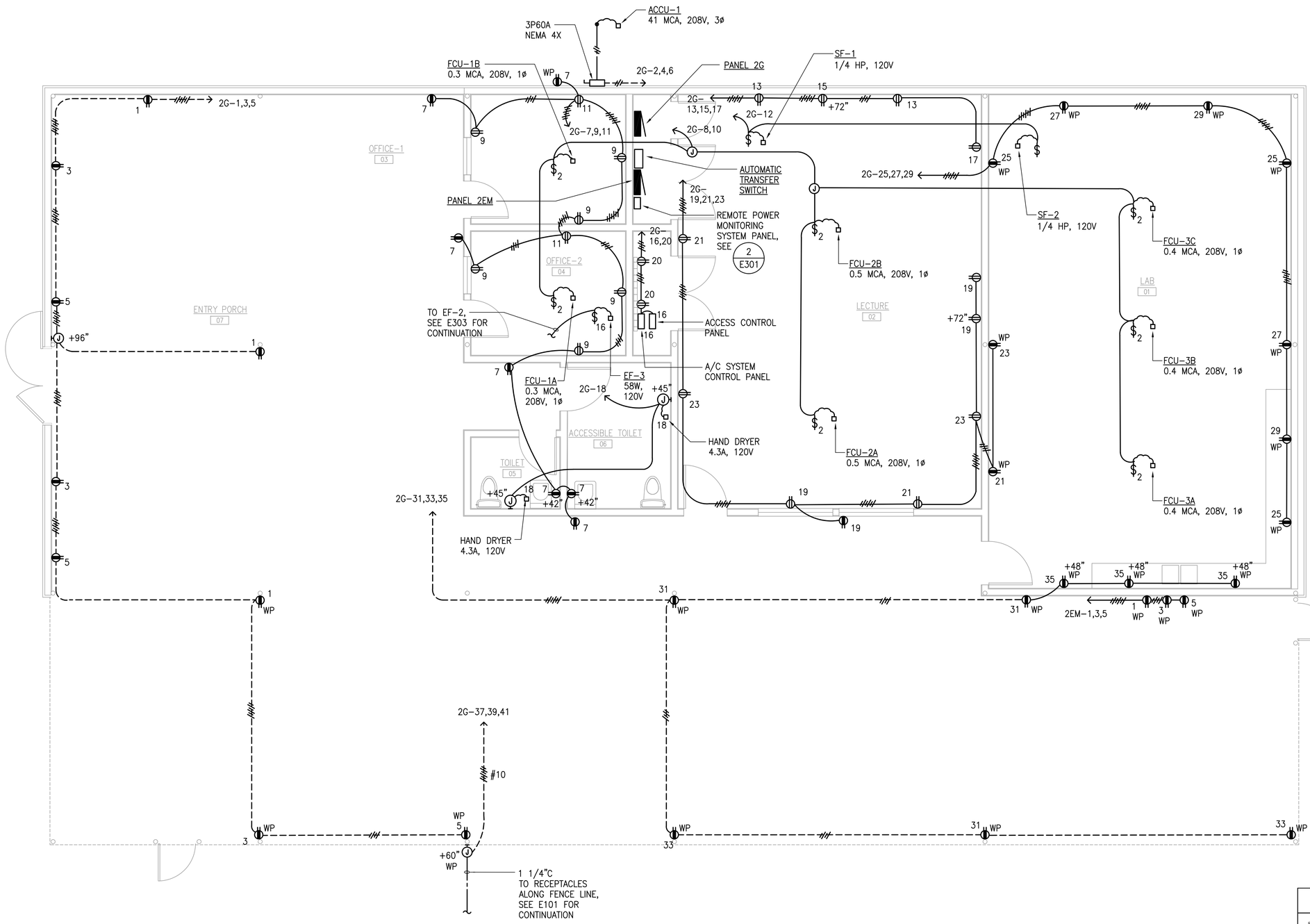
UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

ELECTRICAL DISTRIBUTION PLAN, STANDBY GENERATOR ELECTRICAL PLAN

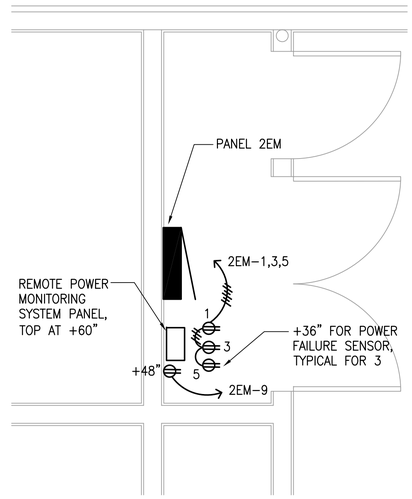
ECS INC.

DESIGN BY:	CHECKED BY:	PROJECT NO.	DRAWING NO.
MA	MA	CCR-17-6251B	E202
DRAWN BY:	APPROVED BY:	DATE	SHEET
CAD	MA	OCT 2019	39 OF 50 SHTS.
SCALE: AS SHOWN			



1 E301 POWER AND OUTLETS PLAN

SCALE: 1/4" = 1'-0"



2 E301 ENLARGED PLAN

SCALE: 1/2" = 1'-0"

GRAPHIC SCALE

5' 0 5' 10' 15'

1/4" = 1'-0"

1' 0 1' 2' 3' 4' 5' 6' 7' 8' 9' 10'

1/2" = 1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT. / OF	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

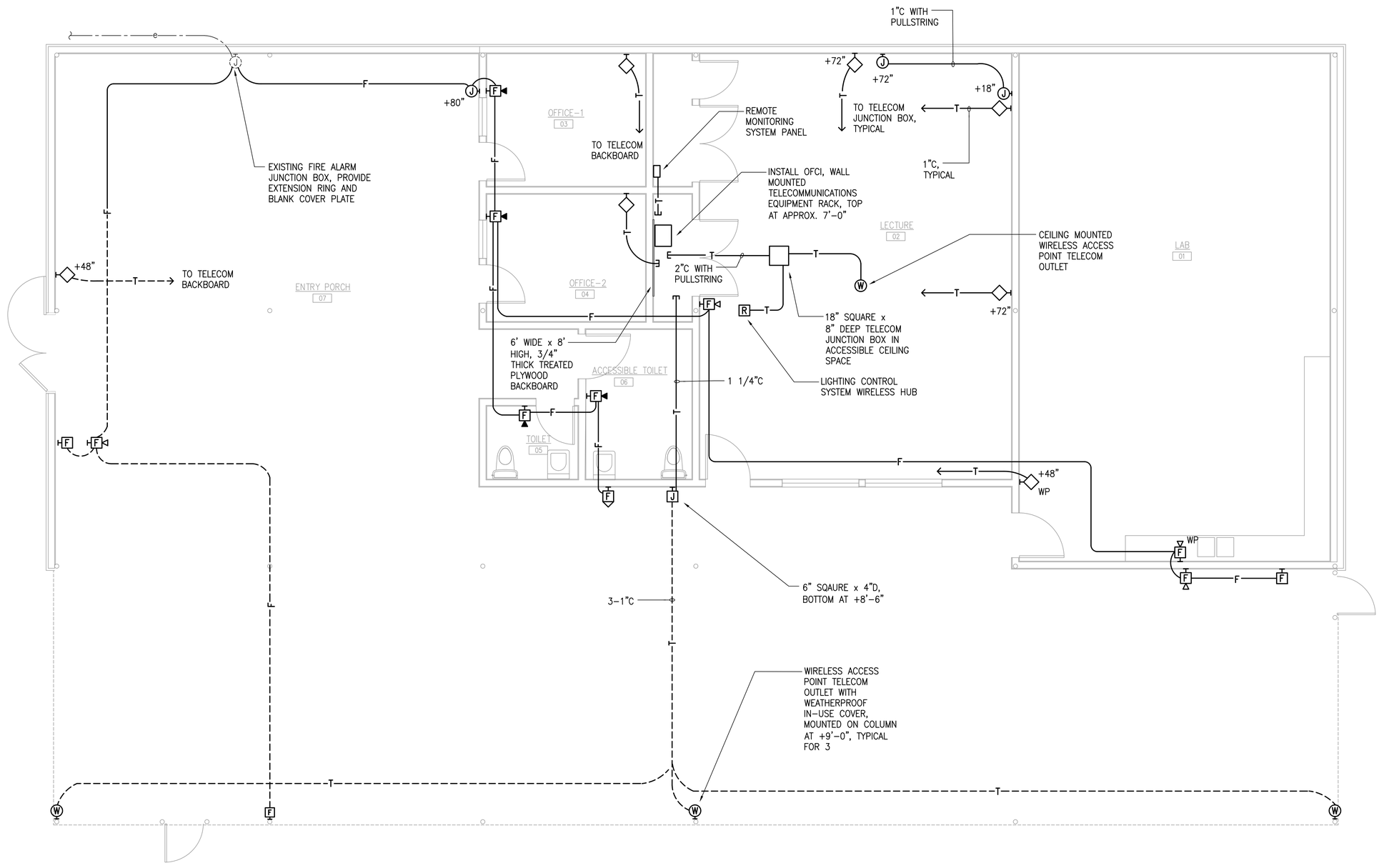
UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

POWER AND OUTLETS PLAN

ECS INC.		PROJECT NO. CCR-17-6251B	DRAWING NO. E301
DESIGN BY: MA	CHECKED BY: MA		
DRAWN BY: CAD	APPROVED BY: MA	DATE OCT 2019	SHEET 40 OF 50 SHTS.
SCALE: AS SHOWN			

10/28/19-12:10 Y:\001\001.640 WCC Uluweh\001.640 E301.P02.dwg



N

1 / E302 TELECOMMUNICATIONS AND FIRE ALARM PLAN

SCALE: 1/4" = 1'-0"

GRAPHIC SCALE

5' 0 5' 10' 15'

1/4" = 1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO LICENSED PROFESSIONAL ENGINEER No. 10017-E HAWAII, U.S.A.

