ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	COMPRESSED AIR	MBH	THOUSANDS BTU PER HOUR
ABV	ABOVE	MECH	MECHANICAL
AC	AIR CURTAIN	MFR	MANUFACTURER
ACCU	AIR COOLED CONDENSING UNIT	MIN	MINIMUM OR MINUTES
ACU	AIR CONDENSING UNIT	MISC	MISCELLANEOUS
AFF	ABOVE FINISH FLOOR	MTD	MOUNTED
ARCH	ARCHITECT/ARCHITECTURAL	MTG	MOUNTING
AWT	AVERAGE WATER TEMPERATURE	N/A	NOT APPLICABLE
BDD	BACKDRAFT DAMPER	NC	NORMALLY CLOSED
BFP	BACKFLOW PREVENTER	N.I.C.	NOT IN CONTRACT
BLDG	BUILDING	NO	NORMALLY OPEN
BTU	BRITISH THERMAL UNIT	NTS	NOT TO SCALE
BTUH	BRITISH THERMAL UNIT PER HOUR	OA	OUTSIDE AIR/ OVERLOAD AMPS
BV	BALANCING VALVE	O/C	ON CENTER
CD	CEILING DIFFUSER/ CONDENSATE	OD	OUTSIDE DIAMETER
CF	CIRCULATING FAN	OPER	OPERATING
CFM	CUBIC FEET PER MINUTE	OPNG	OPENING
CG	CEILING GRILLE	PACU	PACKAGED AIR CONDITIONING UNIT
CLG	CEILING	PIM	PRESSURE INDEPENDENT MODULE
CO	CLEANOUT	PRV	PRESSURE REDUCING VALVE
CONC	CONCRETE	PSI	POUNDS PER SQUARE INCH
COND	CONDENSER	PSIG	POUNDS PER SQUARE INCH GAUGE
CONN	CONNECT OR CONNECTION	PT	PRESSURE/TEMPERATURE
CONT	CONTINUATION	RA	RETURN AIR
DB	DRY BULB	RAG	RETURN AIR GRILLE
Ø	DIAMETER OR PHASE	REF	REFRIGERANT
DIA	DIAMETER	REQD	REQUIRED
DN	DOWN	REV	REVISION(S)
DWG	DRAWING	R.O.	ROUGH OPENING
(E)	EXISTING	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
EA	EACH/ EXHAUST AIR	RPM	REVOLUTION PER MINUTE
EAT	ENTERING AIR TEMPERATURE	SA	SUPPLY AIR
EDB	ENTERING DRY BULB	SD	SMOKE DETECTOR
EER	ENERGY EFFICIENCY RATIO	SEER	SEASONAL ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN	SF	SUPPLY FAN
EFF	EFFICIENCY	SHT	SHEET
EG	EXHAUST GRILLE	SP	STATIC PRESSURE
ELEC	ELECTRIC OR ELECTRICAL	SQ FT	SQUARE FOOT/FEET
EQUIP	EQUIPMENT	SS	STAINLESS STEEL
ESP	EXTERNAL STATIC PRESSURE	SST	SATURATED SUCTION TEMPERATURE
EU	EVAPORATOR UNIT	STD	STANDARD
EWB	ENTERING WET BULB	TAB	TEST, ADJUST & BALANCE
EWT	ENTERING WATER TEMPERATURE	TAF	TRANSFER AIR FAN
EXH	EXHAUST	THK	THICK
EXIST	EXISTING	TSP	TOTAL STATIC PRESSURE
FCU	FAN COIL UNIT	TSTAT	THERMOSTAT
FF	FINISH FLOOR	TU	TERMINAL UNIT
FLA	FULL LOAD AMPS	TYP	TYPICAL
FLR	FLOOR	UBC	UNIFORM BUILDING CODE
FPM	FEET PER MINUTE	UFC	UNIFORM FIRE CODE
FPS	FEET PER SECOND	UMC	UNIFORM MECHANICAL CODE
FSD	FIRE SMOKE DAMPER	V	VENT OR VOLTS
GAL	GALLONS	VAC	VACUUM
GALV	GALVANIZED	VAD	VARIABLE AIR DIFFUSER
GPH	GALLONS PER HOUR	VAV	VARIABLE AIR VOLUME
GPM	GALLONS PER MINUTE	VD	VOLUME DAMPER
HB	HOSE BIBB	VFD	VARIABLE FREQUENCY DRIVE
HP	HORSEPOWER	W/	WITH
HS	HOSE STATION	W/O	WITHOUT
HX	HEAT EXCHANGER	WB	WET BULB
HZ	HERTZ	WG	WATER GAGE
IN	INCH OR INCHES	WH	WATER HEATER
KW	KILOWATT	WPD	WATER PRESSURE DROP
KWH	KILOWATT HOUR	WT	WEIGHT
LAT	LEAVING AIR TEMPERATURE		
LBS	POUNDS		
LDB	LEAVING DRY BULB		
LWB	LEAVING WET BULB		
LWT	LEAVING WATER TEMPERATURE		
MAX	MAXIMUM		

MECHANICAL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
—CA—	COMPRESSED AIR	18x12	DUCT SIZE IN INCHES FIRST SIZE LISTED IS SIDE SHOWN
—CD—	CONDENSATE DRAIN		SUPPLY DUCT TURNED UP
	PIPE DOWN		RETURN DUCT TURNED UP
	PIPE UP		EXHAUST DUCT TURNED UP
	DOWN IN PIPE		SUPPLY DUCT TURNED DOWN
	VALVE		RETURN DUCT TURNED DOWN
	BALL VALVE		EXHAUST DUCT TURNED DOWN
	UNION		FLEXIBLE DUCT
T	THERMOSTAT		CEILING DIFFUSER, FOUR WAY OR AS SHOWN (OPEN QUADRANT INDICATES THROW PATTERN)
	AIR FLOW (RETURN/EXHAUST)		CEILING RETURN/EXHAUST
	AIR FLOW (SUPPLY)		
SD	DUCT SMOKE DETECTOR		
	BACKDRAFT DAMPER		
M	MOTORIZED DAMPER		
	FIRE DAMPER		
	FIRE/SMOKE DAMPER		
	SMOKE DAMPER		
	VOLUME DAMPER		

GENERAL LEGEND

SYMBOL	DESCRIPTION
A / B	DETAIL SYMBOL: A = IDENTIFYING NUMBER B = SHEET WHERE DETAIL IS SHOWN
1 OR 1	KEYED REFERENCE NOTE OR SHEET NOTE
ACU-1	EQUIPMENT IDENTIFICATION (REFER TO EQUIPMENT SCHEDULE)
1	REVISION CLOUD AND REVISION NUMBER

DESIGN DEVELOPMENT NOTES

1. DESIGN DEVELOPMENT DRAWINGS ARE COMPLETED UP TO 60% AND ARE NOT INTENDED FOR PERMIT OR CONSTRUCTION.
2. EXCLUDED FROM THIS DRAWING SET ARE CONTROLS AND PIPING DIAGRAMS.
3. SIZING CAPACITIES, LAYOUT, AND QUANTITIES OF EQUIPMENT, DUCTWORK, PIPING, AND APPURTENANCES ARE SUBJECT TO CHANGE BASED ON PROJECT LOCATION, OWNER COMMENTS, AND ARCHITECTURAL REVISIONS TO THE BUILDING.

FIRE SAFETY NOTES

10.8.1.1 AS NECESSARY DURING EMERGENCIES, MAINTENANCE, DRILLS, PRESCRIBED TESTING, ALTERATIONS, OR RENOVATIONS, PORTABLE OR FIXED FIRE EXTINGUISHING SYSTEM OR DEVICE OR ANY FIRE-WARNING SYSTEMS SHALL BE PERMITTED TO BE MADE INOPERATIVE OR INACCESSIBLE. A FIRE WATCH SHALL BE REQUIRED AS SPECIFIED IN SECTIONS 13.3.4.3.5.2(3), 13.7.1.4.4, 16.5.4, 20.2.3.6, 34.6.3.3, 41.2.2.5, 41.2.2.6, 41.2.4, 41.3.4, 41.4.1, 34.5.4.3, AND 25.1.8 AT NO COST TO THE AUTHORITY HAVING JURISDICTION.

16.1 GENERAL REQUIREMENTS.

16.1.1 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 THIS CHAPTER.

16.1.2 A FIRE PROTECTION PLAN SHALL BE ESTABLISHED WHERE REQUIRED BY THE AHJ.

16.1.3 IN BUILDINGS UNDER CONSTRUCTION, ADEQUATE ESCAPE FACILITIES SHALL BE MAINTAINED AT ALL TIMES FOR THE USE OF CONSTRUCTION WORKERS. ESCAPE FACILITIES SHALL CONSIST OF DOORS, WALKWAYS, STAIRS, RAMPS, FIRE ESCAPES, LADDERS, OR OTHER APPROVED MEANS OR DEVICES ARRANGED IN ACCORDANCE WITH THE GENERAL PRINCIPLES OF CHAPTER 14 AND NFPA 101, LIFE SAFETY CODE, INSOFAR AS THEY CAN REASONABLY BE APPLIED TO BUILDINGS UNDER CONSTRUCTION. [101:4.6.10.2]

16.1.4 FIRE DEPARTMENT ACCESS ROADS PROVIDED IN ACCORDANCE WITH 18.2.3 SHALL BE PROVIDED AT THE START OF A PROJECT AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

16.4.3 FIRE PROTECTION DURING CONSTRUCTION

16.4.3.1 WATER SUPPLY

16.4.3.1.1 A WATER SUPPLY FOR FIRE PROTECTION, EITHER TEMPORARY OR PERMANENT, SHALL BE MADE AVAILABLE AS SOON AS COMBUSTIBLE MATERIAL ACCUMULATES AND BE MAINTAINED OPERATIONAL AT ALL TIMES DURING ALTERATION.

16.4.4.1 WHERE BUILDING IS PROTECTED BY FIRE-PROTECTION SYSTEMS, SUCH SYSTEMS SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES DURING ALTERATION.

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

16.4.4.3 WHEN IT IS NECESSARY TO SHUT DOWN THE SYSTEM, THE AUTHORITY HAVING JURISDICTION SHALL HAVE THE AUTHORITY TO REQUIRE ALTERNATE MEASURES OF PROTECTION UNTIL THE SYSTEM IS RETURNED TO SERVICE.

16.4.4.4 THE FIRE DEPARTMENT SHALL BE NOTIFIED WHEN THE SYSTEM IS SHUT DOWN AND WHEN THE SYSTEM IS RETURNED TO SERVICE.

AC&V NOTES

1. EQUIPMENT, DUCTWORK AND PIPING SHOWN INDICATES GENERAL LAYOUT REQUIREMENTS. SHOP DRAWINGS SHALL INDICATE SERVICE/ ACCESS SPACE REQUIREMENTS, ADDITIONAL OFFSETS, DROPS, RISES, ETC., REQUIRED TO FIT AVAILABLE SPACE AND AVOID LOCAL OBSTRUCTIONS. MECHANICAL CONTRACTOR SHALL COORDINATE WITH PLUMBING CONTRACTOR, FIRE SPRINKLER CONTRACTOR, AND ELECTRICAL CONTRACTOR AND OFFSET HIS DUCTWORK AND PIPING TO FIT WORK FROM ALL DISCIPLINES IN SPACE AVAILABLE.
2. FLEXIBLE CONNECTION SHALL BE PROVIDED BETWEEN DUCTWORK AND AIR HANDLING UNITS, FAN COIL UNITS, SUPPLY AND EXHAUST FANS, AND OTHER SIMILAR AIR MOVING EQUIPMENT.
3. LARGE DUCTS (OVER 30" IN ONE DIMENSION) SHALL BE REINFORCED WITH GALVANIZED ANGLE IRONS ON ALL SIDES TO PREVENT LOW RUMBLE VIBRATION PER SMACNA "DUCT CONSTRUCTION STANDARDS."
4. ALL DUCT DIMENSIONS ARE INSIDE DIMENSIONS: LAYOUTS AND INSTALLATION SHALL ACCOUNT FOR DUCT WRAP THICKNESS OR LINER INSULATION THICKNESS, SEE SPECS.
5. TURNING VANES AND EXTRACTORS SHALL BE INSTALLED IN ALL CHANGES IN DIRECTION OF AIR FLOW.
6. SPLITTER DAMPERS SHALL BE INSTALLED IN DUCT TEES WHERE BRANCH DUCTS DO NOT HAVE THE SAME AIR FLOW CAPACITIES. VOLUME DAMPERS SHALL BE PROVIDED TO BALANCE AIR IN ALL DUCT BRANCHES IN ACCORDANCE WITH ENERGY CONSERVATION CODE.
7. PROVIDE FIRE DAMPERS AND/OR FIRE/SMOKE DAMPERS FOR ALL FLOOR PENETRATIONS OR PENETRATIONS THROUGH FIRE-RATED WALLS PER INTERNATIONAL BUILDING CODE REQUIREMENTS. FIRE DAMPERS SHALL BE 90% OUT OF AIR STREAM. PROVIDE DUCT ACCESS PANELS FOR FIRE DAMPERS AND FIRE/SMOKE DAMPERS WHERE REQUIRED.
8. FIRE DAMPERS SHALL BE INSULATED WHEN LOCATED IN INSULATED SUPPLY AND RETURN AIR DUCTS. INSULATION SHALL BE IN ACCORDANCE WITH SMACNA. FIRE DAMPERS SHALL NOT BE INSULATED WHEN INSTALLED IN NON-INSULATED DUCTWORK.
9. PROVIDE DUCTWORK REDUCER FITTINGS AT AIR DEVICE CONNECTIONS AS REQUIRED.
10. ENTIRE HVAC SYSTEM SHALL HAVE SEISMIC RESTRAINTS INCLUDING HANGERS, VIBRATION ISOLATION, AND FLEXIBLE CONNECTIONS. REFER TO VIBRATION ISOLATION SCHEDULES AND DETAILS.
11. ALL CONTROL WIRING SHALL BE PLACED IN CONDUIT AND SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE. NO EMT ALLOWED FOR CONDUIT EXPOSED TO WEATHER.
12. WHERE AIRFLOWS ARE INDICATED TO EXISTING AND/OR NEW AIR DEVICES ON THE PLANS, THEY SHALL BE BALANCED TO THE AIRFLOWS INDICATED.
13. AIR CONDITIONING CONTRACTOR SHALL INSULATE ALL PIPING THAT COLLECTS CONDENSATE INCLUDING WASTE PIPE, ETC., FROM POINT OF CONNECTION TO TOP OF CONCRETE FLOOR SLAB ON GRADE. INSULATE FLOOR DRAIN, FLOOR SINK, AND/OR ROOF DRAIN BODIES EXPOSED TO AIR BELOW THE SLAB.
14. ALL AIR CONDITIONING SUPPLY AND RETURN AIR DUCTS SHALL BE INSULATED WITH 1-1/2" THICK FIBERGLASS INSULATION WITH VAPOR BARRIER JACKET.
15. RETURN AIR REGISTERS SHALL BE SURFACE MOUNTED, TITUS 310/350 FL OR APPROVED EQUAL.
16. ALL REFRIGERANT SHALL BE RECLAIMED AND RECYCLED AS PER CURRENT EPA LAWS AND REGULATIONS.

GENERAL NOTES

1. CONFORM TO ALL REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE (IBC), UNIFORM PLUMBING CODE, UNIFORM FIRE CODE, NATIONAL ELECTRIC CODE, ENERGY CONSERVATION CODE, THE LATEST CITY & COUNTY OF HONOLULU/STATE OF HAWAII AMENDMENTS AND ORDINANCES, AND ALL OTHER AGENCIES HAVING JURISDICTION. THE AIR CONDITIONING AND VENTILATION SYSTEMS SHALL COMPLY WITH TITLE 11, ADMINISTRATIVE RULES DEPT. OF HEALTH, CHAPTER 39 - AIR CONDITIONING AND VENTILATION REQUIREMENTS. COMPLY WITH ALL EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND OTHER APPLICABLE REGULATIONS.
2. WORK SHALL CONFORM TO ALL APPLICABLE CODES AND STANDARDS UNLESS CONTRACT DOCUMENTS ARE MORE STRINGENT.
3. ALL WORK SHOWN ON THESE DRAWINGS ARE NEW UNLESS OTHERWISE NOTED.
4. EXISTING CONDITIONS AND DIMENSIONS SHOWN ON THESE DRAWINGS ARE APPROXIMATE. BIDDERS SHALL VISIT THE PREMISES AND THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL DETAILS OF WORK AND WORKING CONDITIONS BEFORE SUBMITTING THEIR BID. REASONABLE MODIFICATIONS IN LOCATION AND ARRANGEMENTS TO SUIT JOB CONDITIONS SHALL NOT CONSTITUTE BASIS FOR REQUESTING OF ADDITIONAL FUNDS FROM THE OWNER.
5. PRIOR TO ORDERING MATERIALS AND PROCURING EQUIPMENT, SUCCESSFUL BIDDER (CONTRACTOR) SHALL BE REQUIRED TO VERIFY ALL CONDITIONS, INCLUDING BUT NOT LIMITED TO EQUIPMENT, MATERIALS, SIZES, DIMENSIONS, INVERTS, AND VOLTAGES THAT AFFECT HIS WORK. SUBMIT A LETTER TO THE ENGINEER CONFIRMING THAT THIS WAS DONE. IF WRITTEN CONFIRMATION IS NOT RECEIVED BY THE ENGINEER, SHOP DRAWINGS AND OTHER SUBMITTALS WILL BE RETURNED WITHOUT REVIEW. SHOW ALL DISCREPANCIES ON SHOP DRAWINGS AND NOTIFY THE ENGINEER IN WRITING OF SUCH DISCREPANCIES PRIOR TO PROCUREMENT.
6. REMOVE ALL UNUSED PIPING AND DUCTWORK UNLESS SPECIFICALLY INDICATED AS "ABANDON IN PLACE." ALL ABANDONED PIPING AND DUCTWORK SHALL BE CAPPED AT BOTH ENDS.
7. ALL UTILITIES AND APPURTENANCES SHALL BE PROTECTED AT ALL TIMES DURING CONSTRUCTION, AND IF DAMAGED, SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO OWNER.
8. ALL FASTENERS, SUPPORTS, HANGERS, SPRING ISOLATORS, AND MISCELLANEOUS STEEL ITEMS INCLUDING BUT NOT LIMITED TO BOLTS, NUTS, SCREWS, RODS, PLATES, AND ANGLES, ETC. SHALL BE GALVANIZED UNLESS OTHERWISE NOTED OR SPECIFIED.
9. REFER TO PROJECT MANUAL (SPECIFICATIONS) FOR ADDITIONAL REQUIREMENTS. PLANS AND SPECIFICATIONS SHALL BE TAKEN TOGETHER. PROVIDE ALL WORK CALLED FOR IN EITHER.
10. FURNISH ALL EQUIPMENT, MATERIALS, LABOR, TOOLS, ETC., REQUIRED FOR THE INSTALLATION OF THE COMPLETE AND OPERATING SYSTEM. ALL EQUIPMENT AND MATERIALS SHALL BE NEW UNLESS OTHERWISE NOTED.
11. DO NOT ALLOW ANY WORK TO BE COVERED UP OR ENCLOSED UNTIL INSPECTED, TESTED AND APPROVED BY OWNER'S REPRESENTATIVE OR AUTHORITY HAVING JURISDICTION.
12. THIS CONTRACT REQUIRES THE PLUMBING, FIRE PROTECTION, EMCS, AND MECHANICAL SUBCONTRACTORS TO CAREFULLY COORDINATE THEIR WORK WITH EACH OTHER, THE GENERAL CONTRACTOR AND OTHER TRADES. PRIORITY SHALL BE GIVEN IN THE FOLLOWING ORDER:

    A. GRAVITY FLOW; SEWER, STORM DRAIN, DOWNSPOUT AND CONDENSATE DRAIN PIPING.

    B. EQUIPMENT AND DUCTWORK.

    C. FORCED AND PRESSURE PIPING SUCH AS WATER, FIRE SPRINKLER, AND GAS PIPING.
13. PROVIDE ACCESS PANELS IN NON-ACCESSIBLE CEILINGS FOR MECHANICAL ITEMS REQUIRING SERVICING AND MAINTENANCE SUCH AS, BUT NOT LIMITED TO VOLUME DAMPERS, FIRE/SMOKE DAMPERS, FIRE DAMPERS, CONDENSATE DRAINS, VALVES, ETC. PROVIDE FIRE-RATED ACCESS PANELS WHERE REQUIRED. COORDINATE TYPE OF ACCESS PANEL WITH WALL OR CEILING CONTRACTOR. ACCESS PANELS SHALL BE 30"x30" MINIMUM UNLESS OTHERWISE NOTED.
14. CONTRACTOR SHALL PROVIDE DIELECTRIC UNIONS, NIPPLES OR FLANGES AT CONNECTION POINTS FOR ALL DISSIMILAR METALS.
15. DRAWINGS ARE DIAGRAMMATIC AND MAY NOT SHOW ALL OFFSETS IN PIPING. COORDINATE THIS WORK WITH THE WORK OF OTHER TRADES AND PROVIDE ALL NECESSARY OFFSETS.
16. ALL PENETRATIONS OF REQUIRED FIRE-RATED WALLS, PARTITIONS, AND FLOORS SHALL BE PROVIDED WITH FIRE STOPPING MATERIAL PER IBC.
17. ALL PENETRATIONS OF REQUIRED FIRE-RATED WALLS, PARTITIONS, AND FLOORS SHALL BE PROVIDED WITH FIRE STOPPING MATERIAL AS REQUIRED AND IN ACCORDANCE WITH ASTM E 814, FM P7825, AND UL 1479.
18. NO CUTTING OR DRILLING OF ANY STRUCTURAL MEMBERS WILL BE PERMITTED WITHOUT THE APPROVAL OF THE ARCHITECT.
19. INSTALL ALL PIPING AS HIGH AS POSSIBLE IN CEILING PLENUM TO ALLOW FOR FUTURE WORK.
20. PAINT ALL EXPOSED PIPING AND/OR DUCTWORK TO MATCH SURROUNDING COLOR. PROVIDE ESCUTCHEONS WHERE EXPOSED PIPING PENETRATES FINISHED WALLS AND CEILINGS. PROVIDE PAINTED TRIM WHERE EXPOSED DUCTWORK PENETRATES FINISHED WALLS AND CEILINGS.
21. INSTALLATION SHALL BE GUARANTEED TO BE FREE OF DEFECTS FOR ONE (1) YEAR FROM FINAL DATE OF ACCEPTANCE OF THE PROJECT AS A WHOLE.