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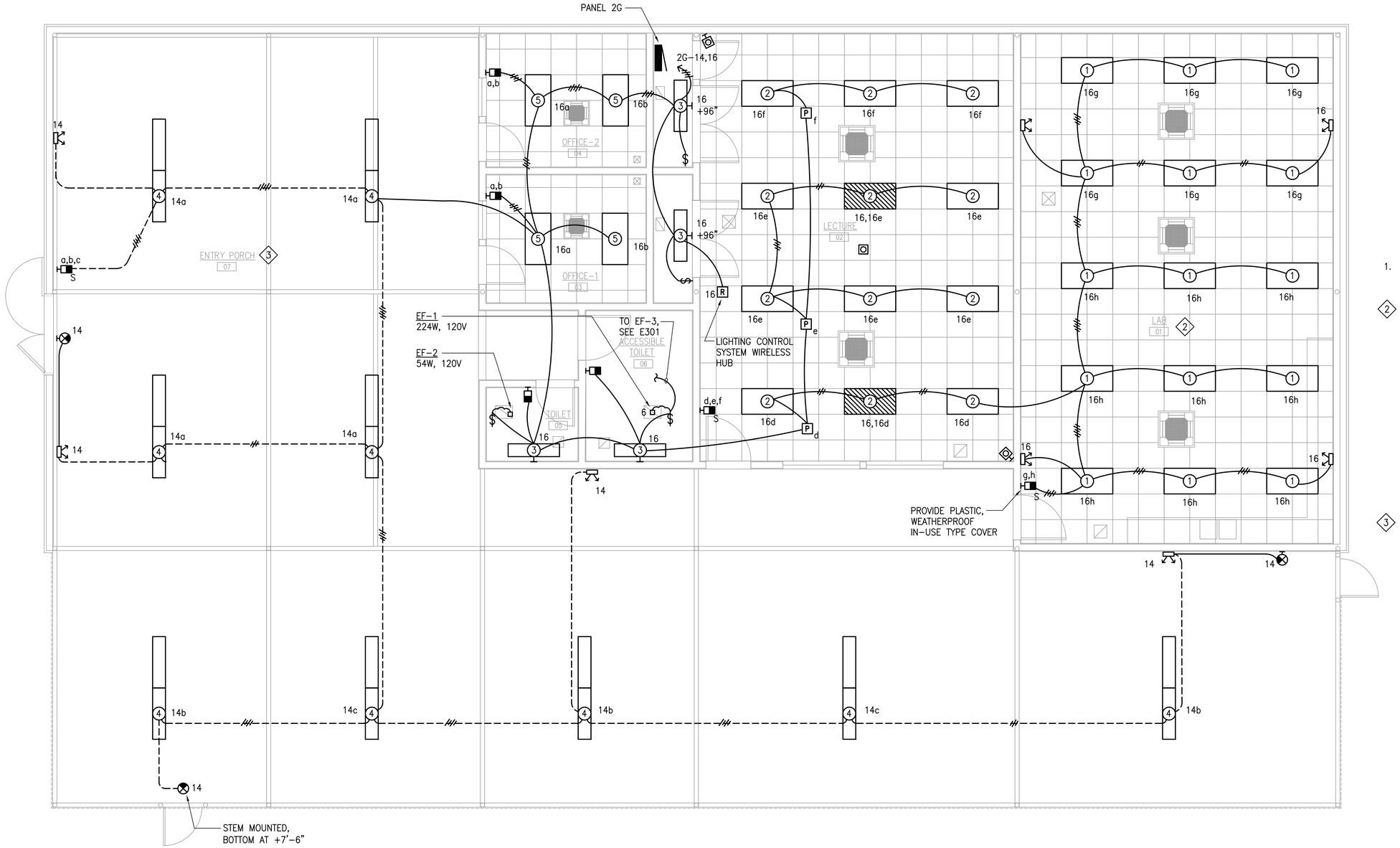
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

TELECOMMUNICATIONS AND FIRE ALARM PLAN

ECS INC.		PROJECT NO. CCR-17-6251B	DRAWING NO. E302
DESIGN BY: MA	CHECKED BY: MA		
DRAWN BY: CAD	APPROVED BY: MA	DATE OCT 2019	SHEET 41 OF 50 SHTS.
SCALE: AS SHOWN			



NOTES:

1. LIGHTING CONTROL SYSTEM LOW VOLTAGE WIRING CONNECTIONS NOT SHOWN. SEE LIGHTING CONTROL SCHEMATIC DIAGRAMS FOR CONNECTION REQUIREMENTS.

◇2 CONCEPTUAL SEQUENCE OF OPERATIONS FOR LAB LIGHTING LOADS:

- CAMPUS NETWORK LIGHTING CONTROL SYSTEM SHALL BE SET FOR NORMAL HOURS AND AFTER HOURS MODE. NORMAL HOURS SHALL BE 6:00 AM TO 6:00 PM. DURING THIS PERIOD MANUAL SWITCH ACTIVATION SHALL TURN CONTROL THE LABORATORY LIGHTS.
- AT THE END OF THE NORMAL HOURS PERIOD, THE LIGHTS SHALL FLASH TO WARN OCCUPANTS AND THEN TURN OFF.
- AFTER HOURS SHALL BE FROM 6:01 PM TO 5:59 AM. DURNG THIS PERIOD, MANUAL SWITCH ACTIVATION SHALL TURN ON LIGHTS ASSOCIATED WITH THAT MANUAL SWITCH FOR 2 HOURS AFTER WHICH THE LIGHTS WILL TURN OFF.

◇3 CONCEPTUAL SEQUENCE OF OPERATIONS FOR ENTRY PORCH LIGHTING LOADS:

- CAMPUS NETWORK LIGHTING CONTROL SYSTEM SHALL BE SET FOR NORMAL HOURS AND AFTER HOURS MODE. NORMAL HOURS SHALL BE 7:00 AM TO 6:00 PM. DURING THIS PERIOD MANUAL SWITCH ACTIVATION SHALL TURN CONTROL THE ENTRY PORCH LIGHTS.
- AT THE END OF THE NORMAL HOURS PERIOD, THE LIGHTS ASSIGNED TO SWITCHES "a" AND "b" SHALL FLASH TO WARN OCCUPANTS AND THEN TURN OFF.
- AFTER HOURS SHALL BE FROM 6:01 PM TO 6:59 AM. DURNG THIS PERIOD, MANUAL SWITCH ACTIVATION SHALL TURN ON LIGHTS ASSOCIATED WITH MANUAL SWITCHES "a" AND "b" FOR 2 HOURS AFTER WHICH THE LIGHTS WILL TURN OFF.
- AFTER HOURS MODE FOR LIGHTS ASSOCIATED WITH MANUAL SWITCH "c" SHALL BE TIME-BASED CONTROLLED WITH TURN ON AT 6:00 PM AND TURN OFF AT 7:00 AM.

N

1 / E303 LIGHTING PLAN

SCALE: 1/4" = 1'-0"

GRAPHIC SCALE

5' 0 5' 10' 15'

1/4" = 1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017-E
HAWAII, U.S.A.

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PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE

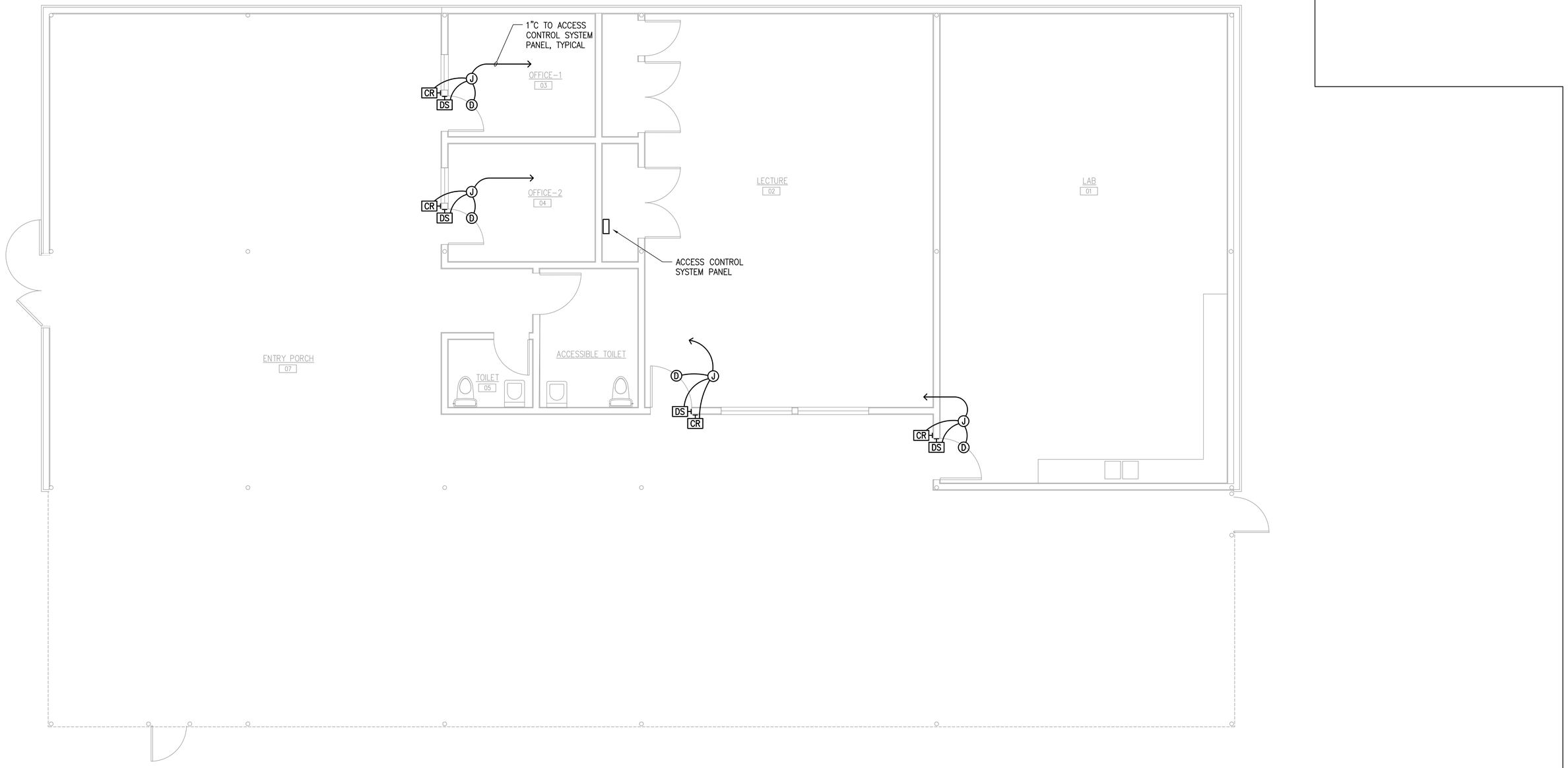
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

LIGHTING PLAN

ECS INC.

DESIGN BY:	CHECKED BY:	PROJECT NO.	DRAWING NO.
MA	MA	CCR-17-6251B	E303
DRAWN BY:	APPROVED BY:	DATE	SHEET
CAD	MA	OCT 2019	42 OF 50 SHTS.
SCALE: AS SHOWN			

10/28/19-11:19 Y:\001\001.640 WCC Uluweh\001.640 E303.L01.dwg



N

1 / E304 ACCESS CONTROL SYSTEM PLAN

SCALE: 1/4" = 1'–0"

GRAPHIC SCALE

5' 0 5' 10' 15'

1/4" = 1'–0"

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017–E
HAWAII, U.S.A.

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PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

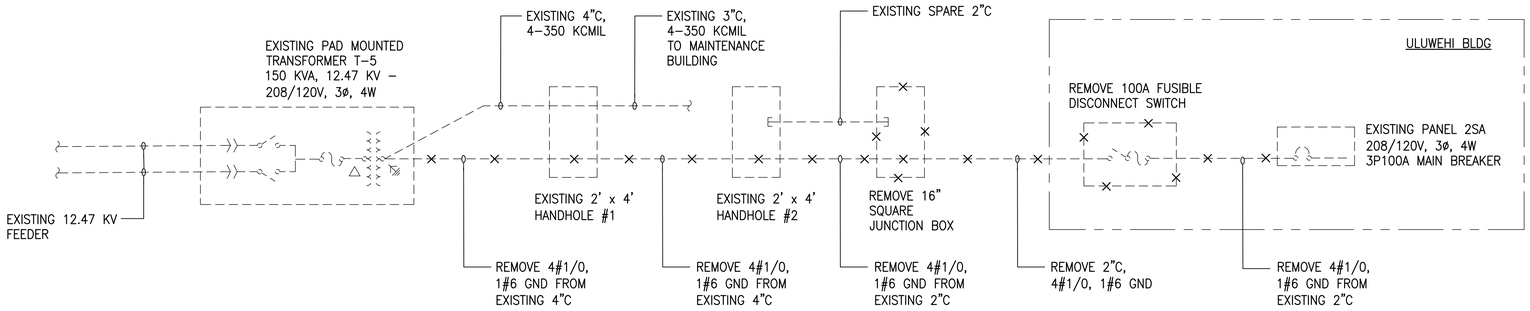
UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

ACCESS CONTROL SYSTEM PLAN

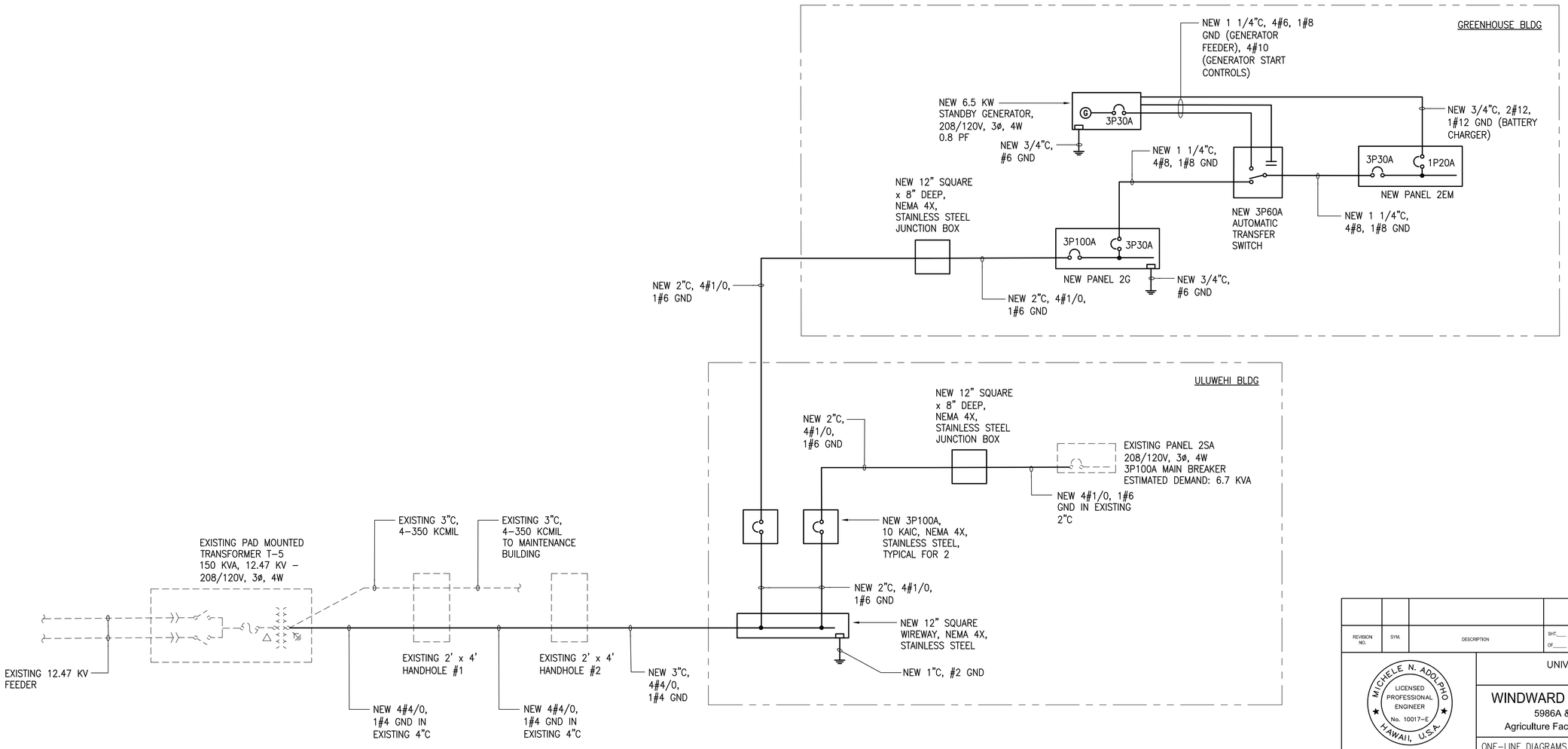
ECS INC.		PROJECT NO.	DRAWING NO.
DESIGN BY: MA	CHECKED BY: MA	CCR–17–6251B	E304
DRAWN BY: CAD	APPROVED BY: MA	DATE	SHEET 43
SCALE: AS SHOWN		OCT 2019	OF 50 SHTS.