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY

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

FOR PLANNING PURPOSES ONLY

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

EXPIRATION DATE OF THE LICENSE XX/XX/XXXX

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
MECHANICAL LEGEND, ABBREVIATIONS, AND NOTES

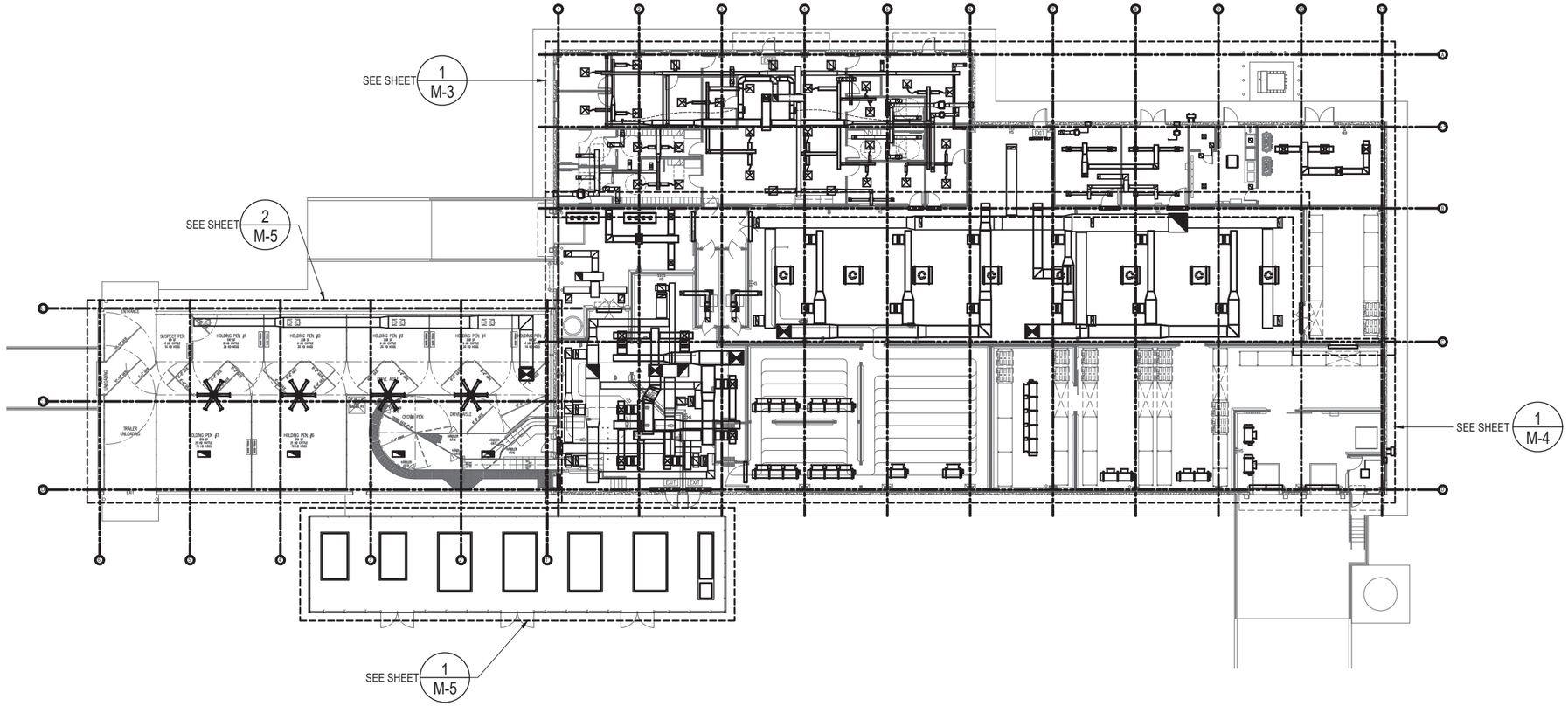
DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE:

APPROVED:

CHIEF ENGINEER _____ DATE

DRAWING NO. M-1

~~60% DESIGN DRAWING SET NOT FOR CONSTRUCTION~~
SELECTED SITE MAY ALTER DESIGN



1 M-2 OVERALL MECHANICAL PLAN
1/16" = 1'-0"

GRAPHIC SCALE
8' 0 20' 40'
1/16"=1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

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STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

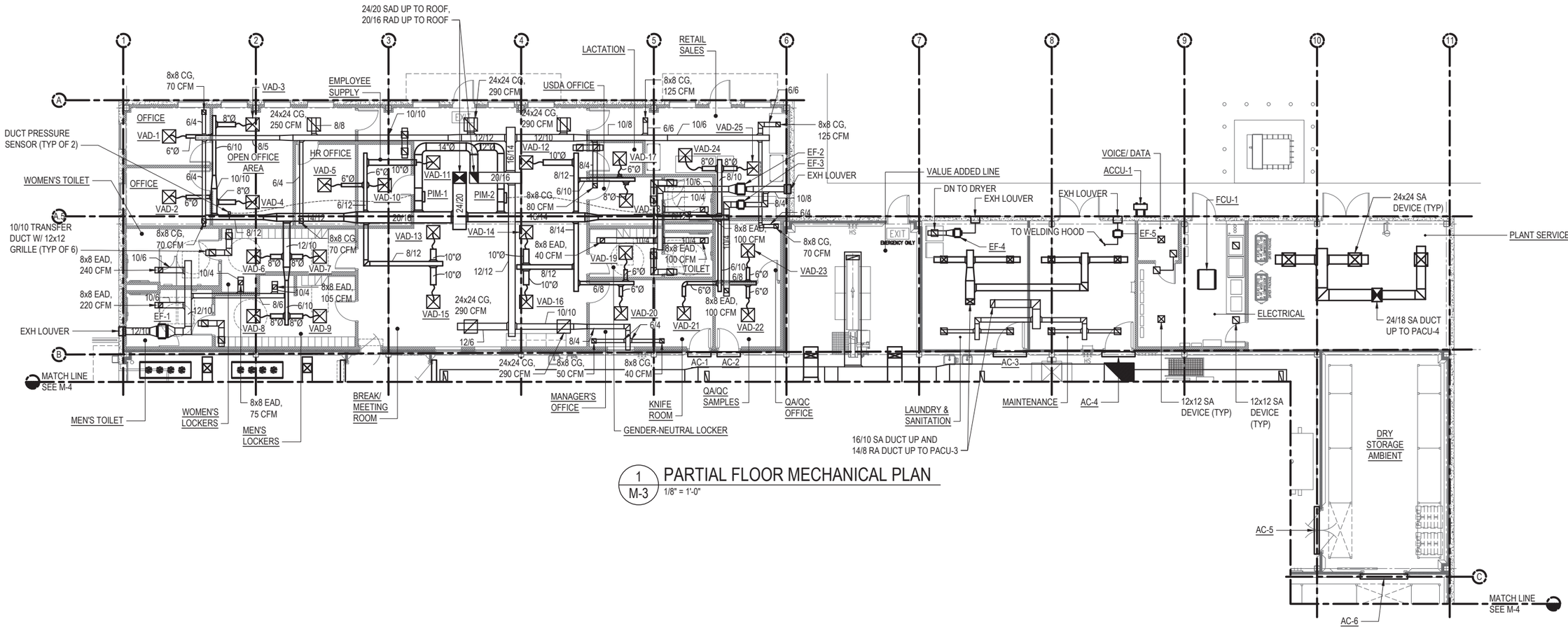
SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
OVERALL MECHANICAL PLAN

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE: 1/16" = 1'-0"

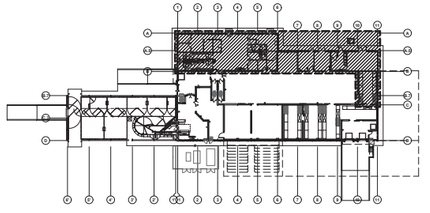
APPROVED:
CHIEF ENGINEER DATE

DRAWING NO. M-2



1 M-3 PARTIAL FLOOR MECHANICAL PLAN

1/8" = 1'-0"



KEYPLAN

NOT TO SCALE

GRAPHIC SCALE

4' 0 10' 20'

1/8"=1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

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STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
PARTIAL FLOOR MECHANICAL PLAN

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE:

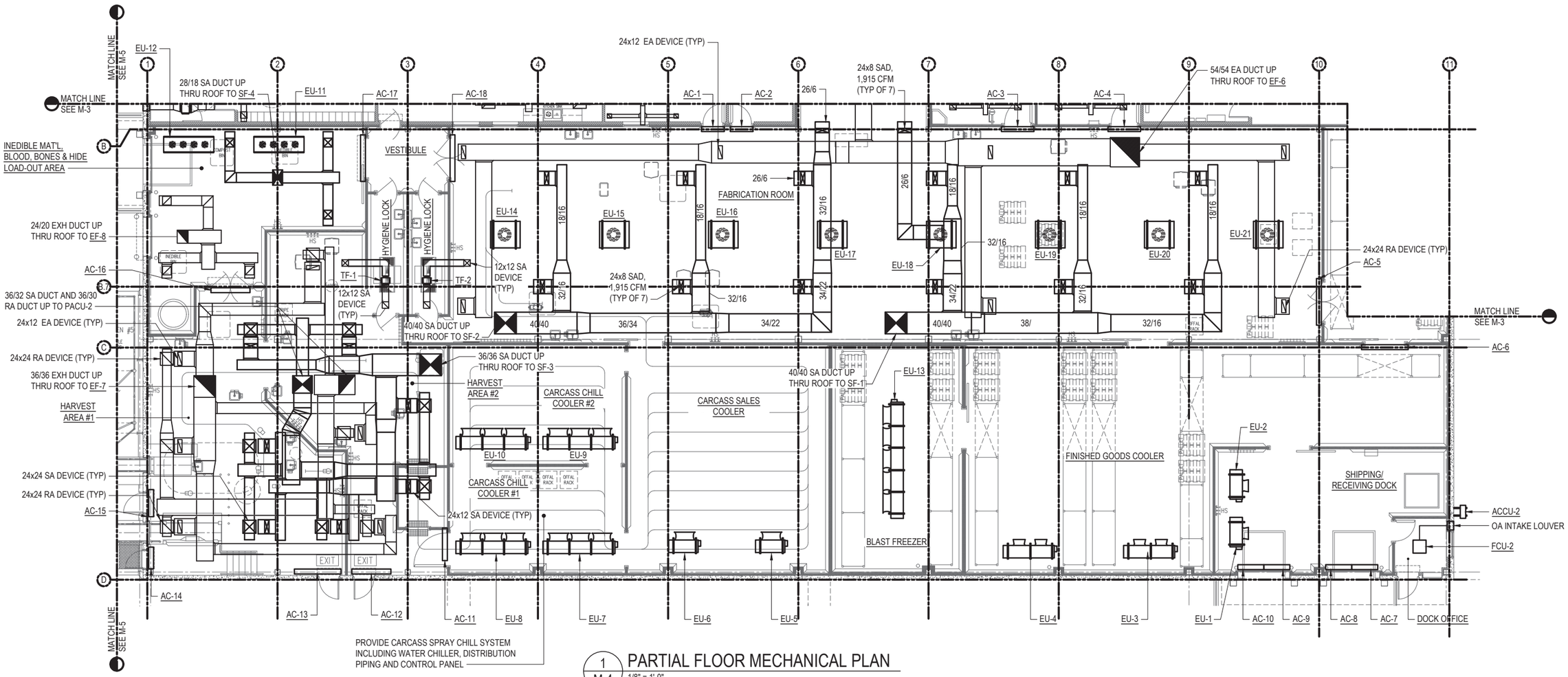
APPROVED:

CHIEF ENGINEER DATE

DRAWING NO. M-3

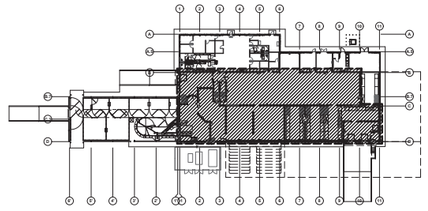
SHEET NO. 59 OF 106 SHEETS

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY



1 / M-4 PARTIAL FLOOR MECHANICAL PLAN

1/8" = 1'-0"



KEYPLAN

NOT TO SCALE

GRAPHIC SCALE

4' 0 10' 20'

1/8"=1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

FOR PLANNING PURPOSES ONLY

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

EXPIRATION DATE OF THE LICENSE XX/XX/XXXX

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
PARTIAL FLOOR MECHANICAL PLAN

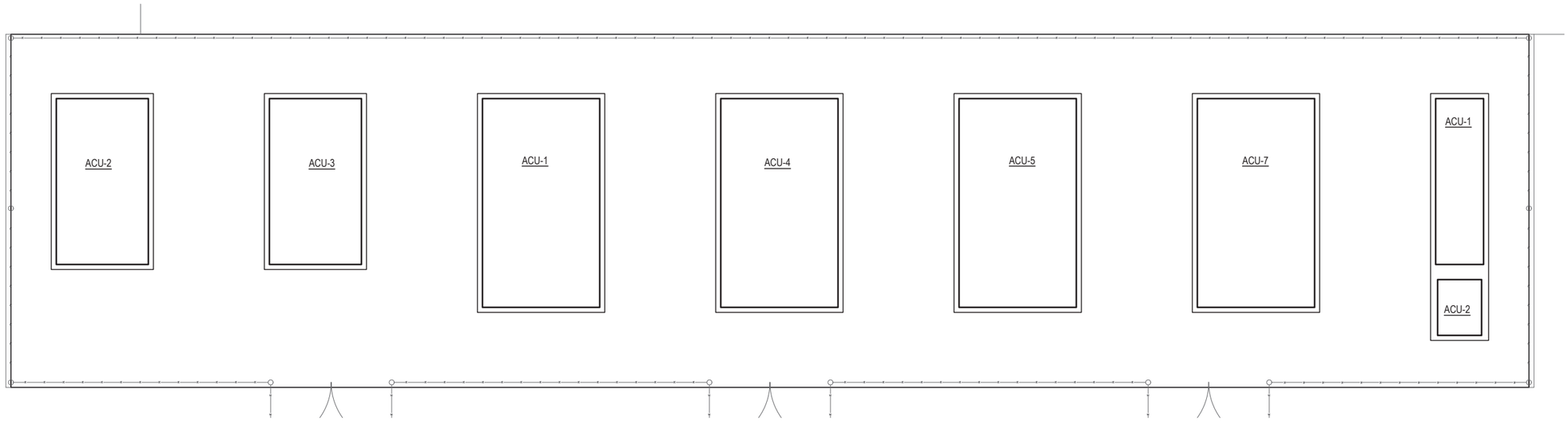
DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE:

APPROVED:

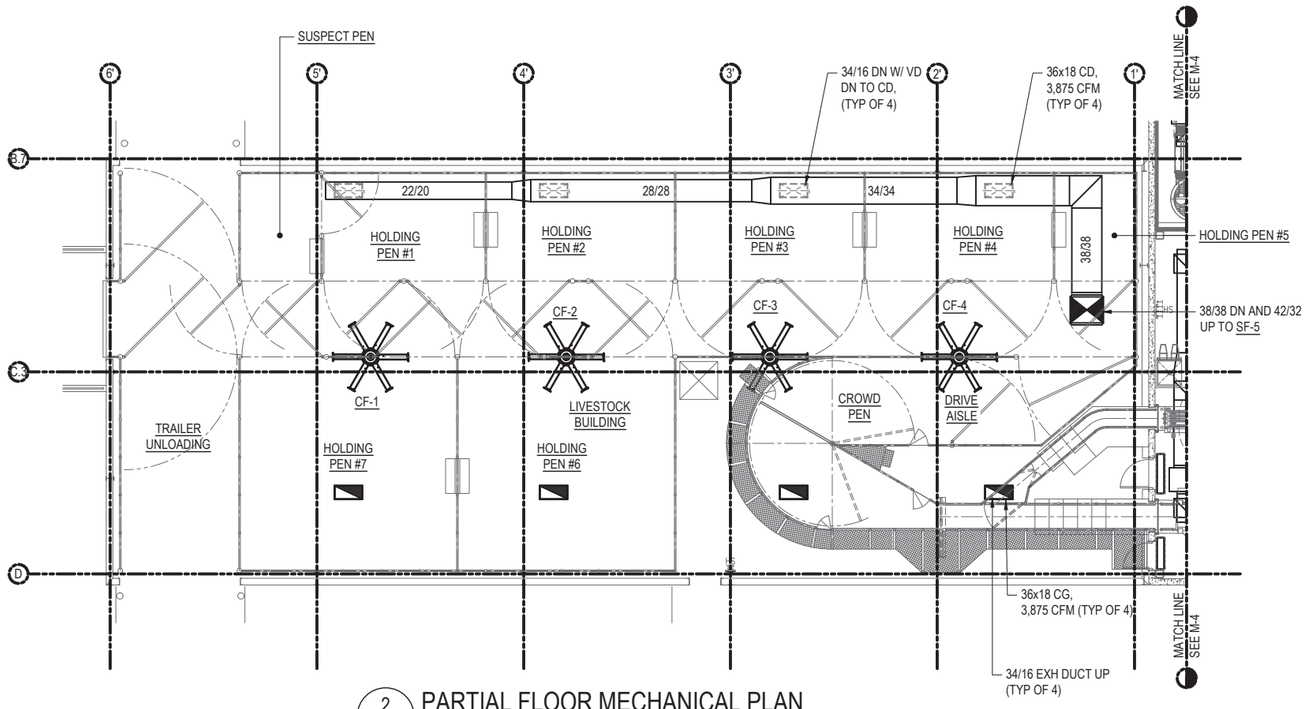
CHIEF ENGINEER DATE

DRAWING NO. M-4

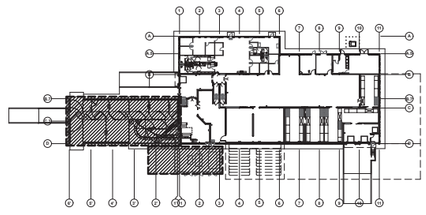
SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY



1 / M-5 PARTIAL FLOOR MECHANICAL PLAN
1/4" = 1'-0"



2 / M-5 PARTIAL FLOOR MECHANICAL PLAN
1/8" = 1'-0"



KEYPLAN
NOT TO SCALE

GRAPHIC SCALE
2' 0 5' 10'
1/4"=1'-0"

GRAPHIC SCALE
4' 0 10' 20'
1/8"=1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