10/28/19–11:20 X:\001\001.640 WCC Uluwehi\001.640 E304.C01.dwg



ONE-LINE DIAGRAM - DEMOLITION WORK

NO SCALE



ONE-LINE DIAGRAM - NEW WORK

NO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT.____ OF____	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO
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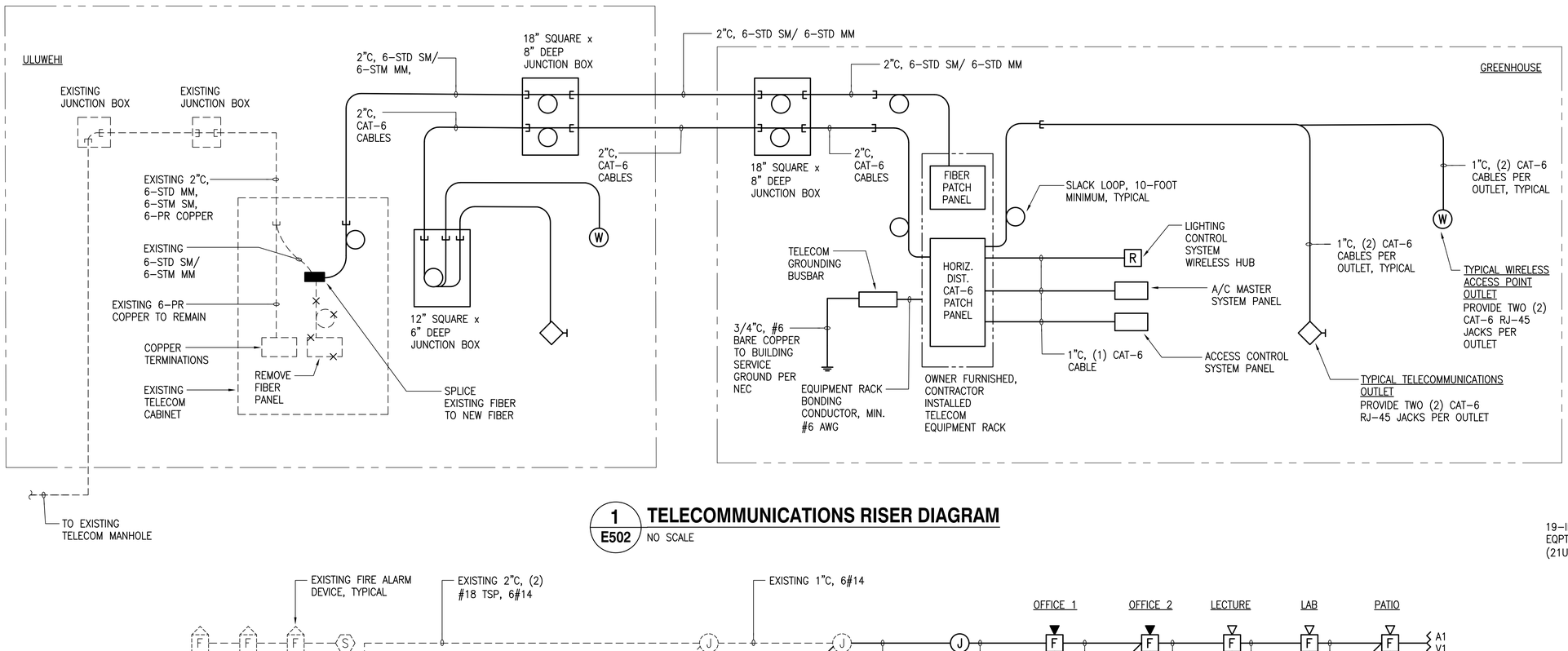
ONE-LINE DIAGRAMS

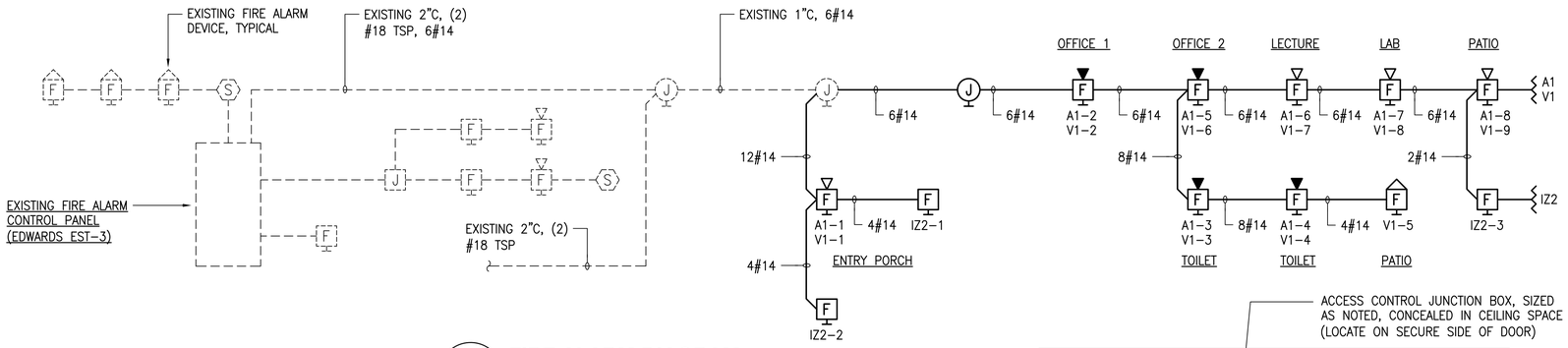
ECS INC.		PROJECT NO.	DRAWING NO.
DESIGN BY: MA	CHECKED BY: MA	CCR-17-6251B	E501
DRAWN BY: CAD	APPROVED BY: MA	DATE	SHEET 44 OF 50 SHTS.
SCALE: AS SHOWN		OCT 2019	

10/28/19-11:20 X:\001\001.640 WCC Uluwehi\001.640 E501.R01.dwg



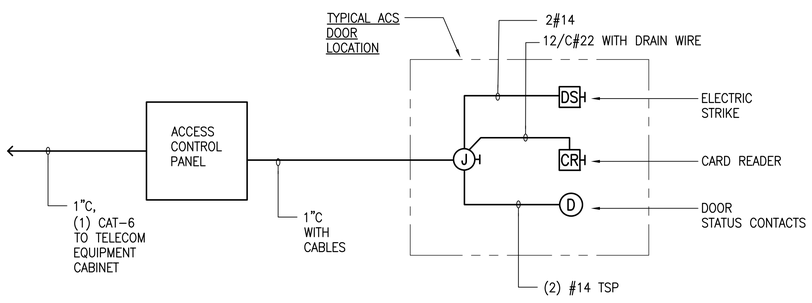
1 E502 TELECOMMUNICATIONS RISER DIAGRAM

NO SCALE



2 E502 FIRE ALARM DIAGRAM

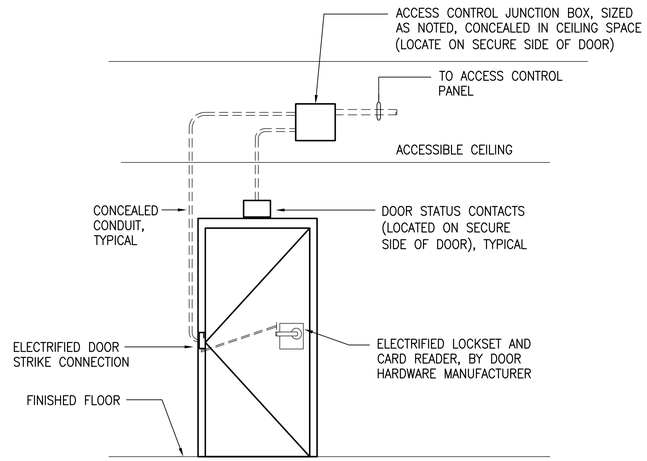
NO SCALE



NOTE:
CONFIRM WIRING REQUIREMENTS WITH ACCESS CONTROL SYSTEM MANUFACTURER. PROVIDE CABLING AND ACS EQUIPMENT IN ACCORDANCE WITH APPROVED ACS SHOP DRAWINGS.

3 E502 ACCESS CONTROL SYSTEM DIAGRAM

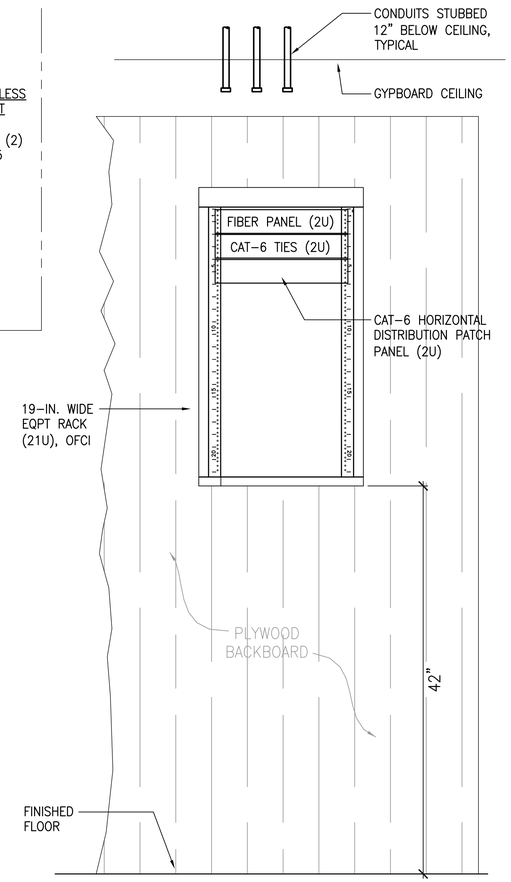
NO SCALE



NOTE:
PRIOR TO ROUGH-IN, CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF OUTLET BOXES WITH ACCESS CONTROL SYSTEM PROVIDER AND DOOR HARDWARE CONTRACTOR.

4 E502 TYPICAL ACCESS CONTROL CONDUIT ROUGH-IN DIAGRAM

NOT TO SCALE



5 E502 EQUIPMENT RACK ELEVATION

NOT TO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

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HAWAII, U.S.A.

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EXPIRATION DATE OF THE LICENSE

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STATE OF HAWAII

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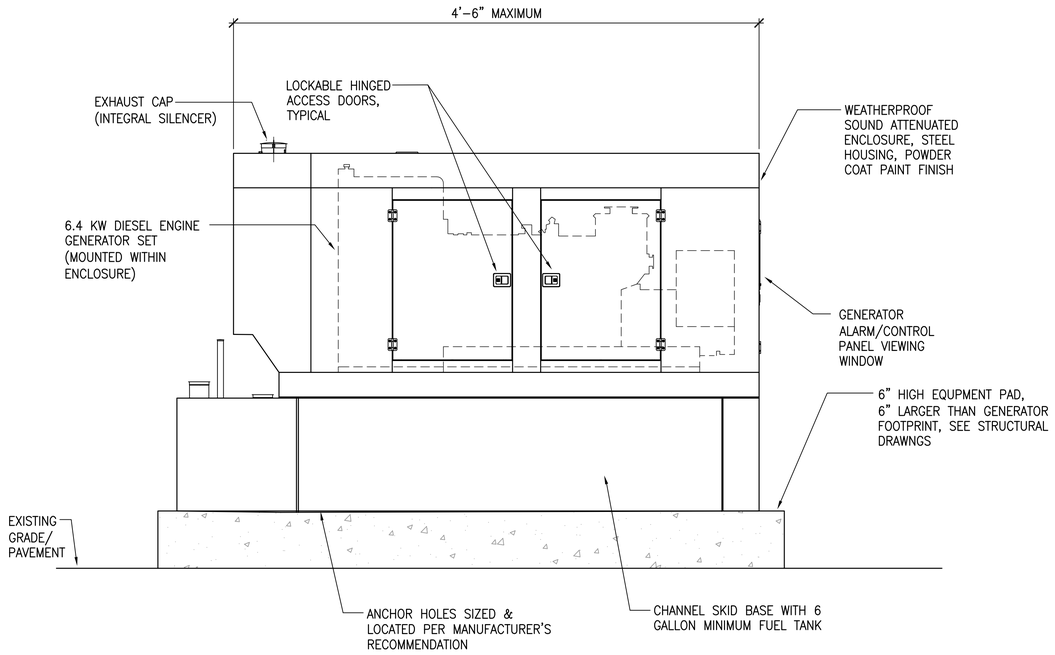
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

TELECOMMUNICATIONS, FIRE ALARM AND ACCESS CONTROL SYSTEM DIAGRAMS

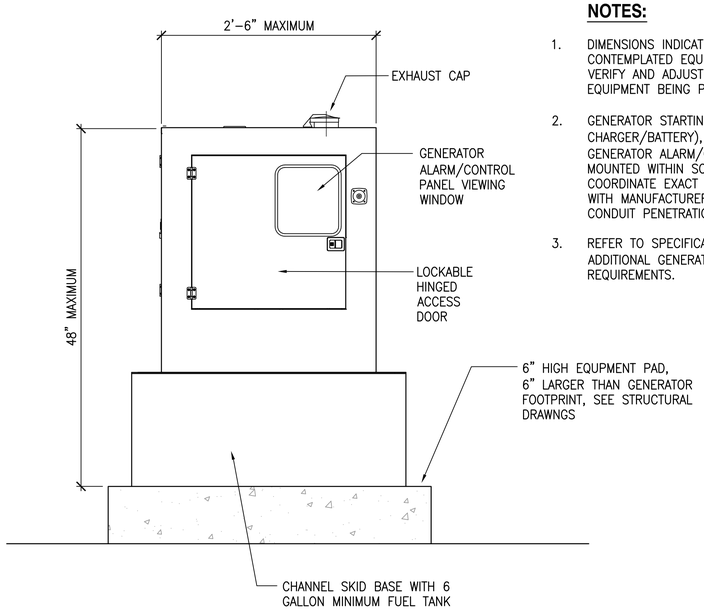
ECS INC.

DESIGN BY:	CHECKED BY:	PROJECT NO.	DRAWING NO.
MA	MA	CCR-17-6251B	E502
DRAWN BY:	APPROVED BY:	DATE	SHEET
CAD	MA	OCT 2019	45 OF 50 SHTS.
SCALE: AS SHOWN			

10/28/19-11:20 Y:\001\001.640 WCC Uluweh\001.640 E502.R02.dwg



LONGITUDINAL ELEVATION

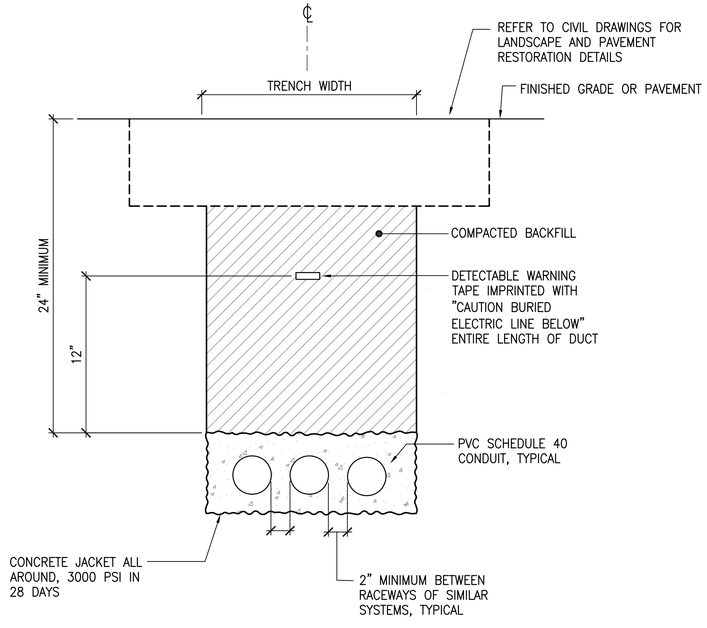


REAR ELEVATION

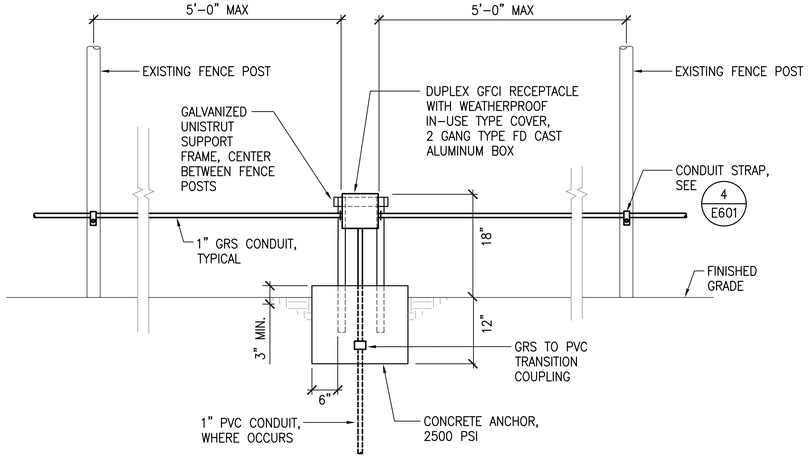
NOTES:

1. DIMENSIONS INDICATED ON DETAILS ARE FOR CONTEMPLATED EQUIPMENT. CONTRACTOR SHALL VERIFY AND ADJUST ALL DIMENSIONS FOR THE EQUIPMENT BEING PROVIDED.
2. GENERATOR STARTING EQUIPMENT (BATTERY CHARGER/BATTERY), EXHAUST SILENCER AND GENERATOR ALARM/CONTROL PANEL TO BE MOUNTED WITHIN SOUND ATTENUATED ENCLOSURE. COORDINATE EXACT LOCATION OF ALL EQUIPMENT WITH MANUFACTURER PRIOR TO ROUGHING IN CONDUIT PENETRATIONS.
3. REFER TO SPECIFICATION SECTION 16208 FOR ADDITIONAL GENERATOR EQUIPMENT/ENCLOSURE REQUIREMENTS.

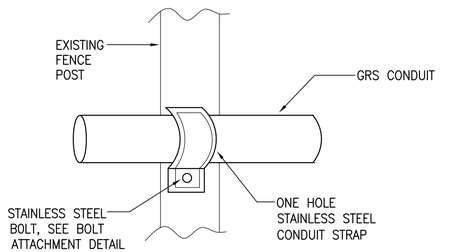
1 E601 GENERATOR DETAIL
NOT TO SCALE



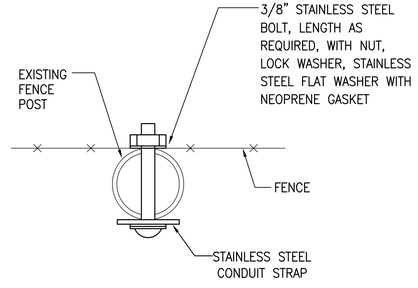
2 E601 TYPICAL DUCT SECTION
NOT TO SCALE



3 E601 RECEPTACLE DETAIL
NOT TO SCALE



ELEVATION



BOLT ATTACHMENT

4 E601 CONDUIT STRAP DETAIL
NOT TO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO LICENSED PROFESSIONAL ENGINEER No. 10017–E HAWAII, U.S.A.