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STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
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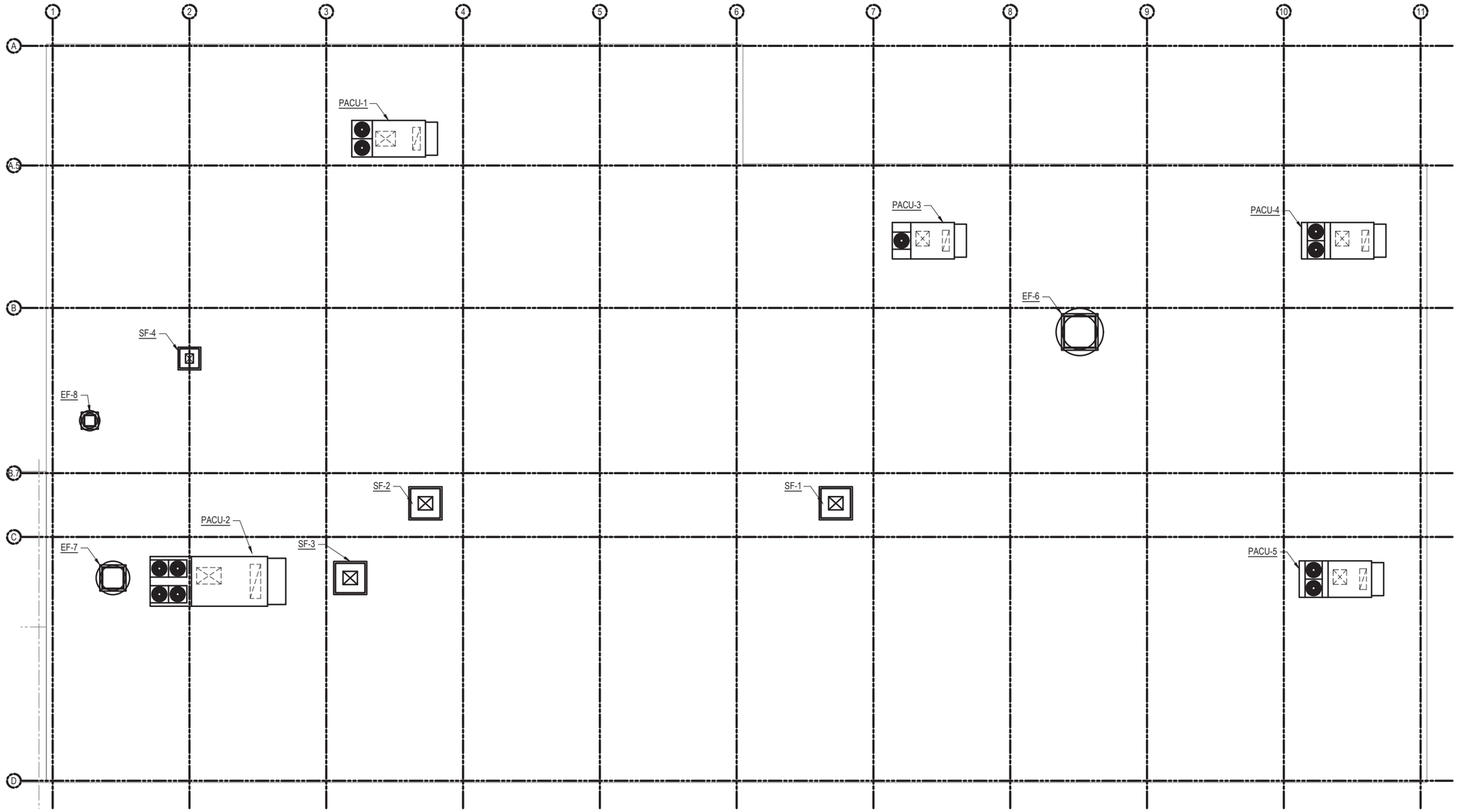
SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
PARTIAL FLOOR MECHANICAL PLAN

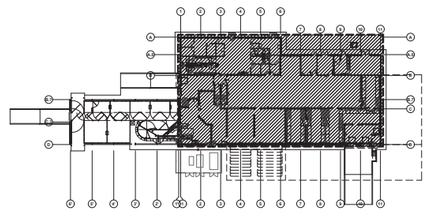
DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE:

APPROVED:
CHIEF ENGINEER DATE

DRAWING NO. M-5



1 / M-6 MECHANICAL ROOF PLAN
1/8" = 1'-0"



KEYPLAN
NOT TO SCALE

GRAPHIC SCALE
4' 0 10' 20'
1/8"=1'-0"

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STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

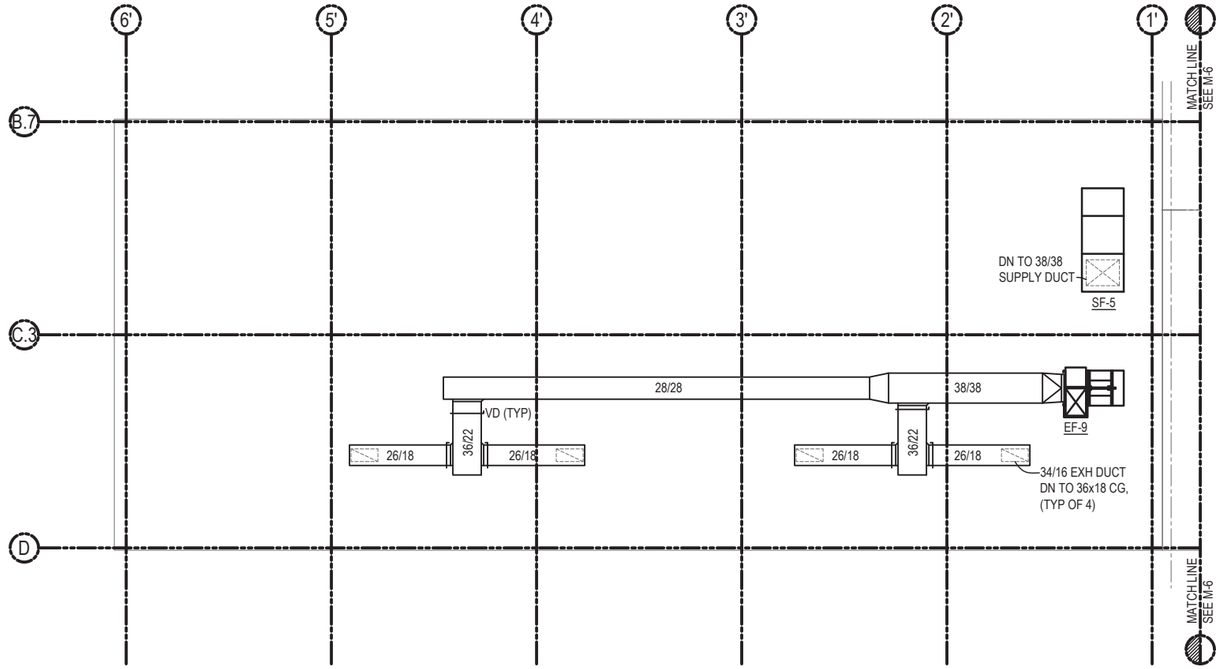
SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
MECHANICAL ROOF PLAN

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE:

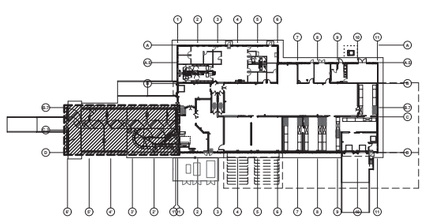
APPROVED:
CHIEF ENGINEER DATE

DRAWING NO. M-6



1 / M-7 LIVESTOCK BLDG MECHANICAL ROOF PLAN

1/8" = 1'-0"



KEYPLAN

NOT TO SCALE

GRAPHIC SCALE

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AGRICULTURAL RESOURCE MANAGEMENT DIVISION

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PROJECT NO. DOASW07

SHEET TITLE
LIVESTOCK BLDG MECHANICAL ROOF PLAN

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE:

APPROVED:

CHIEF ENGINEER DATE

DRAWING NO. M-7

PACKAGED AIR CONDITIONING UNIT - PACU (PRELIMINARY)

MARK NO.	LOCATION	SYSTEM TYPE	FAN				COOLING COIL								MOTOR		UNIT WEIGHT (LBS)	REMARKS
			SA (CFM)	RA (CFM)	OA (CFM)	ESP (WG)	EAT (°F) DB	EAT (°F) WB	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	NO. OF ROWS	COIL FACE AREA (SF)	REF	SUCTION (°F)	HP	V / Ø / HZ		
PACU-1	ROOF	REFRIGERANT	3,700	2,110	1,590	2.00	80.3	68.1	166.7	102.6	6	16.0			3.0	460 / 3 / 60	2,811	PROVIDE OUTDOOR RATED DOUBLE WALLED UNIT WITH FACTORY E-COAT COIL COATING, UV-C LIGHTS 120V/1Ø, AND WITH 2" PLEATED MERV-8 FILTERS.
PACU-2	ROOF	REFRIGERANT	8,900	8,400	500	1.50	76.2	62.1	237.3	210.8	6	53.44			15.0	460 / 3 / 60	4,200	PROVIDE OUTDOOR RATED DOUBLE WALLED UNIT WITH FACTORY E-COAT COIL COATING, UV-C LIGHTS 120V/1Ø, AND WITH 2" PLEATED MERV-8 PRE-FILTER & MERV-13 FINAL FILTERS.
PACU-3	ROOF	REFRIGERANT	840	480	360	1.00	84.9	72.0	27.6	15.3	6	13.36			1.0	460 / 3 / 60	1,710	PROVIDE OUTDOOR RATED DOUBLE WALLED UNIT WITH FACTORY E-COAT COIL COATING, UV-C LIGHTS 120V/1Ø, AND WITH 2" PLEATED MERV-8 FILTERS.
PACU-4	ROOF	REFRIGERANT	3170	0	3170	1.00	90.0	75.0	44.9	44.9	6	26.72			3.0	460 / 3 / 60	2,157	PROVIDE OUTDOOR RATED DOUBLE WALLED UNIT WITH FACTORY E-COAT COIL COATING, UV-C LIGHTS 120V/1Ø, AND WITH 2" PLEATED MERV-8 FILTERS.
PACU-5	ROOF	REFRIGERANT	1,200	0	1200	1.00	90.0	75.0	44.9	44.9	6	26.72			3.0	460 / 3 / 60	2,075	PROVIDE OUTDOOR RATED DOUBLE WALLED UNIT WITH FACTORY E-COAT COIL COATING, UV-C LIGHTS 120V/1Ø, AND WITH 2" PLEATED MERV-8 PRE-FILTER & MERV-17 FINAL FILTER IN INLINE FILTER BOX.

AIR-COOLED CONDENSING UNIT - ACCU (PRELIMINARY)

MARK NO.	LOCATION	CAPACITY (BTUH)	ENTERING AMBIENT AIR TEMP (°F)	COMPRESSOR					FAN			MOTOR		UNIT WEIGHT (LBS)	REMARKS
				NO.	V / Ø / HZ	MCA	RLA	REF	NO.	TYPE	AIR FLOW (CFM)	KW	V / Ø / HZ		
ACCU-1	OUTDOOR	9,000	90	1	230 / 1 / 60	14.0	-	R410A	1	PROPELLER	1,691	0.77	230 / 1 / 60	129	INVERTER COMPRESSOR, PROVIDE WITH DISCONNECT, NEOPRENE ISOLATORS, ALUMINUM PIGMENTED POLYUERTHANE OR APPROVED EQUAL CORROSION INHIBITING COATING.
ACCU-2	OUTDOOR	9,000	90	1	230 / 1 / 60	14.0	-	R410A	1	PROPELLER	1,691	0.77	230 / 1 / 60	129	INVERTER COMPRESSOR, PROVIDE WITH DISCONNECT, NEOPRENE ISOLATORS, ALUMINUM PIGMENTED POLYUERTHANE OR APPROVED EQUAL CORROSION INHIBITING COATING.

FAN COIL UNIT - FCU (PRELIMINARY)

MARK	LOCATION	TYPE	SENSIBLE (BTUH)	LATENT (BTUH)	TOTAL COOLING CAP. (BTUH)	CFM	ESP (IN WG)	ENTERING AIR CONDITIONS DB	ENTERING AIR CONDITIONS WB	VOLTS	PH	MCA	MOCP	DRAIN (IN.)	REFRIGERANT PIPE (IN.) LIQUID	REFRIGERANT PIPE (IN.) GAS	FILTER	DBA	UNIT WEIGHT	MODEL (MITSUBISHI)	REMARKS
FCU-1	CEILING	DUCTED DX	5,000	-	5,000	300	0.50	83.3	49.8	230	1	1.45	-	1-1/4	1/4	3/8	MERV 8	26	58	PEAD-A09AA7	WIRED REMOTE CONTROLLER, FILTER BOX WITH MERV-13 THROWAWAY FILTER.
FCU-2	CEILING	DUCTED DX	3,900	1,800	4,700	170	0.50	83.3	49.8	230	1	1.45	-	1-1/4	1/4	3/8	MERV 8	26	58	PEAD-A09AA7	WIRED REMOTE CONTROLLER, FILTER BOX WITH MERV-13 THROWAWAY FILTER.

VARIABLE AIR DIFFUSER - VAD (PRELIMINARY)

MARK NO.	AREA SERVED	NOM. AIRFLOW (CFM)	MAX. AIRFLOW (CFM)	INLET SIZE (IN)	REMARKS
VAD-1	OFFICE	100	140	6	PROVIDE WALL MOUNTED THERMOSTAT.
VAD-2	OFFICE	100	140	6	PROVIDE WALL MOUNTED THERMOSTAT.
VAD-3, VAD-4	OPEN OFFICE AREA	150	225	8	PROVIDE SINGLE WALL MOUNTED THERMOSTAT.
VAD-5	HR OFFICE	70	140	6	PROVIDE WALL MOUNTED THERMOSTAT.
VAD-6, VAD-7	WOMEN'S LOCKERS	175	225	8	PROVIDE SINGLE WALL MOUNTED THERMOSTAT.
VAD-8, VAD-9	MEN'S LOCKERS	180	225	8	PROVIDE SINGLE WALL MOUNTED THERMOSTAT.
VAD-10	EMPLOYEE SUPPLY	50	140	6	PROVIDE WALL MOUNTED THERMOSTAT.
VAD-11, VAD-12, VAD-13, VAD-14 VAD-15 VAD-16	BREAK/ MEETING ROOM	235	370	10	PROVIDE SINGLE WALL MOUNTED THERMOSTAT.

VARIABLE AIR DIFFUSER CONT. (PRELIMINARY)

MARK NO.	AREA SERVED	NOM. AIRFLOW (CFM)	MAX. AIRFLOW (CFM)	INLET SIZE (IN)	REMARKS
VAD-17	LACTATION	50	140	6	PROVIDE WALL MOUNTED THERMOSTAT.
VAD-18	GENDER NEUTRAL LOCKER	160	225	8	PROVIDE WALL MOUNTED THERMOSTAT.
VAD-19	USDA OFFICE	110	140	6	PROVIDE WALL MOUNTED THERMOSTAT.
VAD-20	MANAGER'S OFFICE	80	140	6	PROVIDE WALL MOUNTED THERMOSTAT.
VAD-21	KNIFE ROOM	70	140	6	PROVIDE WALL MOUNTED THERMOSTAT.
VAD-22	QA/QC SAMPLES	90	140	6	PROVIDE WALL MOUNTED THERMOSTAT.
VAD-23	QA/QC OFFICE	90	140	6	PROVIDE WALL MOUNTED THERMOSTAT.
VAD-24, VAD-25	RETAIL SALES	160	225	8	PROVIDE SINGLE WALL MOUNTED THERMOSTAT.
-	-	-	-	-	

PRESSURE INDEPENDENCE MODULE - PIM (PRELIMINARY)

MARK NO.	UNIT SERVED	MIN. MAX. AIRFLOW (CFM)	INLET (IN)	V/Ø/HZ	REMARKS
PIM-1	PACU-1	0 - 3,000	14	115/1/60	PROVIDE STATIC PRESSURE PROBE AND 115-24V STEP DOWN TRANSFORMER.
PIM-2	PACU-1	0 - 2,100	12	115/1/60	PROVIDE STATIC PRESSURE PROBE AND 115-24V STEP DOWN TRANSFORMER.

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AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
MECHANICAL EQUIPMENT SCHEDULES

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DRAWN BY:	DATE:
CHECKED BY:	SCALE:

APPROVED:
CHIEF ENGINEER — DATE

DRAWING NO. M-8

EVAPORATOR UNIT - EU (PRELIMINARY)

MARK	LOCATION	AREA SERVED	TYPE	FAN			COOLING COIL									MOTOR		DRAIN (IN.)	REFRIGERANT PIPE (IN.)		DBA	UNIT WEIGHT	REMARKS
				NO.	CFM	ESP (IN WG)	TOTAL (BTUH)	SENS. (BTUH)	LATENT (BTUH)	EAT (°F) DB	EAT (°F) WB	TD RANGE (°F)	SST RANGE (°F)	NO. OF ROWS	REF	kW	V / Ø / HZ		LIQUID	GAS			
EU-1, EU-2	INDOOR	SHIPPING / RECEIVING DOCK	REF	1	5,660	-	38,130	-	-	-	-	6-30	-40-30	1	R-448A	0.470	480 / 3 / 60	1 1/4	1/2	1 1/8	-	439	ELECTRIC DEFROST,ECM FAN MOTOR, WITH IN ROOM TEMPERATURE AND POWER CONTROLS. CONTROL POWER 120V/1Ø/60HZ.
EU-3, EU-4	INDOOR	FINISHED GOODS COOLER	REF	2	11,876	-	70,390	-	-	-	-	6-30	-40-30	1	R-448A	(2) 0.470	480 / 3 / 60	1 1/4	7/8	1 3/8	-	730	ELECTRIC DEFROST,ECM FAN MOTOR, WITH IN ROOM TEMPERATURE AND POWER CONTROLS. CONTROL POWER 120V/1Ø/60HZ.
EU-5, EU-6	INDOOR	CARCASS SALES COOLER	REF	1	8,355	-	79,930	-	-	-	-	6-30	-40-30	2	R-448A	0.470	480 / 3 / 60	1 1/4	7/8	1 5/8	-	854	ELECTRIC DEFROST,ECM FAN MOTOR, WITH IN ROOM TEMPERATURE AND POWER CONTROLS. CONTROL POWER 120V/1Ø/60HZ.
EU-7, EU-8	INDOOR	CARCASS CHILL COOLER #1	REF	4	33,420	-	249,510	-	-	-	-	6-30	-40-30	1	R-448A	(4) 0.470	480 / 3 / 60	1 1/4	(2) 1 5/8	(2) 2 5/8	-	2,424	ELECTRIC DEFROST,ECM FAN MOTOR, WITH IN ROOM TEMPERATURE AND POWER CONTROLS. CONTROL POWER 120V/1Ø/60HZ.
EU-9, EU-10	INDOOR	CARCASS CHILL COOLER #2	REF	4	33,420	-	249,510	-	-	-	-	6-30	-40-30	1	R-448A	(4) 0.470	480 / 3 / 60	1 1/4	(2) 1 5/8	(2) 2 5/8	-	2,424	ELECTRIC DEFROST,ECM FAN MOTOR, WITH IN ROOM TEMPERATURE AND POWER CONTROLS. CONTROL POWER 120V/1Ø/60HZ.
EU-11, EU-12	INDOOR	INEDIBLE MATERIALS	REF	4	1,920	-	26,310	-	-	-	-	6-30	20-45	2	R-448A	(4) 0.013	120 / 1 / 60	3/4	1/2	7/8	-	239	AIR DEFROST, LOW AIR WALK-IN TYPE, ECM FAN MOTOR, WITH IN-ROOM TEMPERATURE AND FAN SPEED CONTROLS. CONTROL POWER 120V/1Ø/60HZ.
EU-13	INDOOR	BLAST FREEZER	REF	5	52,725	-	283,700	-	-	-	-	6-30	-40-30	1	R-448A	(5) 0.470	480 / 3 / 60	1 1/4	(2) 1 5/8	(2) 2 5/8	-	2,524	ELECTRIC DEFROST,ECM FAN MOTOR, WITH IN ROOM TEMPERATURE AND POWER CONTROLS. CONTROL POWER 120V/1Ø/60HZ.
EU-14, EU-15, EU-16, EU-17, EU-18, EU-19, EU-20, EU-21	INDOOR	FABRICATION ROOM	REF	1	4,520	-	63,790	-	-	-	-	6-30	15-45	2	R-448A	0.470	480 / 3 / 60	1	7/8	1 3/8	-	648	ELECTRIC DEFROST, LOW VELOCITY, ECM FAN MOTOR, WITH IN-ROOM TEMPERATURE AND POWER CONTROLS. CONTROL POWER 120V/1Ø/60HZ.