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PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

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STATE OF HAWAII

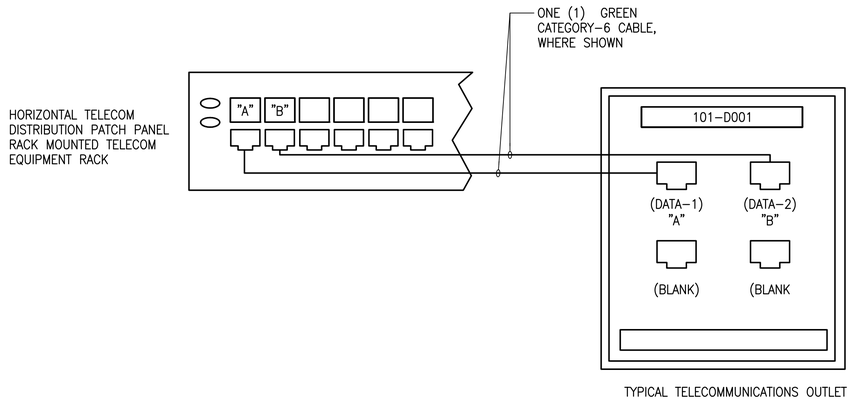
WINDWARD COMMUNITY COLLEGE

5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

ELECTRICAL DETAILS

ECS INC.		PROJECT NO. CCR–17–6251B	DRAWING NO. E601
DESIGN BY: MA	CHECKED BY: MA		
DRAWN BY: CAD	APPROVED BY: MA	DATE OCT 2019	SHEET 46 OF 50 SHTS.
SCALE: AS SHOWN			

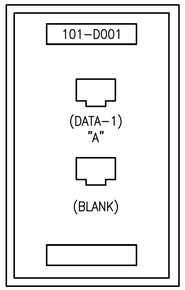
10/28/19–11:20 X:\D01\D01.640 WCC Uluwehi\D01.640 E601.B01.dwg



TYPICAL TELECOMMUNICATIONS OUTLET

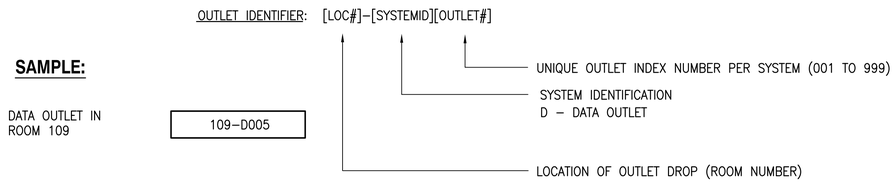
1 E602 TYPICAL TELECOMMUNICATIONS OUTLET WIRING DIAGRAM

NOT TO SCALE



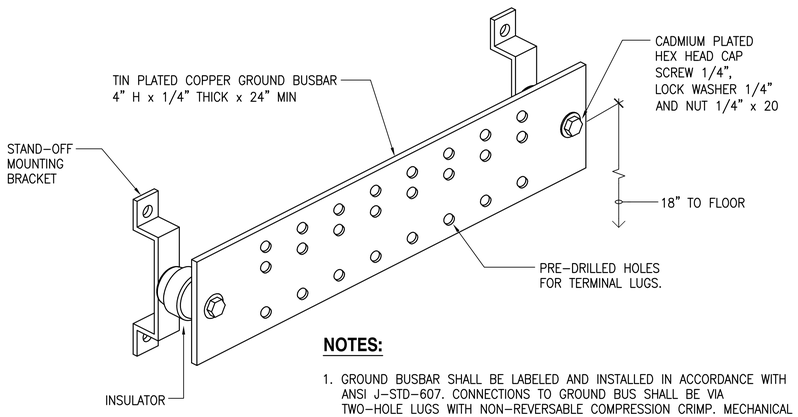
2 E602 TYPICAL WIRELESS ACCESS POINT OUTLET

NOT TO SCALE



3 E602 TELECOMMUNICATION OUTLET LABELING SCHEME

NOT TO SCALE

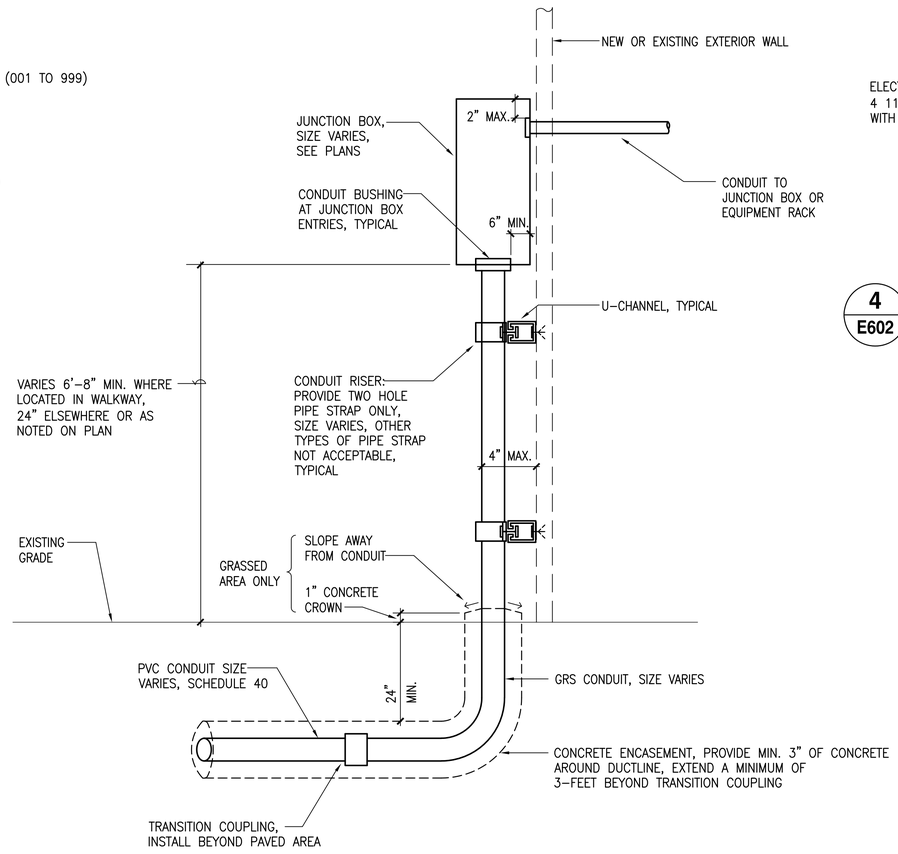


NOTES:

1. GROUND BUSBAR SHALL BE LABELED AND INSTALLED IN ACCORDANCE WITH ANSI J-STD-607. CONNECTIONS TO GROUND BUS SHALL BE VIA TWO-HOLE LUGS WITH NON-REVERSABLE COMPRESSION CRIMP. MECHANICAL LUG CONNECTIONS SHALL NOT BE USED.
2. PROVIDE #6 COPPER GROUND CONDUCTOR CONNECTION TO BUILDING ELECTRICAL SERVICE GROUND.
3. PROVIDE, AT A MINIMUM, A #6 COPPER GROUND CONNECTION TO TELECOM EQUIPMENT RACK.

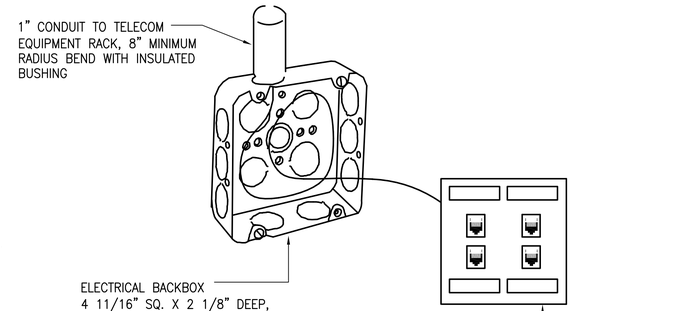
5 E602 TELECOMMUNICATIONS GROUNDING BUSBAR DETAIL

NOT TO SCALE



6 E602 TYPICAL TELECOMMUNICATIONS EXTERIOR JUNCTION BOX

NOT TO SCALE



NOTES:

1. DO NOT EXCEED CABLE MANUFACTURER'S RECOMMENDED MINIMUM BENDING RADIUS.
2. OUTLET BOX SHOWN FOR FLUSH MOUNTED TELECOMMUNICTION OUTLETS. SURFACE MOUNTED OUTLETS SIMILAR.

4 E602 TYPICAL TELECOMMUNICATION OUTLET BOX DETAIL

NOT TO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO LICENSED PROFESSIONAL ENGINEER No. 10017-E HAWAII, U.S.A.

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PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2020

EXPIRATION DATE OF THE LICENSE

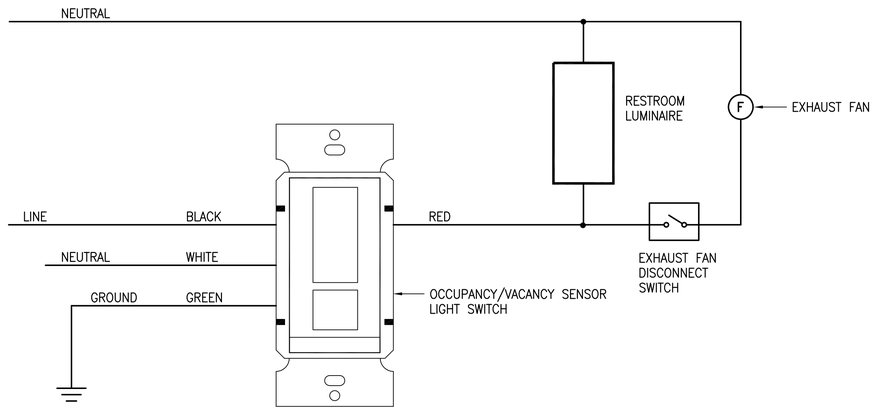
UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

TELECOMMUNICATIONS DETAILS

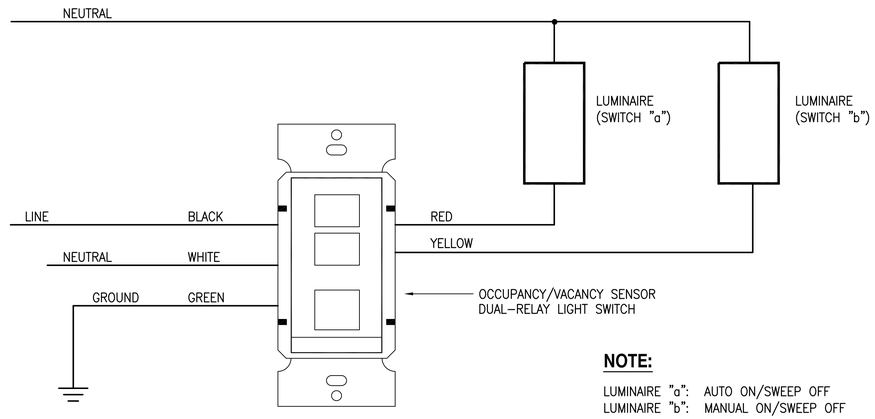
ECS INC.		PROJECT NO.	DRAWING NO.
DESIGN BY: MA	CHECKED BY: MA	CCR-17-6251B	E602
DRAWN BY: CAD	APPROVED BY: MA	DATE: OCT 2019	SHEET 47 OF 50 SHTS.
SCALE: AS SHOWN			

10/28/19-11:20 X:\1001\001.640 WCC Uluwehi\001.640 E602.B02.dwg



1 E603 RESTROOM LIGHTING CONTROL SCHEMATIC SELF-CONTAINED OCCUPANCY SENSOR

NO SCALE

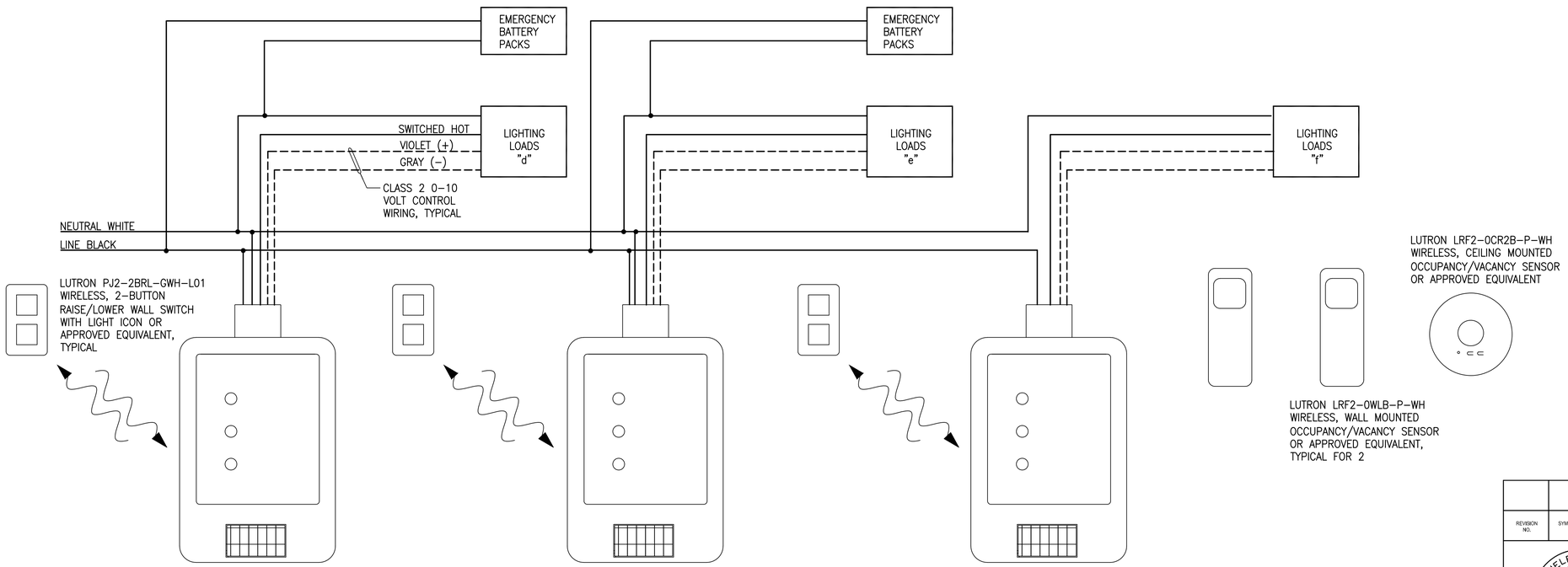


NOTE:

LUMINAIRE "a": AUTO ON/SWEEP OFF
LUMINAIRE "b": MANUAL ON/SWEEP OFF

2 E603 PRIVATE OFFICE LIGHTING CONTROL SCHEMATIC SELF-CONTAINED OCCUPANCY SENSOR

NO SCALE



3 E603 LECTURE ROOM LIGHTING CONTROL SCHEMATIC

NO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT.__ OF__	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017-E
HAWAII, U.S.A.

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PROJECT ENGINEER for ECS, Inc.

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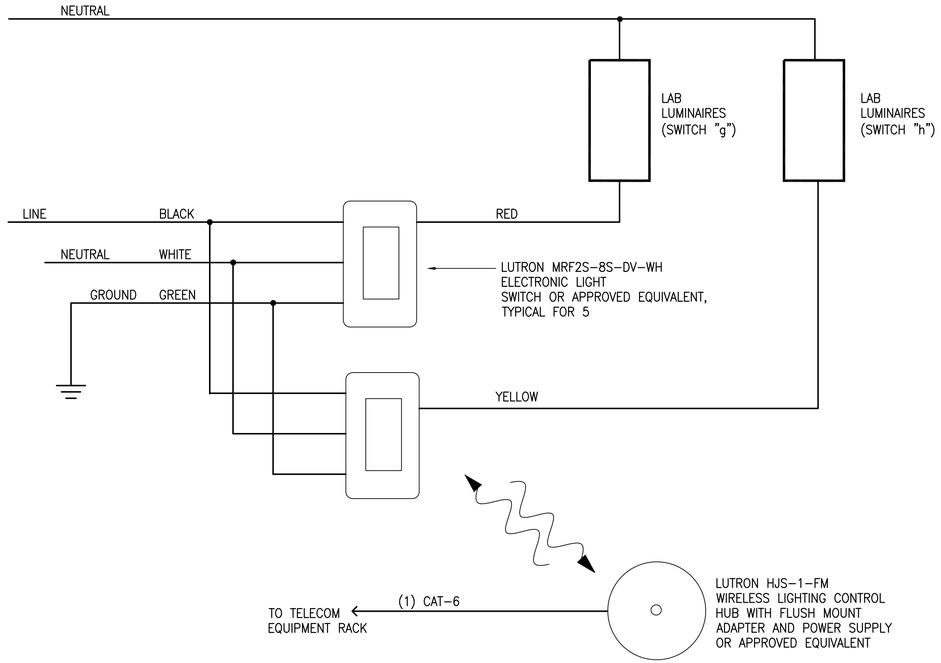
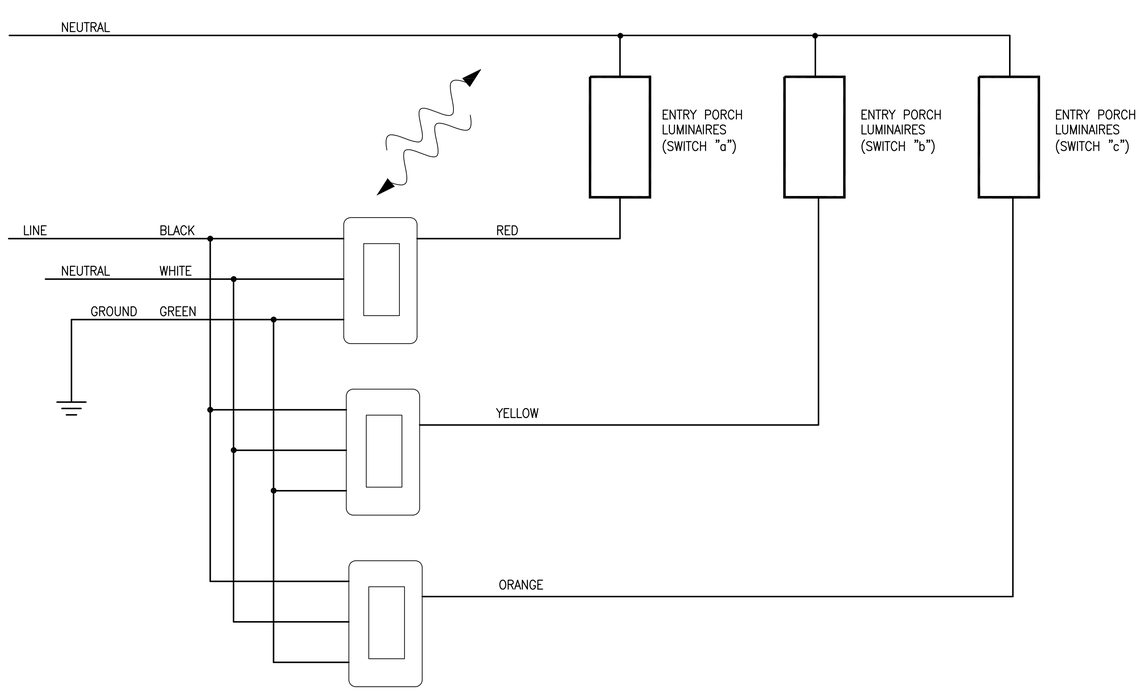
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