AIR CONDENSING UNIT - ACU (PRELIMINARY)

MARK NO.	LOCATION	UNITS SERVED	CAPACITY (BTUH)	ENTERING AMBIENT AIR TEMP (°F)	COMPRESSOR					FAN			MOTOR		UNIT WEIGHT (LBS)	REMARKS
					NO.	TYPE	REF	RLA	LRA	NO.	TYPE	AIR FLOW (CFM)	HP	V / Ø / HZ		
ACU-1	OUTDOOR	EU-1, EU-2	77,320	95	1	SCROLL	R-448A / R-449A	13.7	99.0	2	PROPELLER	-	0.5	480 / 3/ 60	1,270	GROUND MOUNTED COMPRESSOR/ CONDENSER UNITS W/ IN-ROOM EVAPORATORS. CONTROL POWER 120V/1Ø/60HZ.
ACU-2	OUTDOOR	EU-3, EU-4	140,710	95	2	SEMI-HERMETIC	R-448A / R-449A	12.4	85.0	4	PROPELLER	-	(2) 3.2	480 / 3/ 60	2,618	GROUND MOUNTED COMPRESSOR/ CONDENSER UNITS W/ IN-ROOM EVAPORATORS. CONTROL POWER 120V/1Ø/60HZ.
ACU-3	OUTDOOR	EU-5, EU-6	143,930	95	2	SEMI-HERMETIC	R-448A / R-449A	12.4	85.0	4	PROPELLER	-	(4) 3.2	480 / 3/ 60	2,618	GROUND MOUNTED COMPRESSOR/ CONDENSER UNITS W/ IN-ROOM EVAPORATORS. CONTROL POWER 120V/1Ø/60HZ.
ACU-4	OUTDOOR	EU-7, EU-8	458,200	95	2	SEMI-HERMETIC	R-448A / R-449A	42.2	235.0	4	PROPELLER	-	(2) 2.6	480 / 3/ 60	4,188	GROUND MOUNTED COMPRESSOR/ CONDENSER UNITS W/ IN-ROOM EVAPORATORS. CONTROL POWER 120V/1Ø/60HZ.
ACU-5	OUTDOOR	EU-9, EU-10	458,200	95	2	SEMI-HERMETIC	R-448A / R-449A	42.2	235.0	4	PROPELLER	-	(2) 2.6	480 / 3/ 60	4,188	GROUND MOUNTED COMPRESSOR/ CONDENSER UNITS W/ IN-ROOM EVAPORATORS. CONTROL POWER 120V/1Ø/60HZ.
ACU-6	OUTDOOR	EU-11, EU-12	49,820	95	1	SCROLL	R-448A / R-449A	8.5	63.0	1	PROPELLER	-	0.5	480 / 3/ 60	516	GROUND MOUNTED COMPRESSOR/ CONDENSER UNITS W/ IN-ROOM EVAPORATORS. CONTROL POWER 120V/1Ø/60HZ.
ACU-7	OUTDOOR	EU-13	279,720	95	2	SEMI-HERMETIC	R-448A / R-449A	55.0	367.0	4	PROPELLER	-	(4) 3.2	480 / 3/ 60	4,554	GROUND MOUNTED COMPRESSOR/ CONDENSER UNITS W/ IN-ROOM EVAPORATORS. CONTROL POWER 120V/1Ø/60HZ.
ACU-8	OUTDOOR	EU-14 TO EU-21	509,560	95	2	SEMI-HERMETIC	R-448A / R-449A	42.2	235.0	4	PROPELLER	-	(4) 3.2	480 / 3/ 60	4,186	GROUND MOUNTED COMPRESSOR/ CONDENSER UNITS W/ IN-ROOM EVAPORATORS. CONTROL POWER 120V/1Ø/60HZ.

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DRAWING NO. M-9

SUPPLY FAN - SF (PRELIMINARY)

MARK NO.	SERVICE	LOCATION	AREA SERVED	DRIVE / TYPE	FAN			MOTOR			DIMENSIONS (L" x W" x H")	NOISE (dBA)	UNIT WEIGHT (LBS)	REMARKS
					CAPACITY (CFM)	STATIC PRESS (IN H2O)	RPM	NO. OF MOTORS	HP	V / Ø / HZ				
SF-1	MAKE-UP AIR	ROOF	FABRICATION ROOM	BELT / ROOF CENTRIFUGAL	13,400	1.00	700	1	10.00	460 / 3 / 60	58 x 58 x 52	78	615	PROVIDE ROOF CURB, MERV 8 & 13 FILTERS, AND WALL SWITCH.
SF-2	MAKE-UP AIR	ROOF	FABRICATION ROOM	BELT / ROOF CENTRIFUGAL	13,400	1.00	700	1	10.00	460 / 3 / 60	58 x 58 x 52	78	615	PROVIDE ROOF CURB, MERV 8 & 13 FILTERS, AND WALL SWITCH.
SF-3	MAKE-UP AIR	ROOF	HARVEST AREA	BELT / ROOF CENTRIFUGAL	10,800	1.00	626	1	7.50	460 / 3 / 60	58 x 58 x 52	74	592	PROVIDE ROOF CURB, MERV 8 & 13 FILTERS, AND WALL SWITCH.
SF-4	MAKE-UP AIR	ROOF	INEDIBLE MATERIALS	BELT / ROOF CENTRIFUGAL	3,900	1.00	997	1	2.00	460 / 3 / 60	40 x 40 x 41	69	212	PROVIDE ROOF CURB, MERV 8 & 13 FILTERS, AND WALL SWITCH.
SF-5	MAKE-UP AIR	ROOF	LIVESTOCK BUILDING	BELT / ROOF CENTRIFUGAL	15,500	0.75	1,310	1	10.00	460 / 3 / 60	131 x 53 x 49	81	1,285	PROVIDE ROOF CURB, MERV 8 FILTERS, AND WALL SWITCH.

EXHAUST FAN - EF (PRELIMINARY)

MARK NO.	SERVICE	LOCATION	AREA SERVED	DRIVE / TYPE	FAN			MOTOR			DIMENSIONS (L" x W" x H")	NOISE (dBA)	UNIT WEIGHT (LBS)	REMARKS
					CAPACITY (CFM)	STATIC PRESS (IN H2O)	RPM	NO. OF MOTORS	HP	V / Ø / HZ				
EF-1	GENERAL EXHAUST	CEILING	WOMENS / MENS LOCKER AREA	DIRECT / INLINE CENTRIFUGAL	640	0.50	900	1	0.17	115 / 1 / 60	14 x 24 x 15	34	60	EC MOTOR, INTEGRAL BACKDRAFT DAMPER, PROVIDE WALL SWITCH.
EF-2	GENERAL EXHAUST	CEILING	GENDER NEUTRAL LOCKER & USDA TOILET AREA	DIRECT / INLINE CENTRIFUGAL	240	0.50	1,000	1	0.06	115 / 1 / 60	14 x 18 x 15	39	36	EC MOTOR, INTEGRAL BACKDRAFT DAMPER, PROVIDE WALL SWITCH.
EF-3	GENERAL EXHAUST	CEILING	QA/QC SAMPLES	DIRECT / INLINE CENTRIFUGAL	100	0.50	1,400	1	0.02	115 / 1 / 60	11 x 13 x 9	41	16	EC MOTOR, INTEGRAL BACKDRAFT DAMPER, PROVIDE WALL SWITCH.
EF-4	DRYER EXHAUST	CEILING	LAUNDRY & SANITATION	DIRECT / INLINE CENTRIFUGAL	100	0.50	1,400	1	0.02	115 / 1 / 60	11 x 13 x 9	41	16	EC MOTOR, INTEGRAL BACKDRAFT DAMPER, PROVIDE WALL SWITCH.
EF-5	FUME HOOD EXHAUST	CEILING	MAINTENANCE	DIRECT / INLINE CENTRIFUGAL	310	0.75	1,350	1	0.07	115 / 1 / 60	12 x 14 x 11	48	23	CONNECT TO WELDING HOOD. EC MOTOR, INTEGRAL BACKDRAFT DAMPER, PROVIDE WALL SWITCH.
EF-6	GENERAL EXHAUST	ROOF	FABRICATION ROOM	BELT / CENTRIFUGAL	24,340	1.00	400	1	10.00	460 / 3 / 60	83 x 83 x 63	70	555	PROVIDE ROOF CURB AND WALL SWITCH.
EF-7	GENERAL EXHAUST	ROOF	HARVEST AREA	BELT / CENTRIFUGAL	10,800	1.00	580	1	5.00	460 / 3 / 60	59 x 59 x 51	68	286	PROVIDE ROOF CURB AND WALL SWITCH.
EF-8	GENERAL EXHAUST	ROOF	INEDIBLE MATERIALS	BELT / CENTRIFUGAL	3,690	1.00	1,000	1	1.50	460 / 3 / 60	36 x 36 x 40	65	107	PROVIDE ROOF CURB AND WALL SWITCH.
EF-9	GENERAL EXHAUST	ROOF	LIVESTOCK BUILDING	DIRECT / CENTRIFUGAL	15,500	0.75	780	1	7.50	460 / 3 / 60	77 x 63 x 58	75	1,482	PROVIDE ROOF CURB AND WALL SWITCH.

TRANSFER FAN - TF (PRELIMINARY)

MARK NO.	SERVICE	LOCATION	AREA SERVED	DRIVE / TYPE	FAN			MOTOR			DIMENSIONS (L" x W" x H")	NOISE (dBA)	UNIT WEIGHT (LBS)	REMARKS
					CAPACITY (CFM)	STATIC PRESS (IN H2O)	RPM	NO. OF MOTORS	HP	V / Ø / HZ				
TF-1	TRANSFER	CEILING	HYGIENE LOCK	DIRECT / INLINE CENTRIFUGAL	100	0.50	1,000	1	0.06	115 / 1 / 60	11 x 13 x 9	41	16	EC MOTOR, INTEGRAL BACKDRAFT DAMPER, PROVIDE WALL SWITCH.
TF-2	TRANSFER	CEILING	HYGIENE LOCK	DIRECT / INLINE CENTRIFUGAL	100	0.50	1,000	1	0.06	115 / 1 / 60	11 x 13 x 9	41	16	EC MOTOR, INTEGRAL BACKDRAFT DAMPER, PROVIDE WALL SWITCH.

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EXPIRATION DATE OF THE LICENSE XX/XX/XXXX

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
MECHANICAL EQUIPMENT SCHEDULES

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE:

APPROVED:
CHIEF ENGINEER — DATE

DRAWING NO. M-10

AIR CURTAIN - AC (PRELIMINARY)

MARK NO.	SERVICE	LOCATION	AREA SERVED	DRIVE / TYPE	FAN			MOTOR			DIMENSIONS (L" x W" x H")	NOISE (dBA)	UNIT WEIGHT (LBS)	REMARKS
					CAPACITY (CFM)	STATIC PRESS (IN H2O)	RPM	NO. OF MOTORS	HP	V / Ø / HZ				
AC-1	AIR CURTAIN	WALL MOUNTED	FABRICATION ROOM	DIRECT / DOUBLE WIDTH	625	-	-	1	0.17	230 / 1 / 60	42 x 9 x 8	50	35	PROVIDE DOOR -ACTIVATED LIMIT SWITCH.
AC-2	AIR CURTAIN	WALL MOUNTED	FABRICATION ROOM	DIRECT / DOUBLE WIDTH	625	-	-	1	0.17	230 / 1 / 60	42 x 9 x 8	50	35	PROVIDE DOOR -ACTIVATED LIMIT SWITCH.
AC-3	AIR CURTAIN	WALL MOUNTED	FABRICATION ROOM	DIRECT / DOUBLE WIDTH	1,500	-	-	1	0.17	230 / 1 / 60	60 x 9 x 8	53	48	PROVIDE DOOR -ACTIVATED LIMIT SWITCH.
AC-4	AIR CURTAIN	WALL MOUNTED	FABRICATION ROOM	DIRECT / DOUBLE WIDTH	1,500	-	-	1	0.17	230 / 1 / 60	60 x 9 x 8	53	48	PROVIDE DOOR -ACTIVATED LIMIT SWITCH.
AC-5	AIR CURTAIN	WALL MOUNTED	FABRICATION ROOM	DIRECT / DOUBLE WIDTH	2,100	-	-	2	0.17	230 / 1 / 60	86 x 9 x 8	53	75	PROVIDE DOOR -ACTIVATED LIMIT SWITCH.
AC-6	AIR CURTAIN	WALL MOUNTED	FINISHED GOODS COOLER	DIRECT / DOUBLE WIDTH	2,100	-	-	2	0.17	230 / 1 / 60	86 x 9 x 8	53	75	PROVIDE DOOR -ACTIVATED LIMIT SWITCH.
AC-7, AC-8	AIR CURTAIN	WALL MOUNTED	SHIPPING / RECEIVING DOCK	DIRECT / DOUBLE WIDTH	1,200	-	-	1	0.17	230 / 1 / 60	48 x 9 x 8	52	40	PROVIDE WALL BRACKET AND DOOR -ACTIVATED LIMIT SWITCH, CONNECT AC-7 AND AC-8.
AC-9, AC-10	AIR CURTAIN	WALL MOUNTED	SHIPPING / RECEIVING DOCK	DIRECT / DOUBLE WIDTH	1,200	-	-	1	0.17	230 / 1 / 60	48 x 9 x 8	52	40	PROVIDE WALL BRACKET AND DOOR -ACTIVATED LIMIT SWITCH, CONNECT AC-9 AND AC-10.
AC-11	AIR CURTAIN	WALL MOUNTED	CARCASS CHILL COOLER	DIRECT / DOUBLE WIDTH	1,500	-	-	1	0.17	230 / 1 / 60	60 x 9 x 8	53	48	PROVIDE DOOR -ACTIVATED LIMIT SWITCH.
AC-12	AIR CURTAIN	WALL MOUNTED	INEDIBLE MATERIALS	DIRECT / DOUBLE WIDTH	1,800	-	-	1	0.17	230 / 1 / 60	72 x 9 x 8	53	58	PROVIDE DOOR -ACTIVATED LIMIT SWITCH.
AC-13	AIR CURTAIN	WALL MOUNTED	INEDIBLE MATERIALS	DIRECT / DOUBLE WIDTH	2,100	-	-	2	0.17	230 / 1 / 60	86 x 9 x 8	53	75	PROVIDE DOOR -ACTIVATED LIMIT SWITCH.
AC-14	AIR CURTAIN	WALL MOUNTED	FABRICATION ROOM	DIRECT / DOUBLE WIDTH	2,100	-	-	2	0.17	230 / 1 / 60	86 x 9 x 8	53	75	PROVIDE DOOR -ACTIVATED LIMIT SWITCH.
AC-15	AIR CURTAIN	WALL MOUNTED	FABRICATION ROOM	DIRECT / DOUBLE WIDTH	-	-	-	-	-	230 / 1 / 60	86 x 9 x 8	53	75	PROVIDE DOOR -ACTIVATED LIMIT SWITCH.
AC-16	AIR CURTAIN	WALL MOUNTED	FABRICATION ROOM	DIRECT / DOUBLE WIDTH	1,800	-	-	1	0.17	230 / 1 / 60	72 x 9 x 8	53	58	PROVIDE DOOR -ACTIVATED LIMIT SWITCH.
AC-17	AIR CURTAIN	WALL MOUNTED	FABRICATION ROOM	DIRECT / DOUBLE WIDTH	1,800	-	-	1	0.17	230 / 1 / 60	72 x 9 x 8	53	58	PROVIDE DOOR -ACTIVATED LIMIT SWITCH.
AC-18	AIR CURTAIN	WALL MOUNTED	FABRICATION ROOM	DIRECT / DOUBLE WIDTH	1,800	-	-	1	0.17	230 / 1 / 60	72 x 9 x 8	53	58	PROVIDE DOOR -ACTIVATED LIMIT SWITCH.

CIRCULATING FAN - CF (PRELIMINARY)

MARK NO.	SERVICE	LOCATION	AREA SERVED	DRIVE / TYPE	FAN			MOTOR			UNIT WEIGHT (LBS)	REMARKS
					NO. OF AIRFOILS	RPM	DIAMETER (FT)	HP	CURRENT (A)	V / Ø / HZ		
CF-1, CF-2, CF-3, CF-4	AIR CIRCULATION	CEILING	LIVESTOCK BUILDING	DIRECT / HIGH VOLUME LOW SPEED	6	145	10	1	10.00	230 / 1 / 60	220	CONNECT TO FIRE ALARM PANEL.

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
MECHANICAL EQUIPMENT SCHEDULES

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CHIEF ENGINEER | DATE

DRAWING NO. M-11

ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	COMPRESSED AIR	MISC	MISCELLANEOUS
ABV	ABOVE	MTD	MOUNTED
AFF	ABOVE FINISH FLOOR	MTG	MOUNTING
ARCH	ARCHITECT/ARCHITECTURAL	N/A	NOT APPLICABLE
AWT	AVERAGE WATER TEMPERATURE	NC	NORMALLY CLOSED
BDD	BACKDRAFT DAMPER	N.I.C.	NOT IN CONTRACT
BFP	BACKFLOW PREVENTER	NO	NORMALLY OPEN
BLDG	BUILDING	NTS	NOT TO SCALE
BV	BALANCING VALVE	O/C	ON CENTER
CLG	CEILING	OD	OUTSIDE DIAMETER
CO	CLEANOUT	OPER	OPERATING
CONC	CONCRETE	OPNG	OPENING
COND	CONDENSER	PLBG	PLUMBING
CONN	CONNECT OR CONNECTION	PRV	PRESSURE REDUCING VALVE
CONT	CONTINUATION	PSI	POUNDS PER SQUARE INCH
CW	COLD WATER	PSIG	POUNDS PER SQUARE INCH GAUGE
DB	DRY BULB		
Ø	DIAMETER OR PHASE	PT	PRESSURE/TEMPERATURE
DIA	DIAMETER	RA	RETURN AIR
DN	DOWN	RAG	RETURN AIR GRILLE
DWG	DRAWING	REF	REFRIGERANT
(E)	EXISTING	REQD	REQUIRED
EA	EACH	REV	REVISION(S)
EAT	ENTERING AIR TEMPERATURE	R.O.	ROUGH OPENING
EDB	ENTERING DRY BULB	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
EER	ENERGY EFFICIENCY RATIO		
EFF	EFFICIENCY	RPM	REVOLUTION PER MINUTE
ELEC	ELECTRIC OR ELECTRICAL	SEER	SEASONAL ENERGY EFFICIENCY RATIO
EQUIP	EQUIPMENT		
ESP	EXTERNAL STATIC PRESSURE	SHT	SHEET
EWB	ENTERING WET BULB	SP	STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE	SQ FT	SQUARE FOOT/FEET
EXIST	EXISTING	SS	STAINLESS STEEL
FCO	FLOOR CLEANOUT	SST	SATURATED SUCTION TEMPERATURE
FD	FLOOR DRAIN		
FF	FINISH FLOOR	STD	STANDARD
FLA	FULL LOAD AMPS	TAB	TEST, ADJUST & BALANCE
FLR	FLOOR	THK	THICK
FPM	FEET PER MINUTE	TSTAT	THERMOSTAT
FPS	FEET PER SECOND	TU	TERMINAL UNIT
GAL	GALLONS	TYP	TYPICAL
GALV	GALVANIZED	UBC	UNIFORM BUILDING CODE
GPH	GALLONS PER HOUR	UFC	UNIFORM FIRE CODE
GPM	GALLONS PER MINUTE	UMC	UNIFORM MECHANICAL CODE
HB	HOSE BIBB	UPC	UNIFORM PLUMBING CODE
HP	HORSEPOWER	V	VENT OR VOLTS
HS	HOSE STATION	VAC	VACUUM
HW	HOT WATER	VFD	VARIABLE FREQUENCY DRIVE
HX	HEAT EXCHANGER	VTR	VENT THRU ROOF
HZ	HERTZ	W	WASTE
IN	INCH OR INCHES	W/	WITH
KW	KILOWATT	W/O	WITHOUT
KWH	KILOWATT HOUR	WB	WET BULB
LAT	LEAVING AIR TEMPERATURE	WC	WATER CLOSET
LBS	POUNDS	WCO	WALL CLEANOUT
LWT	LEAVING WATER TEMPERATURE	WG	WATER GAGE
MAX	MAXIMUM	WH	WATER HEATER
MBH	THOUSANDS BTU PER HOUR	WHA	WATER HAMMER ARRESTOR
MECH	MECHANICAL	WPD	WATER PRESSURE DROP
MFR	MANUFACTURER	WT	WEIGHT
MIN	MINIMUM OR MINUTES		

MECHANICAL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
———	COLD WATER, CW	—⊖—	DOWN IN PIPE
———	HOT WATER SUPPLY, HWS	—⋈—	VALVE
———	HOT WATER RETURN,HWR	—⋈—	BALL VALVE
— W —	SANITARY WASTE	—⊣⊢—	UNION
- - - - - -	VENT, V	—‖—	WALL CLEANOUT
— CA —	COMPRESSED AIR	—⊢	FLOOR CLEANOUT
— CD —	CONDENSATE DRAIN	☒	FLOOR SINK
—⊂—	PIPE DOWN	◉	FLOOR DRAIN
—○—	PIPE UP	◂	SHOWER

GENERAL LEGEND

SYMBOL	DESCRIPTION
A / B	DETAIL SYMBOL: A = IDENTIFYING NUMBER B = SHEET WHERE DETAIL IS SHOWN
1 OR 1	KEYED REFERENCE NOTE OR SHEET NOTE
ACU-1	EQUIPMENT IDENTIFICATION (REFER TO EQUIPMENT SCHEDULE)
1	REVISION CLOUD AND REVISION NUMBER

DESIGN DEVELOPMENT NOTES

1. DESIGN DEVELOPMENT DRAWINGS ARE COMPLETED UP TO 60% AND ARE NOT INTENDED FOR PERMIT OR CONSTRUCTION.
2. EXCLUDED FROM THIS DRAWING SET ARE CONTROLS AND PIPING DIAGRAMS.
3. SIZING CAPACITIES, LAYOUT, AND QUANTITIES OF EQUIPMENT, DUCTWORK, PIPING, AND APPURTENANCES ARE SUBJECT TO CHANGE BASED ON PROJECT LOCATION, OWNER COMMENTS, AND ARCHITECTURAL REVISIONS TO THE BUILDING.

FIRE SAFETY NOTES

10.8.1.1 AS NECESSARY DURING EMERGENCIES, MAINTENANCE, DRILLS, PRESCRIBED TESTING, ALTERATIONS, OR RENOVATIONS, PORTABLE OR FIXED FIRE EXTINGUISHING SYSTEM OR DEVICE OR ANY FIRE-WARNING SYSTEMS SHALL BE PERMITTED TO BE MADE INOPERATIVE OR INACCESSIBLE. A FIRE WATCH SHALL BE REQUIRED AS SPECIFIED IN SECTIONS 13.3.4.3.5.2(3), 13.7.1.4.4, 16.5.4, 20.2.3.6, 34.6.3.3, 41.2.2.5, 41.2.2.6, 41.2.4, 41.3.4, 41.4.1, 34.5.4.3, AND 25.1.8 AT NO COST TO THE AUTHORITY HAVING JURISDICTION.

16.1 GENERAL REQUIREMENTS.

16.1.1 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 THIS CHAPTER.

16.1.2 A FIRE PROTECTION PLAN SHALL BE ESTABLISHED WHERE REQUIRED BY THE AHJ.

16.1.3 IN BUILDINGS UNDER CONSTRUCTION, ADEQUATE ESCAPE FACILITIES SHALL BE MAINTAINED AT ALL TIMES FOR THE USE OF CONSTRUCTION WORKERS. ESCAPE FACILITIES SHALL CONSIST OF DOORS, WALKWAYS, STAIRS, RAMPS, FIRE ESCAPES, LADDERS, OR OTHER APPROVED MEANS OR DEVICES ARRANGED IN ACCORDANCE WITH THE GENERAL PRINCIPLES OF CHAPTER 14 AND NFPA 101, LIFE SAFETY CODE, INSOFAR AS THEY CAN REASONABLY BE APPLIED TO BUILDINGS UNDER CONSTRUCTION. [101:4.6.10.2]

16.1.4 FIRE DEPARTMENT ACCESS ROADS PROVIDED IN ACCORDANCE WITH 18.2.3 SHALL BE PROVIDED AT THE START OF A PROJECT AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

16.4.3 FIRE PROTECTION DURING CONSTRUCTION

16.4.3.1 WATER SUPPLY

16.4.3.1.1 A WATER SUPPLY FOR FIRE PROTECTION, EITHER TEMPORARY OR PERMANENT, SHALL BE MADE AVAILABLE AS SOON AS COMBUSTIBLE MATERIAL ACCUMULATES AND BE MAINTAINED OPERATIONAL AT ALL TIMES DURING ALTERATION.

16.4.4.1 WHERE BUILDING IS PROTECTED BY FIRE-PROTECTION SYSTEMS, SUCH SYSTEMS SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES DURING ALTERATION.

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

16.4.4.3 WHEN IT IS NECESSARY TO SHUT DOWN THE SYSTEM, THE AUTHORITY HAVING JURISDICTION SHALL HAVE THE AUTHORITY TO REQUIRE ALTERNATE MEASURES OF PROTECTION UNTIL THE SYSTEM IS RETURNED TO SERVICE.

16.4.4.4 THE FIRE DEPARTMENT SHALL BE NOTIFIED WHEN THE SYSTEM IS SHUT DOWN AND WHEN THE SYSTEM IS RETURNED TO SERVICE.

PLUMBING NOTES

1. ALL HORIZONTAL SOIL, WASTE, AND STORM DRAIN PIPING SHALL BE SLOPED AT MINIMUM 1/4" PER FOOT UNLESS OTHERWISE NOTED.
2. SUPPORT HORIZONTAL LINES OF COPPER TUBING WITH HANGERS SPACE NOT MORE THAN 6 FEET, CENTER TO CENTER FOR ALL PIPE SIZES. ALL PIPES SHALL BE SUPPORTED AT ELBOWS, BRANCHES AND RISERS.
3. SUPPORT HORIZONTAL CAST IRON SOIL PIPE WITH HANGER, OR PIER, TWO FOR EACH 5 FOOT PIPE LENGTH. LOCATE SUPPORT CLOSE TO JOINTS EXCEPT, PIPE EXCEEDING 5 FEET IN LENGTH SHALL BE SUPPORTED AT NO MORE THAN 5 FOOT INTERVALS. SUPPORTS SHALL BE LOCATED ON BOTH SIDES OF ALL JOINTS AND WITHIN 6" OF THE JOINT.
4. ALL DOMESTIC COLD WATER PIPES LOCATED ON THE ROOF OR OTHER LOCATIONS EXPOSED TO DIRECT SUNLIGHT SHALL BE INSULATED.
5. ALL PIPE INSULATION EXPOSED TO WEATHER OR EXPOSED WITHIN 7'-0" ABOVE THE FINISHED FLOOR SHALL BE PROVIDED WITH 0.016" THICK ALUMINUM JACKETING.
6. DISINFECT NEW WATER PIPING PER UPC 609.9.

GENERAL NOTES

1. CONFORM TO ALL REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE (IBC), UNIFORM PLUMBING CODE, UNIFORM FIRE CODE, NATIONAL ELECTRIC CODE, ENERGY CONSERVATION CODE, THE LATEST CITY & COUNTY OF HONOLULU/STATE OF HAWAII AMENDMENTS AND ORDINANCES, AND ALL OTHER AGENCIES HAVING JURISDICTION. THE AIR CONDITIONING AND VENTILATION SYSTEMS SHALL COMPLY WITH TITLE 11, ADMINISTRATIVE RULES DEPT. OF HEALTH, CHAPTER 39 - AIR CONDITIONING AND VENTILATION REQUIREMENTS. COMPLY WITH ALL EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND OTHER APPLICABLE REGULATIONS.
2. WORK SHALL CONFORM TO ALL APPLICABLE CODES AND STANDARDS UNLESS CONTRACT DOCUMENTS ARE MORE STRINGENT.
3. ALL WORK SHOWN ON THESE DRAWINGS ARE NEW UNLESS OTHERWISE NOTED.
4. EXISTING CONDITIONS AND DIMENSIONS SHOWN ON THESE DRAWINGS ARE APPROXIMATE. BIDDERS SHALL VISIT THE PREMISES AND THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL DETAILS OF WORK AND WORKING CONDITIONS BEFORE SUBMITTING THEIR BID. REASONABLE MODIFICATIONS IN LOCATION AND ARRANGEMENTS TO SUIT JOB CONDITIONS SHALL NOT CONSTITUTE BASIS FOR REQUESTING OF ADDITIONAL FUNDS FROM THE OWNER.
5. PRIOR TO ORDERING MATERIALS AND PROCURING EQUIPMENT, SUCCESSFUL BIDDER (CONTRACTOR) SHALL BE REQUIRED TO VERIFY ALL CONDITIONS, INCLUDING BUT NOT LIMITED TO EQUIPMENT, MATERIALS, SIZES, DIMENSIONS, INVERTS, AND VOLTAGES THAT AFFECT HIS WORK. SUBMIT A LETTER TO THE ENGINEER CONFIRMING THAT THIS WAS DONE. IF WRITTEN CONFIRMATION IS NOT RECEIVED BY THE ENGINEER, SHOP DRAWINGS AND OTHER SUBMITTALS WILL BE RETURNED WITHOUT REVIEW. SHOW ALL DISCREPANCIES ON SHOP DRAWINGS AND NOTIFY THE ENGINEER IN WRITING OF SUCH DISCREPANCIES PRIOR TO PROCUREMENT.
6. ALL UTILITIES AND APPURTENANCES SHALL BE PROTECTED AT ALL TIMES DURING CONSTRUCTION, AND IF DAMAGED, SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO OWNER.
7. ALL FASTENERS, SUPPORTS, HANGERS, SPRING ISOLATORS, AND MISCELLANEOUS STEEL ITEMS INCLUDING BUT NOT LIMITED TO BOLTS, NUTS, SCREWS, RODS, PLATES, AND ANGLES, ETC. SHALL BE GALVANIZED UNLESS OTHERWISE NOTED OR SPECIFIED.
8. REFER TO PROJECT MANUAL (SPECIFICATIONS) FOR ADDITIONAL REQUIREMENTS. PLANS AND SPECIFICATIONS SHALL BE TAKEN TOGETHER. PROVIDE ALL WORK CALLED FOR IN EITHER.
9. FURNISH ALL EQUIPMENT, MATERIALS, LABOR, TOOLS, ETC., REQUIRED FOR THE INSTALLATION OF THE COMPLETE AND OPERATING SYSTEM. ALL EQUIPMENT AND MATERIALS SHALL BE NEW UNLESS OTHERWISE NOTED.
10. DO NOT ALLOW ANY WORK TO BE COVERED UP OR ENCLOSED UNTIL INSPECTED, TESTED AND APPROVED BY OWNER'S REPRESENTATIVE OR AUTHORITY HAVING JURISDICTION.
11. THIS CONTRACT REQUIRES THE PLUMBING, FIRE PROTECTION, EMCS, AND MECHANICAL SUBCONTRACTORS TO CAREFULLY COORDINATE THEIR WORK WITH EACH OTHER, THE GENERAL CONTRACTOR AND OTHER TRADES. PRIORITY SHALL BE GIVEN IN THE FOLLOWING ORDER:

    A. GRAVITY FLOW; SEWER, STORM DRAIN, DOWNSPOUT AND CONDENSATE DRAIN PIPING.

    B. EQUIPMENT AND DUCTWORK.

    C. FORCED AND PRESSURE PIPING SUCH AS WATER, FIRE SPRINKLER, AND GAS PIPING.
12. PROVIDE ACCESS PANELS FOR ALL TRAP PRIMERS, WATER HAMMER ARRESTORS AND WATER ISOLATION VALVES THAT ARE CONCEALED IN WALL CAVITY OR CEILING SPACE.
13. CONTRACTOR SHALL PROVIDE DIELECTRIC UNIONS, NIPPLES OR FLANGES AT CONNECTION POINTS FOR ALL DISSIMILAR METALS.
14. DRAWINGS ARE DIAGRAMMATIC AND MAY NOT SHOW ALL OFFSETS IN PIPING. COORDINATE THIS WORK WITH THE WORK OF OTHER TRADES AND PROVIDE ALL NECESSARY OFFSETS.
15. ALL PENETRATIONS OF REQUIRED FIRE-RATED WALLS, PARTITIONS, AND FLOORS SHALL BE PROVIDED WITH FIRE STOPPING MATERIAL PER IBC.
16. ALL PENETRATIONS OF REQUIRED FIRE-RATED WALLS, PARTITIONS, AND FLOORS SHALL BE PROVIDED WITH FIRE STOPPING MATERIAL AS REQUIRED AND IN ACCORDANCE WITH ASTM E 814, FM P7825, AND UL 1479.
17. NO CUTTING OR DRILLING OF ANY STRUCTURAL MEMBERS WILL BE PERMITTED WITHOUT THE APPROVAL OF THE ARCHITECT.
18. INSTALL ALL PIPING AS HIGH AS POSSIBLE IN CEILING PLENUM TO ALLOW FOR FUTURE WORK.
19. PAINT ALL EXPOSED PIPING AND/OR DUCTWORK TO MATCH SURROUNDING COLOR. PROVIDE ESCUTCHEONS WHERE EXPOSED PIPING PENETRATES FINISHED WALLS AND CEILINGS. PROVIDE PAINTED TRIM WHERE EXPOSED DUCTWORK PENETRATES FINISHED WALLS AND CEILINGS.
20. INSTALLATION SHALL BE GUARANTEED TO BE FREE OF DEFECTS FOR ONE (1) YEAR FROM FINAL DATE OF ACCEPTANCE OF THE PROJECT AS A WHOLE.

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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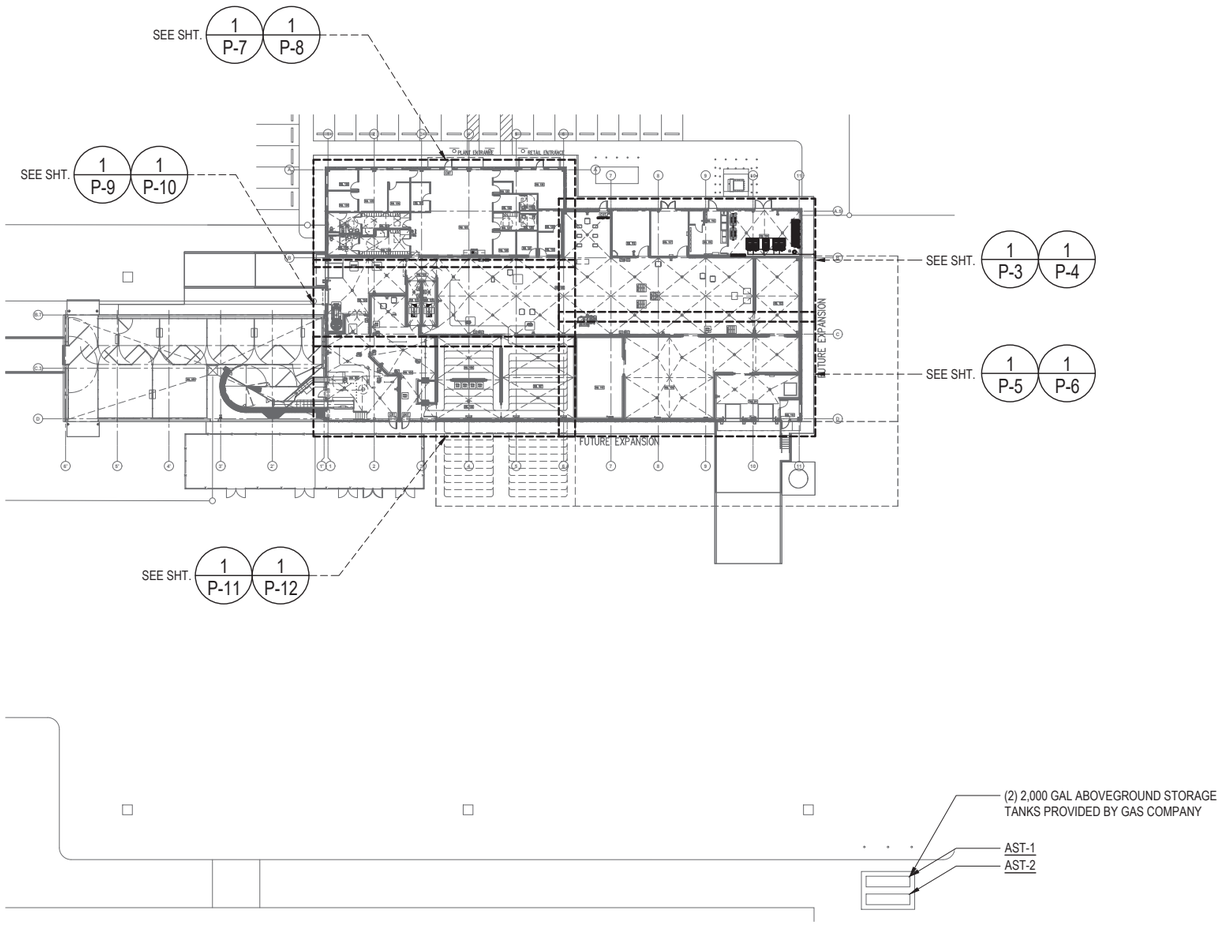
SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
PLUMBING LEGEND, ABBREVIATIONS, AND NOTES

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE:

APPROVED:
CHIEF ENGINEER DATE

DRAWING NO. P-1



1 P-2 OVERALL PLUMBING SITE PLAN
1/32" = 1'-0"

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

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SHEET TITLE
OVERALL PLUMBING SITE PLAN

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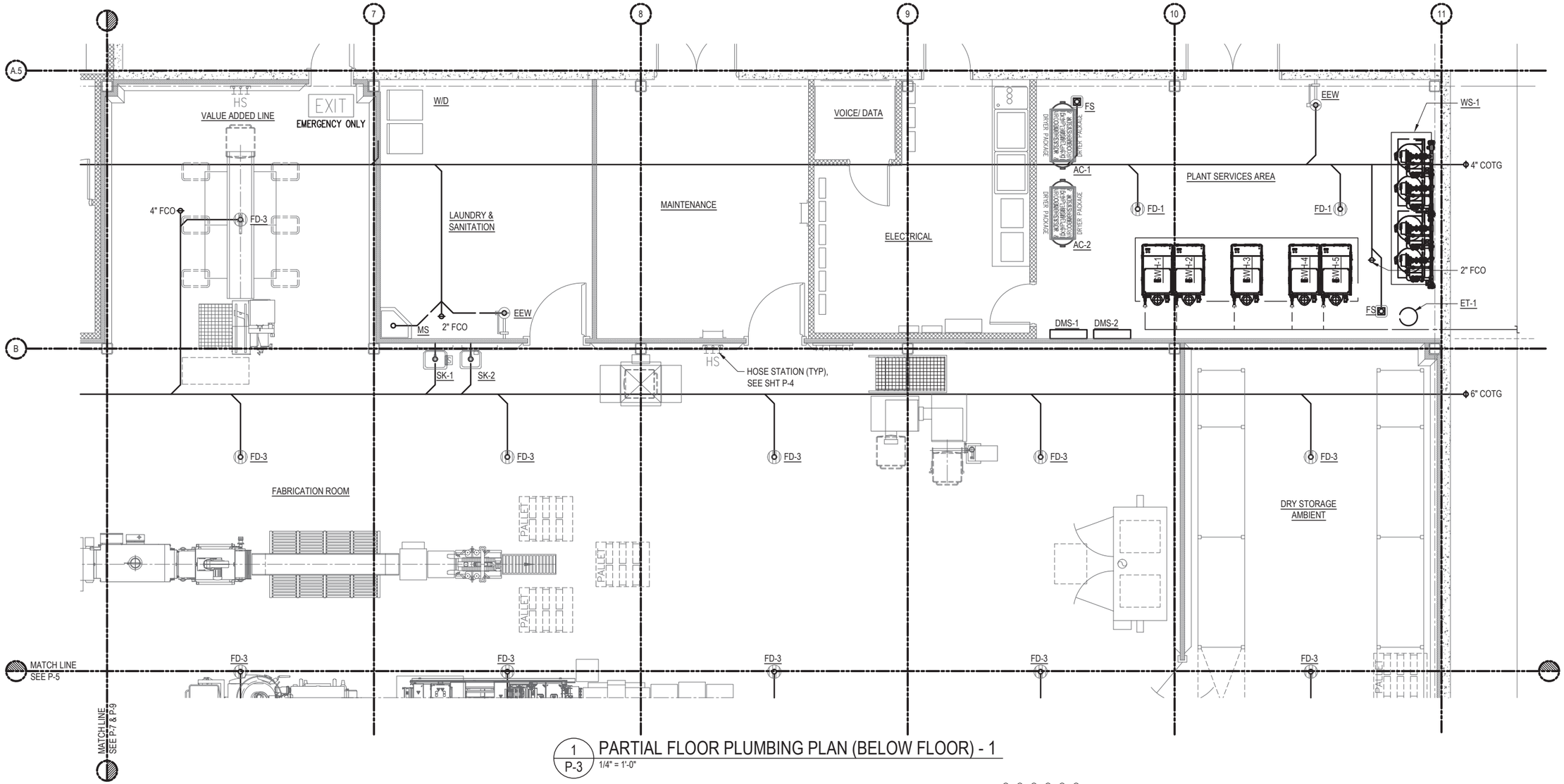
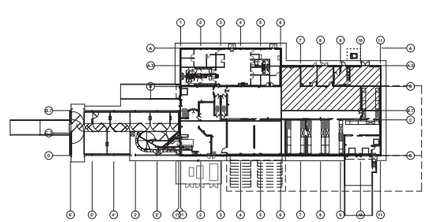
DRAWING NO. P-2



1 / P-3 PARTIAL FLOOR PLUMBING PLAN (BELOW FLOOR) - 1

1/4" = 1'-0"



KEYPLAN

NOT TO SCALE

GRAPHIC SCALE

2' 0 5' 10'

1/4"=1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
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SHEET TITLE
PARTIAL FLOOR PLUMBING PLAN (BELOW FLOOR) - 1

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE: 1/4" = 1'-0"