LIGHTING CONTROL DIAGRAMS AND DETAILS – 1

ECS INC.		PROJECT NO.	DRAWING NO.
DESIGN BY: MA	CHECKED BY: MA	CCR-17-6251B	E603
DRAWN BY: CAD	APPROVED BY: MA	DATE: OCT 2019	SHEET: 48 OF 50 SHTS.
SCALE: AS SHOWN			

10/28/19-11:20 Y:\001\001.640 WCC Uluweh\001.640 E603.B03.dwg





1 / E604 **LAB AND ENTRY PORCH LIGHTING CONTROL SYSTEM SCHEMATIC**
NO SCALE

CONCEPTUAL SEQUENCE OF OPERATIONS FOR LAB LIGHTING LOADS:

- CAMPUS NETWORK LIGHTING CONTROL SYSTEM SHALL BE SET FOR NORMAL HOURS AND AFTER HOURS MODE. NORMAL HOURS SHALL BE 6:00 AM TO 6:00 PM. DURING THIS PERIOD MANUAL SWITCH ACTIVATION SHALL TURN CONTROL THE LABORATORY LIGHTS.
- AT THE END OF THE NORMAL HOURS PERIOD, THE LIGHTS SHALL FLASH TO WARN OCCUPANTS AND THEN TURN OFF.
- AFTER HOURS SHALL BE FROM 6:01 PM TO 5:59 AM. DURNG THIS PERIOD, MANUAL SWITCH ACTIVATION SHALL TURN ON LIGHTS ASSOCIATED WITH THAT MANUAL SWITCH FOR 2 HOURS AFTER WHICH THE LIGHTS WILL TURN OFF.

CONCEPTUAL SEQUENCE OF OPERATIONS FOR PATIO LIGHTING LOADS:

- CAMPUS NETWORK LIGHTING CONTROL SYSTEM SHALL BE SET FOR NORMAL HOURS AND AFTER HOURS MODE. NORMAL HOURS SHALL BE 7:00 AM TO 6:00 PM. DURING THIS PERIOD MANUAL SWITCH ACTIVATION SHALL TURN CONTROL THE PATIO LIGHTS.
- AT THE END OF THE NORMAL HOURS PERIOD, THE LIGHTS ASSIGNED TO SWITCHES "a" AND "b" SHALL FLASH TO WARN OCCUPANTS AND THEN TURN OFF.
- AFTER HOURS SHALL BE FROM 6:01 PM TO 6:59 AM. DURNG THIS PERIOD, MANUAL SWITCH ACTIVATION SHALL TURN ON LIGHTS ASSOCIATED WITH MANUAL SWITCHES "a" AND "b" FOR 2 HOURS AFTER WHICH THE LIGHTS WILL TURN OFF.
- AFTER HOURS MODE FOR LIGHTS ASSOCIATED WITH MANUAL SWITCH "c" SHALL BE TIME-BASED CONTROLLED WITH TURN ON AT 6:00 PM AND TURN OFF AT 7:00 AM.

REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO LICENSED PROFESSIONAL ENGINEER No. 10017-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2020
EXPIRATION DATE OF THE LICENSE

UNIVERSITY OF HAWAII
STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE
5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

LIGHTING CONTROL DIAGRAMS AND DETAILS – 2

ECS INC.		PROJECT NO. CCR-17-6251B	DRAWING NO. E604
DESIGN BY: MA	CHECKED BY: MA		
DRAWN BY: CAD	APPROVED BY: MA	DATE OCT 2019	SHEET 49 OF 50 SHTS.
SCALE: AS SHOWN			

PANEL 2G

208/120 VOLTS, 3 PHASE, 4 WIRE
3P100 AMP MAIN BREAKER

MIN AIC: 10,000
MOUNTING: SURFACE

WIRE SIZE (AWG)	CKT NO	USE	CKT BKR POLE	CKT BKR AMP	CONNECTED LOAD (KVA) PHASE A	PHASE B	PHASE C	CKT BKR AMP	CKT BKR POLE	USE	CKT NO	WIRE SIZE (AWG)
12	1	RCPT–ENTRY PORCH	1	20	0.6 | 4.0			50	/		2	8
12	3	RCPT–ENTRY PORCH	1	20		0.6 | 4.0		/		ACCU–1	4	8
12	5	RCPT–ENTRY PORCH	1	20			0.6 | 4.0	/	3		6	8
12	7	RCPT–OFFICE	1	20	1.2 | 0.6			15	/	FAN COIL UNITS	8	12
12	9	RCPT–OFFICE	1	20		1.2 | 0.6		/	2		10	12
12	11	RCPT–TOILETS	1	20			– | 0.8	20	1	LTS–PORCH	12	12
12	13	RCPT–CLSRM	1	20	0.8 | 1.2			20	1	LTS–OFFICE/CLSRM/LAB	14	12
12	15	RCPT–MONITOR	1	20		0.8 | 0.5		20	1	ACCESS CONTROL/DDC	16	12
12	17	RCPT–CLSRM	1	20			0.8 | 0.5	20	1	HAND DRYERS	18	12
12	19	RCPT–CLSRM	1	20	0.8 | 0.5			20	1	TELECOM RACK	20	12
12	21	RCPT–CLSRM	1	20		0.8 | 0.5		20	1	SPARE	22	12
12	23	RCPT–CLSRM	1	20			0.8 | 0.5	20	1	SPARE	24	12
12	25	RCPT–LAB	1	20	0.6 | 0.5			20	1	SPARE	26	12
12	27	RCPT–LAB	1	20		0.6 | 0.5		20	1	SPARE	28	12
12	29	RCPT–LAB	1	20			0.6 | 0.5	20	1	SPARE	30	12
12	31	RCPT–GREENHOUSE	1	20	0.6 | –			–	1	PFB	32	–
12	33	RCPT–GREENHOUSE	1	20		0.6 | –		–	1	PFB	34	–
12	35	RCPT–GREENHOUSE	1	20			0.6 | –	–	1	PFB	36	–
10	37	RCPT–GO FARM	1	20	0.8 | 2.0			30	/		38	8
10	39	RCPT–GO FARM	1	20		1.0 | 2.0		/		PANEL 2EM	40	8
10	41	RCPT–GO FARM	1	20			1.0 | 2.0	/	3		42	8
		CONNECTED LOAD/PHASE			14.2	13.7	13.7					
		TOTAL CONNECTED LOAD			41.6 KVA							
		DEMAND FACTOR			0.7							
		TOTAL DEMAND LOAD			29.1 KVA=	81 AMPS						

PANEL 2EM

208/120 VOLTS, 3 PHASE, 4 WIRE
3P30 AMP MAIN BREAKER

MIN AIC: 10,000
MOUNTING: SURFACE

WIRE SIZE (AWG)	CKT NO	USE	CKT BKR POLE	CKT BKR AMP	CONNECTED LOAD (KVA) PHASE A	PHASE B	PHASE C	CKT BKR AMP	CKT BKR POLE	USE	CKT NO	WIRE SIZE (AWG)
12	1	RCPT–BLOWER	1	20	0.7 | –			–	1	PFB	2	–
12	3	RCPT–BLOWER	1	20		0.7 | –		–	1	PFB	4	–
12	5	RCPT–BLOWER	1	20			0.7 | –	–	1	PFB	6	–
12	7	BATTERY CHARGER	1	20	0.5 | –			–	1	PFB	8	–
12	9	REMOTE PWR MONITOR	1	20		0.5 | –		–	1	PFB	10	–
–	11	SPARE	1	20			0,5 | –	–	1	PFB	12	–
		CONNECTED LOAD/PHASE			1.2	1.2	1.2					
		TOTAL CONNECTED LOAD			3.6 KVA							
		DEMAND FACTOR			0.8							
		TOTAL DEMAND LOAD			2.9 KVA=	8 AMPS						

REVISION NO.	SYM.	DESCRIPTION	SHT.___ OF___	DATE	APPROVED: FACILITIES PLANNING & CONSTRUCTION

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017–E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2020
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STATE OF HAWAII

WINDWARD COMMUNITY COLLEGE

5986A & 5986B HALE ULUWEHI
Agriculture Facility and Greenhouse Renovation

PANEL SCHEDULES

ECS INC.

DESIGN BY:	CHECKED BY:	PROJECT NO.	DRAWING NO.
MA	MA	CCR–17–6251B	E701
DRAWN BY: CAD	APPROVED BY: MA	DATE: OCT 2019	SHEET 50 OF 50 SHTS.
SCALE: AS SHOWN			

10/28/19–11:20 X:\001\001.640 WCC Uluwehi\001.640 E701.PNL01.dwg