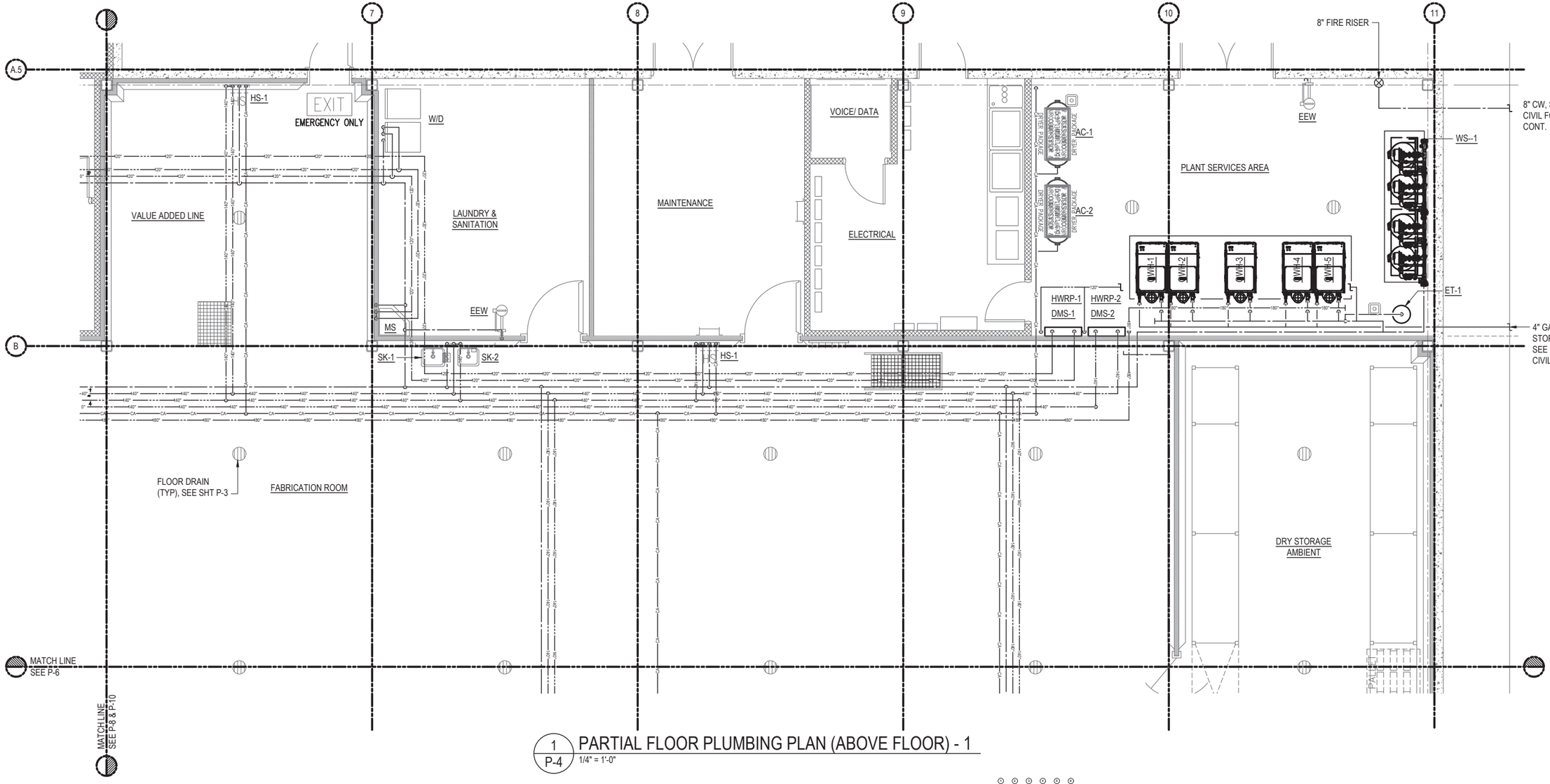
APPROVED:

CHIEF ENGINEER — DATE

DRAWING NO. P-3

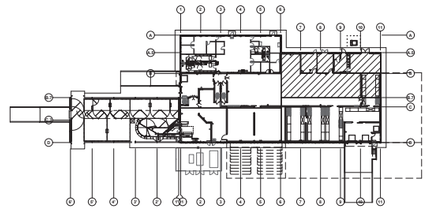
SHEET NO. 70 OF 106 SHEETS

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY



1/P-4 PARTIAL FLOOR PLUMBING PLAN (ABOVE FLOOR) - 1

1/4" = 1'-0"



KEYPLAN

NOT TO SCALE

GRAPHIC SCALE

2' 0 5' 10'

1/4"=1'-0"

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PROJECT NO. DOASW07

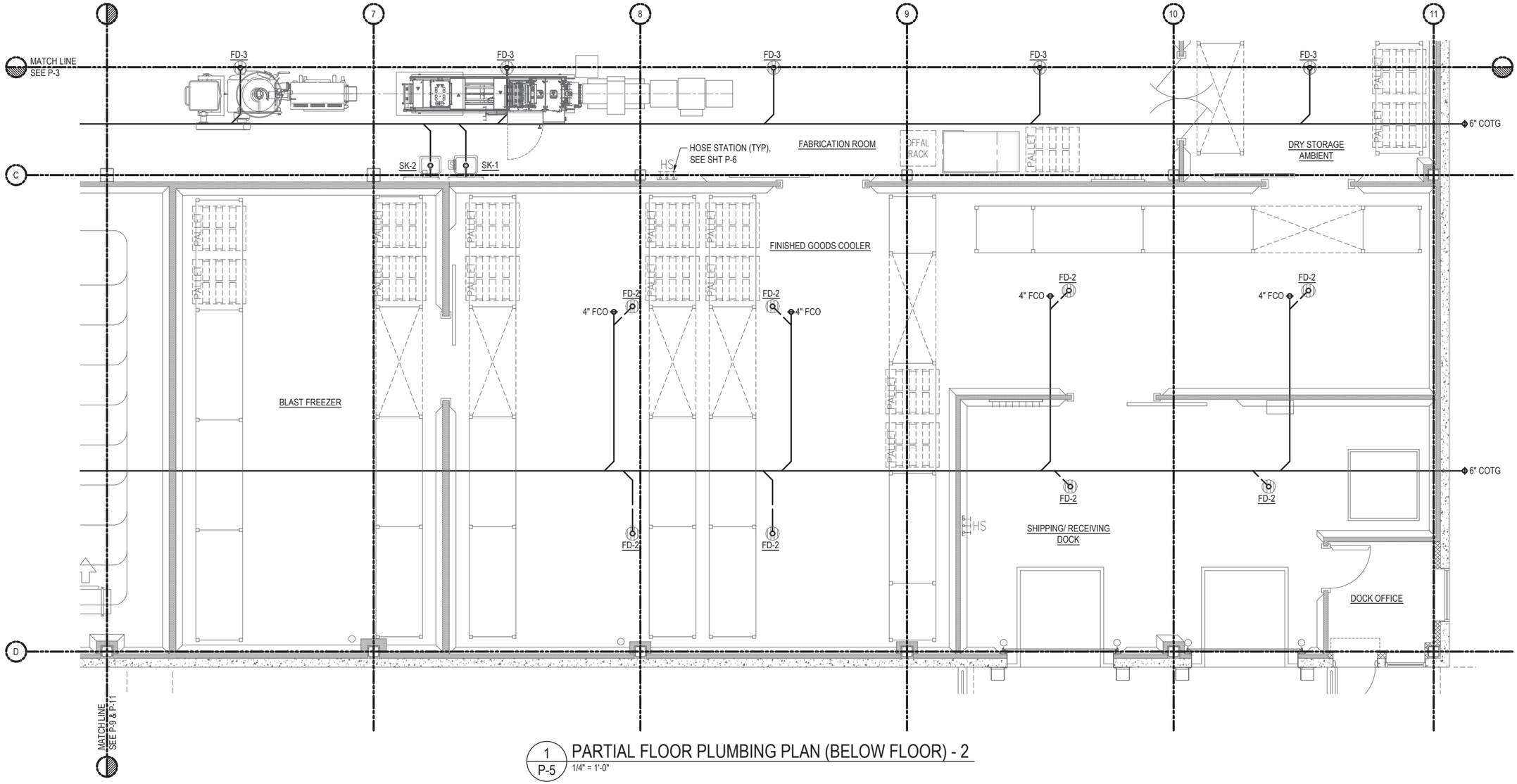
SHEET TITLE
PARTIAL FLOOR PLUMBING PLAN (ABOVE FLOOR) - 1

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE: 1/4" = 1'-0"

APPROVED:

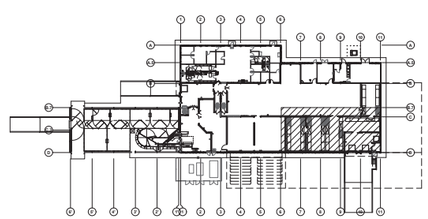
CHIEF ENGINEER DATE

DRAWING NO. P-4



1 / P-5 PARTIAL FLOOR PLUMBING PLAN (BELOW FLOOR) - 2

1/4" = 1'-0"



KEYPLAN

NOT TO SCALE

GRAPHIC SCALE

2' 0 5' 10'

1/4"=1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

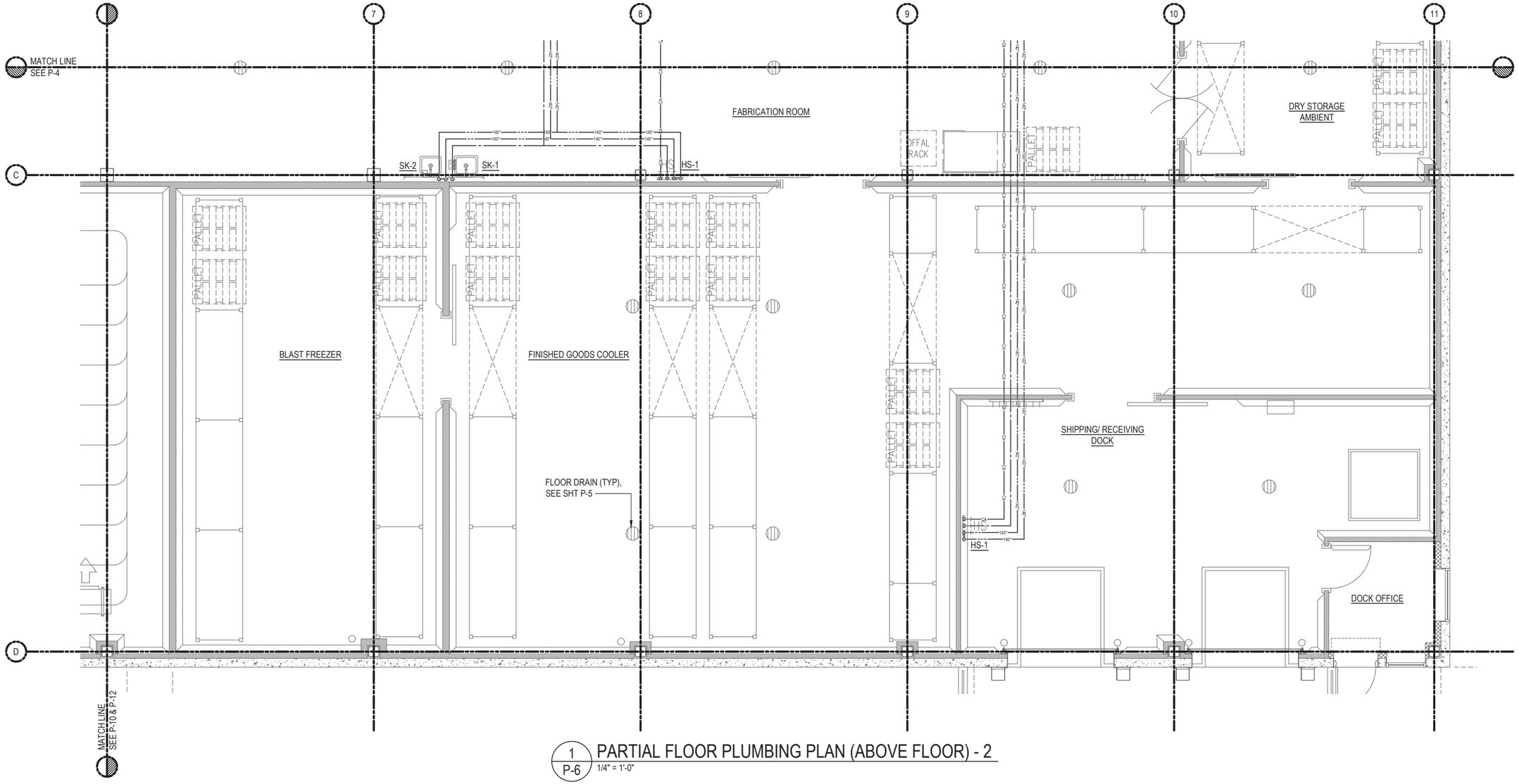
SHEET TITLE
PARTIAL FLOOR PLUMBING PLAN (BELOW FLOOR) - 2

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE: 1/4" = 1'-0"

APPROVED:

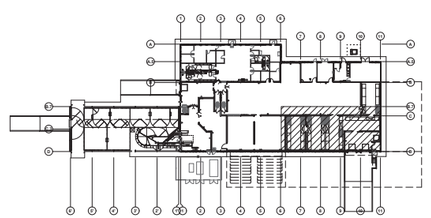
CHIEF ENGINEER DATE

DRAWING NO. P-5



1 / P-6 PARTIAL FLOOR PLUMBING PLAN (ABOVE FLOOR) - 2

1/4" = 1'-0"



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PROJECT NO. DOASW07

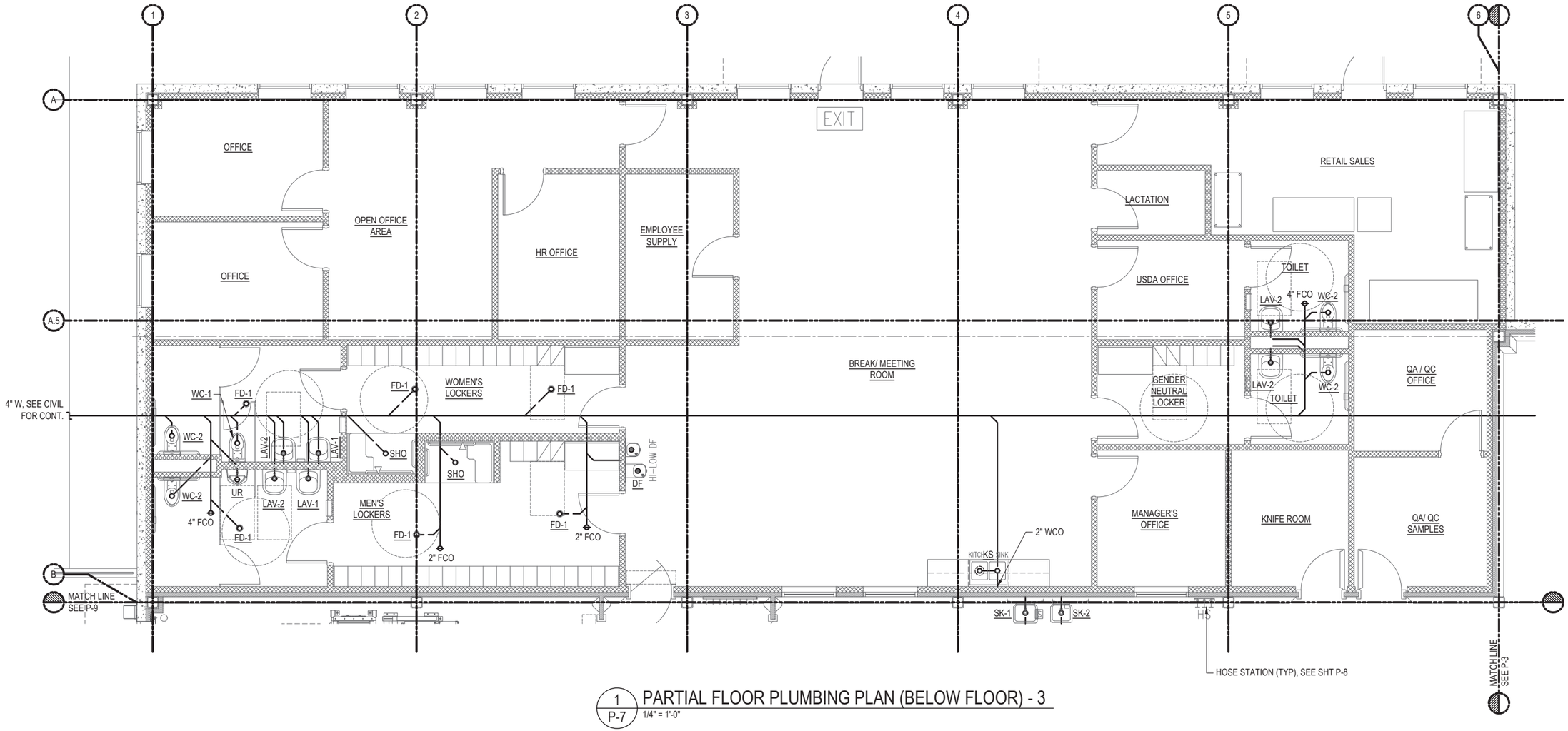
SHEET TITLE
PARTIAL FLOOR PLUMBING PLAN (ABOVE FLOOR) - 2

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE: 1/4" = 1'-0"

APPROVED:

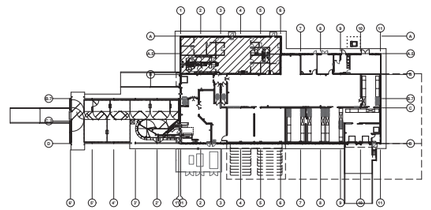
CHIEF ENGINEER DATE

DRAWING NO. P-6



1 / P-7 PARTIAL FLOOR PLUMBING PLAN (BELOW FLOOR) - 3

1/4" = 1'-0"



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GRAPHIC SCALE

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SHEET TITLE
PARTIAL FLOOR PLUMBING PLAN (BELOW FLOOR) - 3

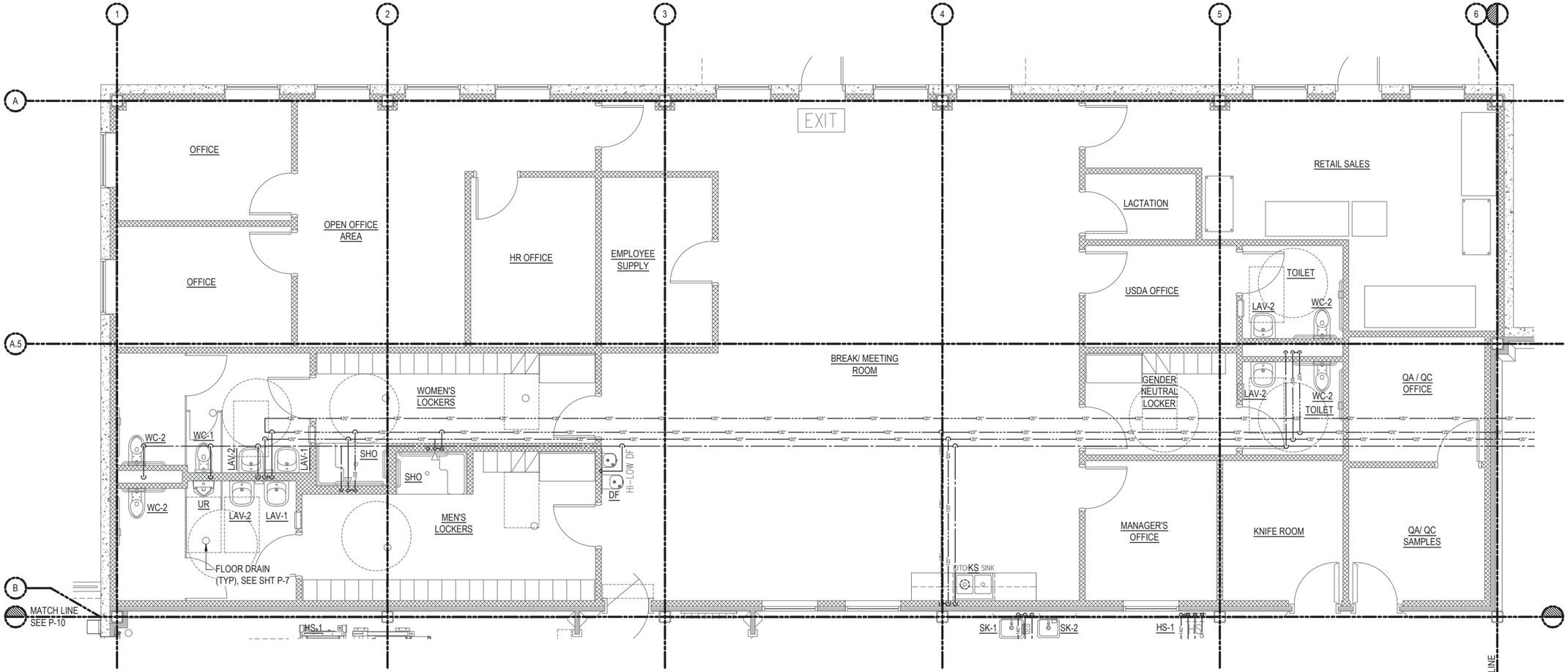
DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE: 1/4" = 1'-0"

APPROVED: _____ DATE

CHIEF ENGINEER

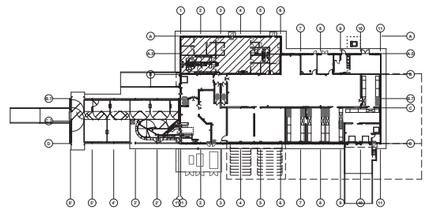
DRAWING NO. P-7

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY



1 / P-8 PARTIAL FLOOR PLUMBING PLAN (ABOVE FLOOR) - 3

1/4" = 1'-0"



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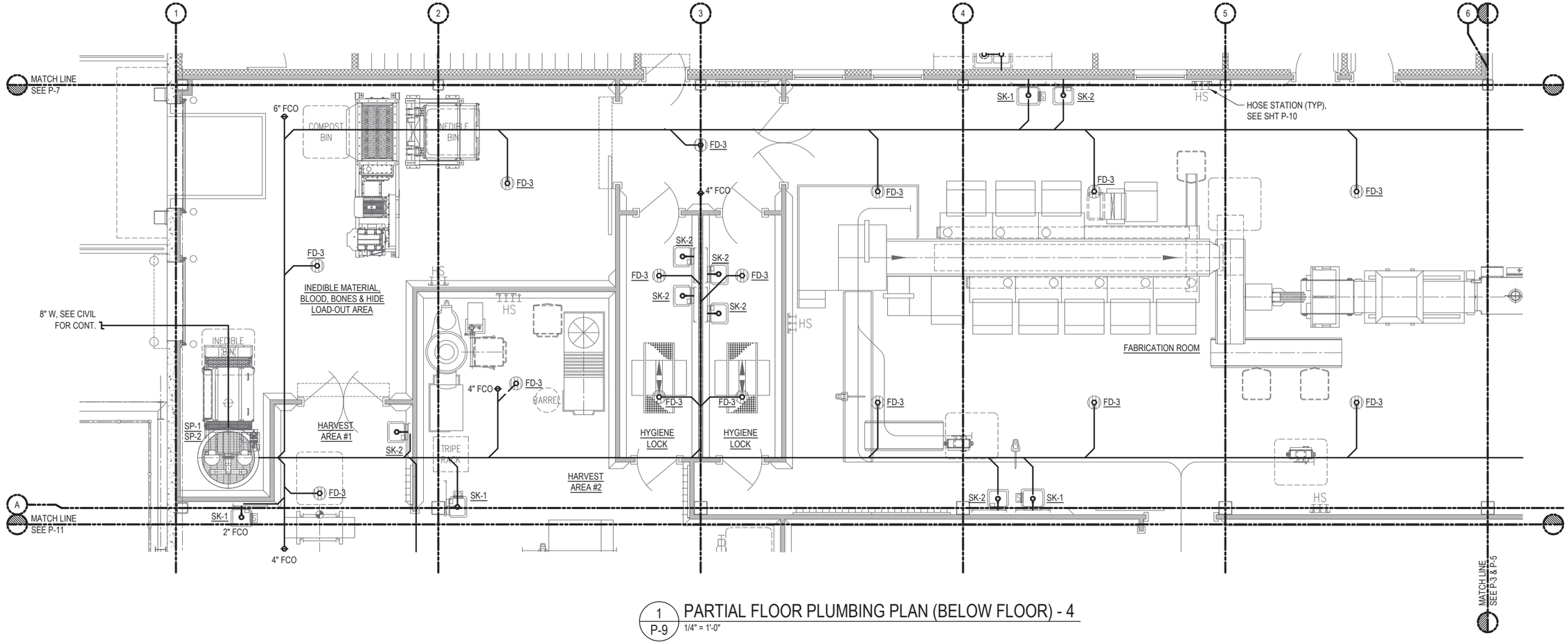
SHEET TITLE
PARTIAL FLOOR PLUMBING PLAN (ABOVE FLOOR) - 3

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE: 1/4" = 1'-0"

APPROVED: _____ DATE

CHIEF ENGINEER

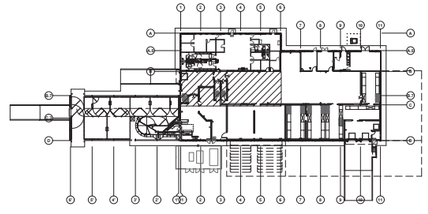
DRAWING NO. P-8



SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY

1 / P-9 PARTIAL FLOOR PLUMBING PLAN (BELOW FLOOR) - 4

1/4" = 1'-0"



KEYPLAN

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GRAPHIC SCALE

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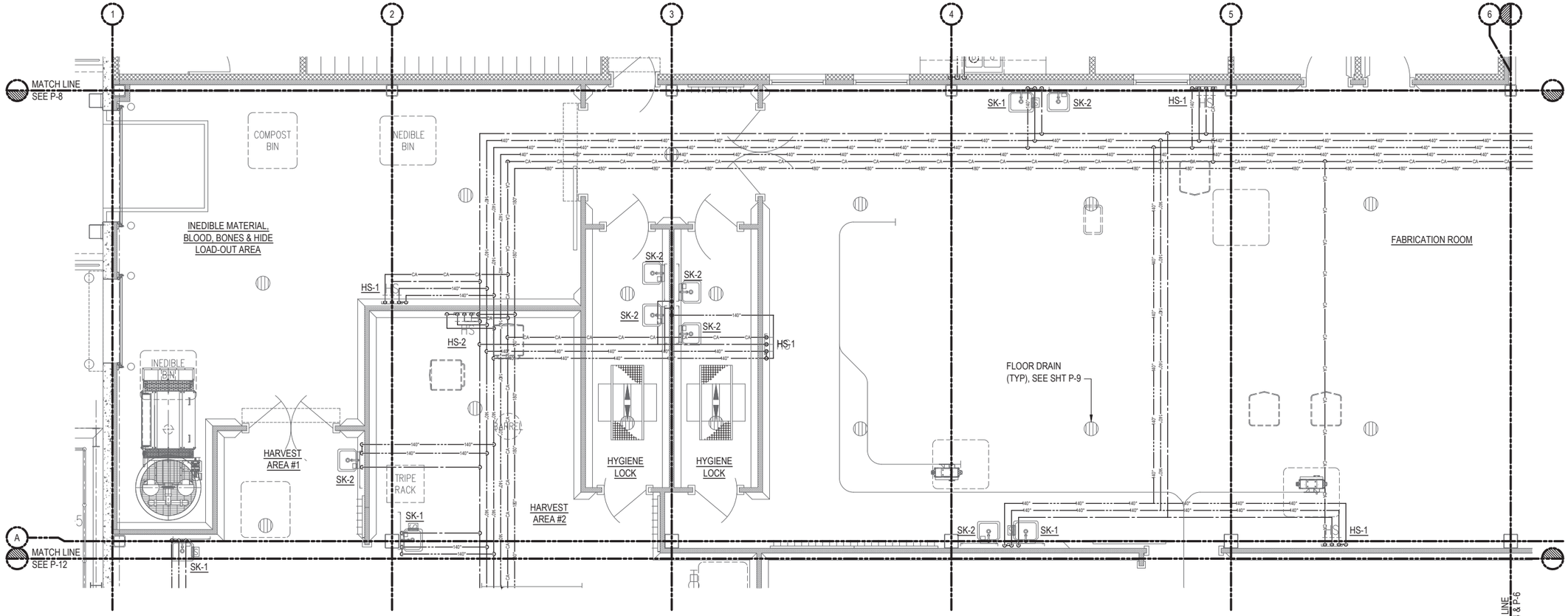
SHEET TITLE
PARTIAL FLOOR PLUMBING PLAN (BELOW FLOOR) - 4

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE: 1/4" = 1'-0"

APPROVED:

CHIEF ENGINEER DATE

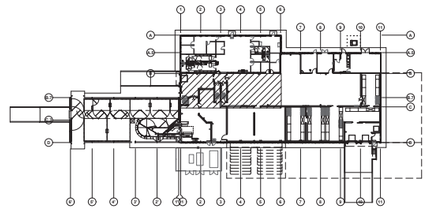
DRAWING NO. P-9



1 P-10 PARTIAL FLOOR PLUMBING PLAN (ABOVE FLOOR) - 4

1/4" = 1'-0"

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY



KEYPLAN

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GRAPHIC SCALE

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1/4"=1'-0"

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SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

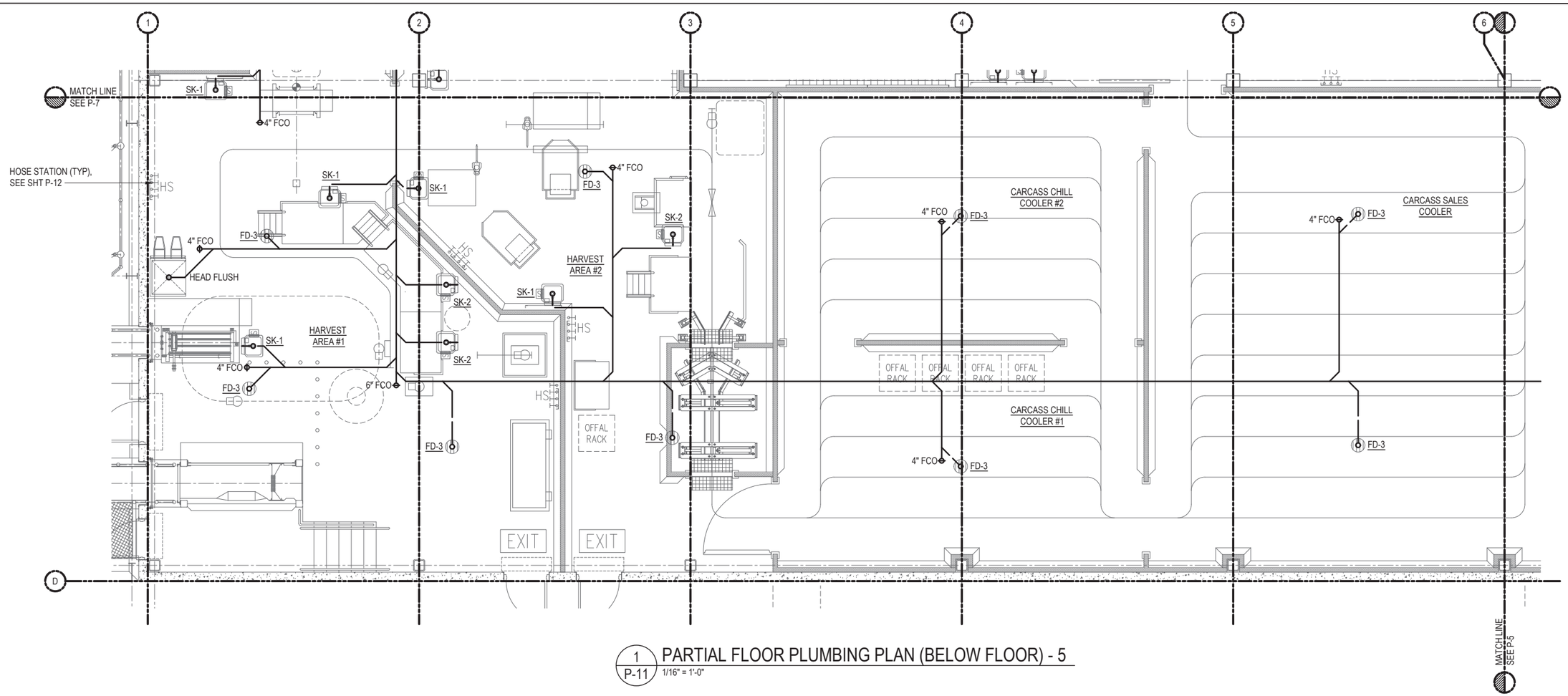
SHEET TITLE
PARTIAL FLOOR PLUMBING PLAN (ABOVE FLOOR) - 4

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE: 1/4" = 1'-0"

APPROVED:

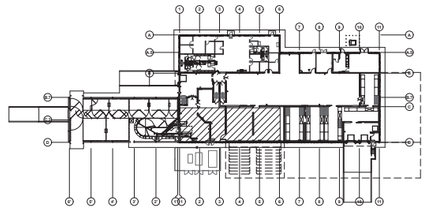
CHIEF ENGINEER DATE

DRAWING NO. P-10



1 P-11 PARTIAL FLOOR PLUMBING PLAN (BELOW FLOOR) - 5
1/16" = 1'-0"

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY



KEYPLAN
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GRAPHIC SCALE
2' 0 5' 10'
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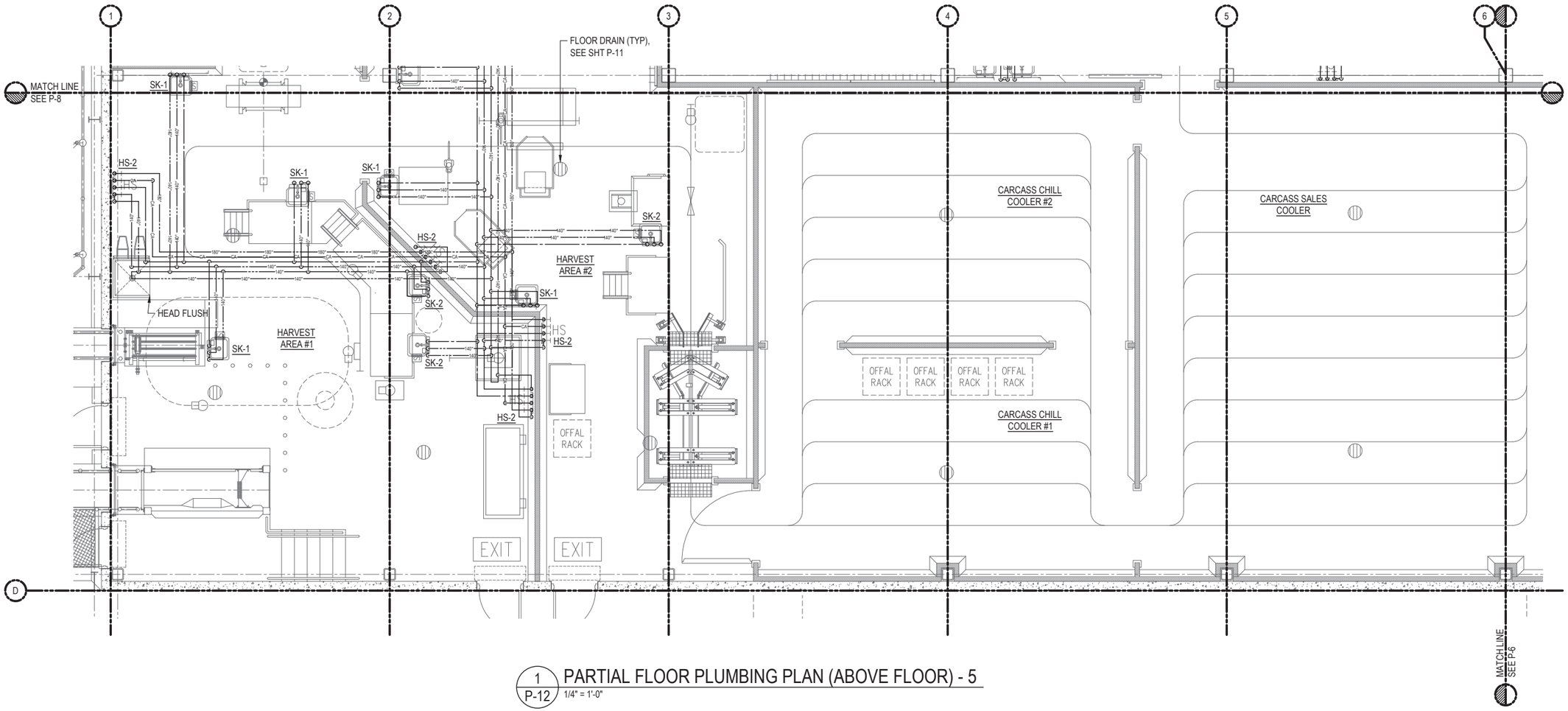
SHEET TITLE
PARTIAL FLOOR PLUMBING PLAN (BELOW FLOOR) - 5

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE: 1/4" = 1'-0"

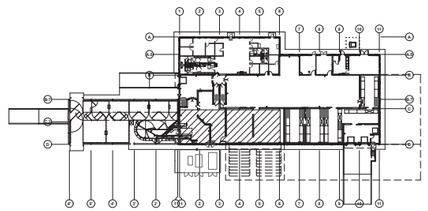
APPROVED:
CHIEF ENGINEER DATE

DRAWING NO. P-11



1 P-12 PARTIAL FLOOR PLUMBING PLAN (ABOVE FLOOR) - 5
1/4" = 1'-0"

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY



KEYPLAN
NOT TO SCALE

GRAPHIC SCALE
2' 0 5' 10'
1/4"=1'-0"

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SHEET TITLE
PARTIAL FLOOR PLUMBING PLAN (ABOVE FLOOR) - 5

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE: 1/4" = 1'-0"

APPROVED:
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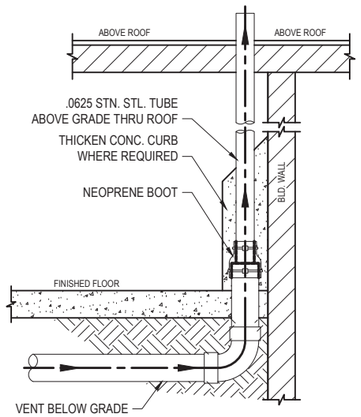
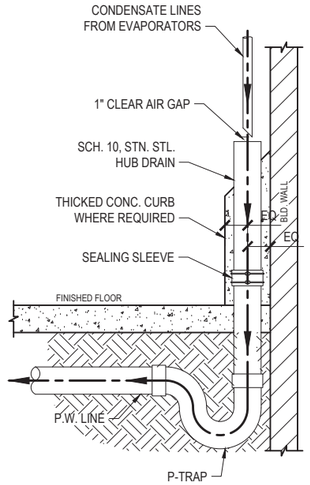
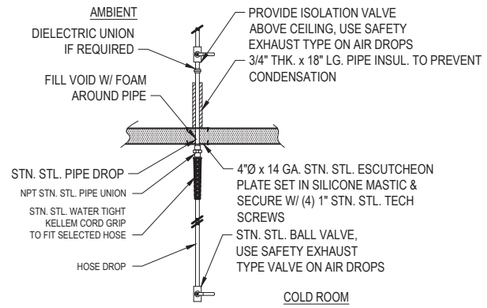
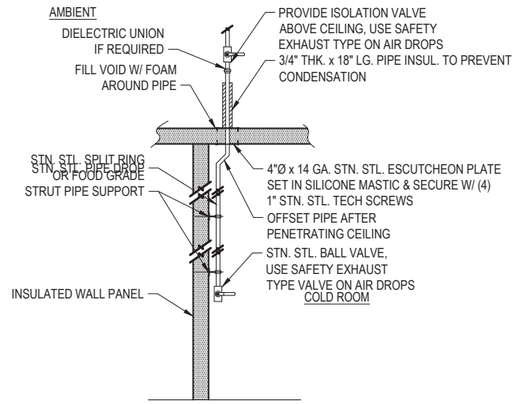
DRAWING NO. P-12









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SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
PLUMBING DETAILS

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE:

APPROVED:
CHIEF ENGINEER DATE

DRAWING NO. P-13

SHEET NO. 80 OF 106 SHEETS

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY

GAS WATER HEATER - GWH (PRELIMINARY)

MARK NO.	LOCATION	TYPE	HEAT INPUT (BTUH)	WATER TEMPERATURE (°F)		RECOVERY (GPH)	V / Ø / HZ	PIPE CONNECTION (IN)				DIMENSIONS (W"xD"xH")	UNIT WEIGHT (LBS)	REMARKS
				ENTERING	LEAVING			WATER INLET	WATER OUTLET	GAS	CONDENSATE			
GWH-1, GWH-2, GWH-3, GWH-4, GWH-5	PLANT SERVICES	PROPANE, TANKLESS	1,350,000	71	180	1,442	120/1/60	2	2	1 1/2	3/4	28 x 42 x 78	1,222	PROVIDE WITH INDOOR GAS REGULATORS, FLUE DISCHARGE TO OUTDOORS.

HOT WATER RECIRCULATING PUMP - HWRP (PRELIMINARY)

MARK NO.	LOCATION	SERVICE	TYPE	CAPACITY			MOTOR		UNIT WEIGHT (LBS)	REMARKS
				FLOW RATE (GPM)	TOTAL DYN HEAD (FT)	MIN EFF %	HP	V / Ø / HZ		
HWRP-1	PLANT SERVICES	DHWR	INLINE CIRCULATING	2.0	6.0	-	0.14	115/1/60	5.4	HIGH EFFICIENCY EC MOTOR, INSTALL PUMP AND NECESSARY VALVESS PER PUMP MANUFACTURER. PROVIDE THERMOSTATIC MIXING VALVE WITH FLOW COEFFICIENT OF 3.8 OR HIGHER.
HWRP-2	PLANT SERVICES	PHWR / PSWR	INLINE CIRCULATING	7.1	34.6	-	0.84	115/1/60	42.1	HIGH EFFICIENCY EC MOTOR, INSTALL PUMP AND NECESSARY VALVESS PER PUMP MANUFACTURER. PROVIDE THERMOSTATIC MIXING VALVE WITH FLOW COEFFICIENT OF 3.8 OR HIGHER.

SUMP PUMP - SP (PRELIMINARY)

MARK NO.	LOCATION	SERVICE	TYPE	CAPACITY			MOTOR		UNIT WEIGHT (LBS)	REMARKS
				FLOW RATE (GPM)	TOTAL DYN HEAD (FT)	MIN EFF %	HP	V / Ø / HZ		
SP-1, SP-2	INEDIBLE MATERIAL	INDUSTRIAL WASTE	END SUCTION		90					WORK IN PROGRESS

DIGITAL MIXING STATION - DMS (PRELIMINARY)

MARK NO.	LOCATION	TYPE	SERVICE	CONNECTIONS (IN)			FLOW COEFFICIENT (CV)	V / Ø / HZ	REMARKS
				INLET	OUTLET	RETURN			
DMS-1	PLANT SERVICES	MIXING STATION	DOMESTIC HOT WATER	2	2 1/2	1	26.9	115 / 1 / 60	WALL MOUNTED MIXING STATION W/ ELECTRIC ACTUATOR, PROVIDE WITH FLOW/BTU MONITORING PACKAGE, AND CONDENSATE NEUTRALIZER.
DMS-2	PLANT SERVICES	MIXING STATION	PROCESS HOT WATER	2	3	2	42.7	115 / 1 / 60	WALL MOUNTED MIXING STATION W/ ELECTRIC ACTUATOR, PROVIDE WITH FLOW/BTU MONITORING PACKAGE, AND CONDENSATE NEUTRALIZER.

WATER SOFTENER - WS (PRELIMINARY)

MARK NO.	LOCATION	TYPE	NO. OF TANKS	TANK SIZE (IN)	MAX. FLOW (GPM)	PRESSURE DROP (PSI)	V / Ø / HZ	WEIGHT (LBS)	REMARKS
WS-1	PLANT SERVICES	PROGRESSIVE FLOVE	4	21 x 62	105	12	120 / 1 / 60	4,600	FACTORY PRE-ASSEMBLED COMPLETE WITH RESIN, GRAVEL AND (4) 30" x 50" BRINE TANKS.

AIR COMPRESSOR - AC (PRELIMINARY)

MARK NO.	LOCATION	AREA SERVED	TYPE	CAPACITY (CFM)	DISCHARGE PRESS (PSIG)	RECEIVER CAP (GAL)	MOTOR		UNIT WEIGHT (LBS)	REMARKS
							HP	V / Ø / HZ		
AC-1, AC-2	PLANT SERVICES	INDUSTRIAL	TANK MOUNTED	59	107	80	15	460 / 3 / 60	719	OIL INJECTED SCREW TYPE COMPRESSOR, PROVIDED WITH FULL PACKAGE AND INTEGRATED DRYER.

EXPANSION TANK - ET (PRELIMINARY)

MARK NO.	LOCATION	SERVICE	TYPE	VOLUME (GAL)	PRESSURE RATING (PSI)	SYSTEM CONNECTION (IN)	TANK DIMENSIONS (IN)		UNIT WEIGHT (LBS)	REMARKS
							DIAMETER	HEIGHT		
ET-1	PLANT SERVICES	HOT WATER SYSTEM	BLADDER	26	150	3/4	16	40	98	ASME COMPLIANT WITH HEAVY DUTY EPDM BLADDER, FACTORY PRE-CHARGED TO 12 PSI, PROVIDE SEISMIC BRACING, TANK SHALL MOUNTED VERTICALLY.

ABOVEGROUND STORAGE TANK - AST (PRELIMINARY)

MARK NO.	LOCATION	SERVICE	TYPE	VOLUME (GAL)	PRESSURE RATING (PSI)	SYSTEM CONNECTION (IN)	TANK DIMENSIONS (IN)		OPERATING WEIGHT (LBS)	REMARKS
							DIAMETER	LENGTH		
AST-1, AST-2	EXTERIOR	PROPANE	HORIZONTAL - MANIFOLD	2,000	-	-	54	222	-	ASME AND NFPA 58 COMPLIANT, UL142 DOUBLE WALL STORAGE TANK, MILD CARBON STEEL WITH TANK SUPPORTS, FILL PORT WITH CONTAINMENT BUCKET, ACCESSIBLE PLATFORM FOR REFILLS, LEAK AND LEVEL GAUGES, ATMOSPHERIC & EMERGENCY VENTS, ANTI-SIPHON VALVE, AUDIBLE AND VISUAL ALARMS FOR LEAK AND OVERFILL.

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SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
PLUMBING EQUIPMENT SCHEDULES

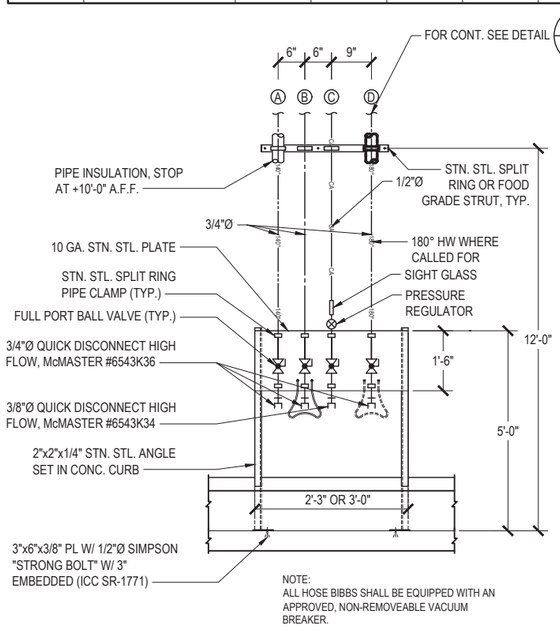
DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE:

APPROVED:
CHIEF ENGINEER DATE

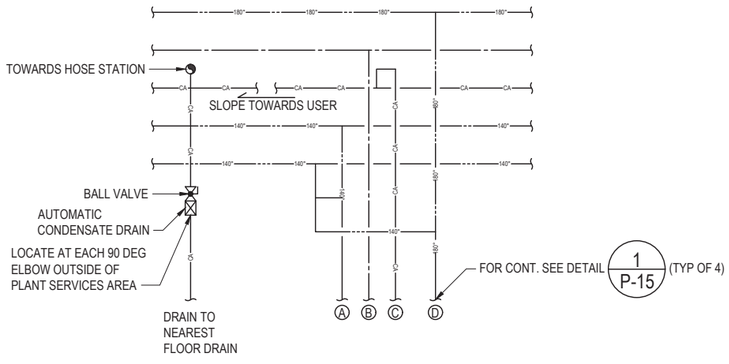
DRAWING NO. P-14

PLUMBING FIXTURE LOCAL CONNECTION SCHEDULE (PRELIMINARY)

SYMBOL	FIXTURE	WASTE	VENT	COLD WATER	HOT WATER	MAXIMUM CONSUMPTION	REMARKS
WC-1	WATER CLOSET	4"	2"	1"	-	1.28 GPF	VITREOUS CHINA WALL MOUNTED WATER CLOSET, 1 1/2" TOP SPUD, SIPHON JET, ELONGATED BOWL, MANUAL FLUSH VALVE, OPEN FRONT SEAT.
WC-2	WATER CLOSET ACCESSIBLE	4"	2"	1"	-	1.28 GPF	SAME AS WC-1 AND ACCESSIBLE.
UR	URINAL ACCESSIBLE	2"	1-1/2"	3/4"	-	1 GPF	VITREOUS CHINA WALL HUNG WASHOUT URINAL WITH 3/4" TOP SPUD, FLUSHING RIM, STRAINER, WALL HANGERS, ACCESSIBLE.
SHO	SHOWER ACCESSIBLE	2"	1-1/2"	1/2"	1/2"	1.5 GPM	WALL MOUNTED FIXED HEAD COMPLETE WITH PRESSURE-BALANCING MIXING VALVE, SEPARATE VOLUME AND TEMPERATURE CONTROLS, AND SHOWER BASE, ACCESSIBLE.
LAV-1	LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"	0.35 GPM	VITREOUS CHINA LAVATORY, FRONT OVERFLOW AND BACK SPLASH, WALL MOUNTED W/ WALL HANGERS, CHROME-PLATED BRASS TAILPIECE W/ INTEGRAL PERFORATED STRAINER, CHROME PLATED P-TRAP AND TURN BALL SUPPLY WITH LOOSE KEY STOPS, AND FAUCET.
LAV-2	LAVATORY ACCESSIBLE	1-1/2"	1-1/2"	1/2"	1/2"	0.35 GPM	SAME AS LAV-1 AND ACCESSIBLE.
KS	KITCHEN SINK	2"	1-1/2"	1/2"	1/2"	2.2 GPM	STAINLESS STEEL, DOUBLE BASIN, FAUCET.
MS	MOP SINK	3"	2"	3/4"	3/4"	4 GPM	ACID RESISTING ENAMELED CAST IRON MOP SINK WITH REMOVABLE VINYL COATED WIRE RIM GUARD, FLOOR MOUNTED. FAUCET WITH VACUUM BREAKER, HOSE THREAD SPOUT AND STOPS IN SHANK.
SK-1	SINK	2"	1-1/2"	1/2"	1/2"	2.2 GPM	-
SK-2	SINK	2"	1-1/2"	1/2"	1/2"	2.2 GPM	-
HS-1	HOSE STATION (140 °F)	-	-	3/4"	3/4"	-	-
HS-2	HOSE STATION (180 °F)	-	-	3/4"	3/4"	-	-
DF	DRINKING FOUNTAIN	2"	1-1/2"	1/2"	-	1.1 GPM	BI-LEVEL, WALL MOUNTED, RATED FOR INDOOR USE, ACCESSIBLE.
EEW	EMERGENCY EYE WASH/SHOWER	2"	1-1/2"	1/2"	-	23 GPM	FREE STANDING, W/ EYE/FACE WASH.
W/D	WASHING MACHINE OUTLET BOX	-	-	1/2"	1/2"	-	WASHING MACHINE OUTLET BOX, FIRE RATED AS REQUIRED. QUARTER TURN VALVE AND WATER HAMMER ARRESTOR.
FD-1	FLOOR DRAIN	2"	2"	-	-	-	CAST IRON BODY AND FLASHING COLLAR WITH POLISHED BRONZE ADJUSTABLE VANDAL PROOF GRATE, PROVIDE WITH TRAP PRIMER AS INDICATED. TRAP PRIMER SHALL BE PROVIDED WITH ALL NECESSARY APPURTENANCES (I.E. VALVES, ACCESS PANELS, ETC.).
FD-2	FLOOR DRAIN	4"	2"	-	-	-	CAST IRON BODY AND FLASHING COLLAR WITH POLISHED BRONZE ADJUSTABLE VANDAL PROOF GRATE, PROVIDE WITH TRAP PRIMER AS INDICATED. TRAP PRIMER SHALL BE PROVIDED WITH ALL NECESSARY APPURTENANCES (I.E. VALVES, ACCESS PANELS, ETC.).
FD-3	FLOOR DRAIN	4"	2"	-	-	-	SCHEDULE 10, 316L STAINLESS STEEL BODY AND FLASHING COLLAR, VANDAL PROOF GRATE, PROVIDE WITH TRAP PRIMER AS INDICATED. TRAP PRIMER SHALL BE PROVIDED WITH ALL NECESSARY APPURTENANCES (I.E. VALVES, ACCESS PANELS, ETC.)
FS	FLOOR DRAIN	2"	2"	-	-	-	CAST IRON FLANGED RECEPTOR WITH ACID RESISTANT COATED INTERIOR, NICKEL BRONZE RIM AND GRATE, ALUMINUM DOME STRAINER, FLASHING CLAMP.
TP	TRAP PRIMER	-	-	1/2"	-	-	PRESSURE DROP ACTIVATED TRAP PRIMING MANIFOLD AND AIR GAP WITH DISTRIBUTION UNIT. INSTALL MINIMUM 12" ABOVE FINISHED FLOOR.



1/P-15 HOSE STATION MOUNTED IN CURB
NOT TO SCALE



2/P-15 SCHEMATIC DIAGRAM AT MAIN PIPING HEADER
NOT TO SCALE

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

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THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

EXPIRATION DATE OF THE LICENSE XX/XX/XXXX

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

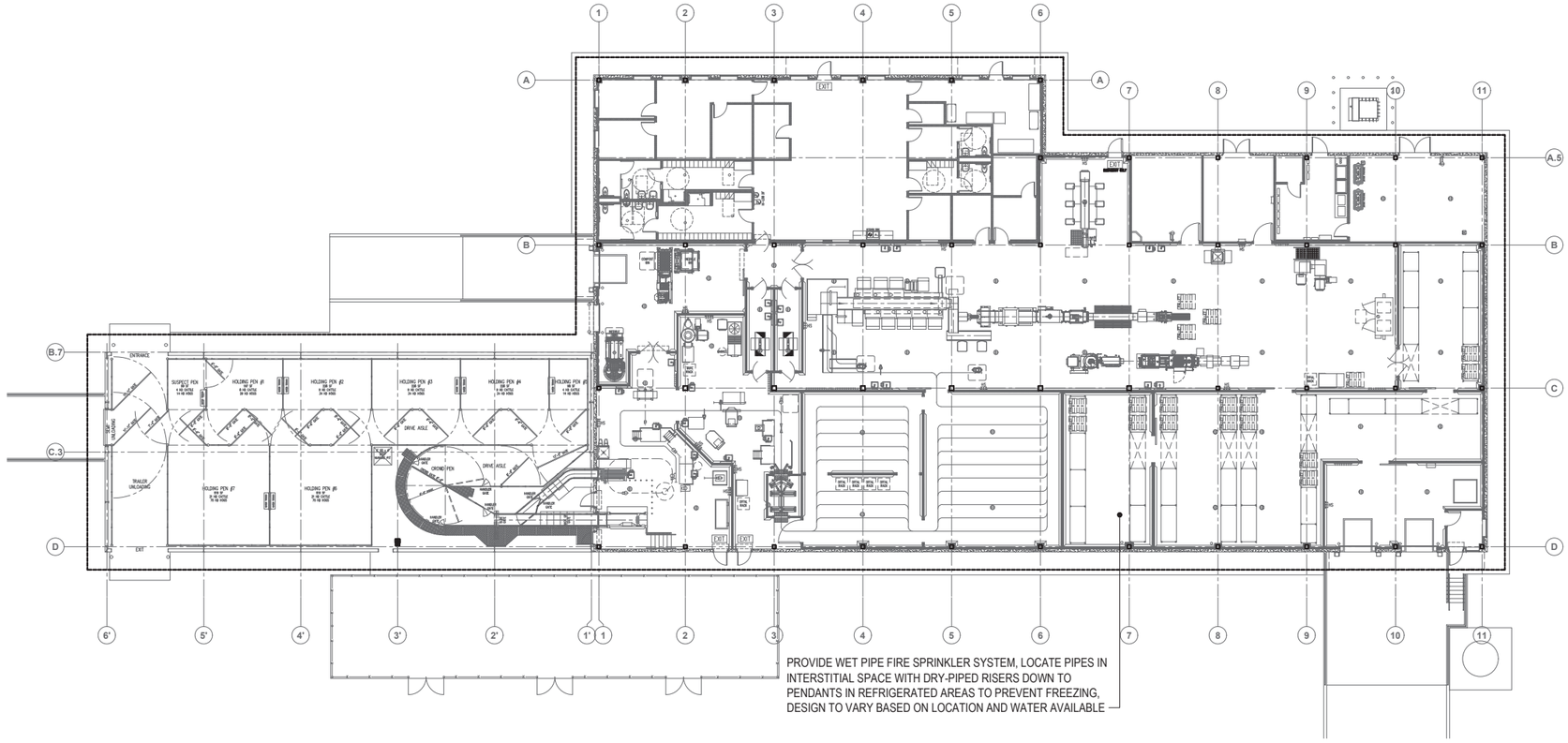
SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
PLUMBING FIXTURE SCHEDULES AND DETAILS

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE:

APPROVED:
CHIEF ENGINEER DATE

DRAWING NO. P-15



1 / FP-1 OVERALL FIRE SPRINKLER PLAN

1/16" = 1'-0"

GRAPHIC SCALE

8' 0 20' 40'

1/16"=1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
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PROJECT NO. DOASW07

SHEET TITLE
OVERALL FIRE SPRIINKLER PLAN

DESIGNED BY:	SUBMITTED:
DRAWN BY:	DATE:
CHECKED BY:	SCALE: 1/16" = 1'-0"

APPROVED:

CHIEF ENGINEER DATE

DRAWING NO. FP-1

ELECTRICAL SYMBOL LIST / MOUNTING HEIGHT SCHEDULE

MOUNTING HEIGHT FROM FLOOR TO		(SPECIAL MOUNTING HEIGHTS INDICATED ON PLAN)	
TOP	℄	SYMBOL NEW	DESCRIPTION
		(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)
		(1)	LED LUMINAIRE, WALL MOUNTED, WITH EMERGENCY BATTERY PACK (NUMERAL IN CIRCLE CORRESPONDS TO LUMINAIRE SCHEDULE)
			LED LUMINAIRE, SERVED THRU ADJOINING LUMINAIRE
		(1) EM	LUMINAIRE, CEILING MOUNTED (NUMERAL IN CIRCLE CORRESPONDS TO LUMINAIRE SCHEDULE), "EM" DENOTES LUMINAIRE WITH EMERGENCY BATTERY PACK
		(1)H	LUMINAIRE, WALL MOUNTED (NUMERAL IN CIRCLE CORRESPONDS TO LUMINAIRE SCHEDULE)
	8'–0"		ILLUMINATED EXIT SIGN, WALL MOUNTED, DIRECTIONAL ARROWS AS INDICATED
			ILLUMINATED EXIT SIGN, CEILING MOUNTED, DIRECTIONAL ARROWS AS INDICATED
			EMERGENCY LUMINAIRE, WALL MOUNTED
	46"	$a	LIGHT SWITCH, FLUSH WALL MOUNTED, 1P20A, 120/277V, 1HP MAX. (LETTER INDICATES LUMINAIRES CONTROLLED)
	46"	$D	DIMMER SWITCH, FLUSH WALL MOUNTED, DIMMER SHALL BE COMPATIBLE WITH THE DIMMING DRIVER IT IS CONTROLLING.
		$M	MANUAL MOTOR STARTER WITH THERMAL OVERLOAD, 1P20A, 1HP MAX.
	46"		SWITCHBANK
	46"	H	OCCUPANCY SENSOR LIGHT SWITCH, SELF–CONTAINED, WALL MOUNTED
		O	LIGHTING CONTROL SYSTEM OCCUPANCY SENSOR, CEILING MOUNTED
		OH	LIGHTING CONTROL SYSTEM OCCUPANCY SENSOR, WALL/CEILING CORNER MOUNTED
		L OH	LIGHTING CONTROL SYSTEM OCCUPANCY SENSOR, WALL/CEILING CORNER MOUNTED, LONG RANGE/AISLE LENS COVERAGE
		RC	LIGHTING CONTROL SYSTEM ROOM CONTROLLER MODULE, MOUNT IN ACCESSIBLE CEILING SPACE
		D	LIGHTING CONTROL SYSTEM DAYLIGHT SENSOR, CEILING MOUNTED
	46"	S H	LIGHTING CONTROL SYSTEM MANUAL SWITCH, TYPE AS INDICATED IN CONTROL SCHEMATICS, WALL MOUNTED
	46"	D H	LIGHTING CONTROL SYSTEM DIMMER/MANUAL SWITCH, WALL MOUNTED
	18"		RECEPTACLE, DUPLEX, GROUNDING TYPE, 125V, NEMA TYPE 5–20R
	18"		RECEPTACLE FOR COMPUTER WORKSTATION, DUPLEX, GROUNDING TYPE, 125V, NEMA TYPE 5–20R
	18"		RECEPTACLE, DUPLEX, GFCI TYPE, 125V, NEMA TYPE 5–20R
	18"		RECEPTACLE, QUADRUPLEX, GROUNDING TYPE, 125V, NEMA TYPE 5–20R
			RECEPTACLE, DUPLEX, FLUSH FLOOR MOUNTED, GROUNDING TYPE, 125V, NEMA 5–20R
	18"		RECEPTACLE, SINGLE, SPECIAL PURPOSE, 125V, NEMA CONFIGURATION AS NOTED
	18"		RECEPTACLE, SINGLE, SPECIAL PURPOSE, NEMA CONFIGURATION AS NOTED
			RECEPTACLE, 60A, 480V, 3ø
6'–0"			PANELBOARD
			ELECTRICAL EQUIPMENT
		JH	JUNCTION BOX, LARGE, WALL MOUNTED
		J	JUNCTION BOX, LARGE, HORIZONTALLY MOUNTED
		J	JUNCTION BOX, HORIZONTALLY MOUNTED
		JH	JUNCTION BOX, WALL MOUNTED
		TH	TIME SWITCH
		CH	CONTACTOR

MOUNTING HEIGHT FROM FLOOR TO		(SPECIAL MOUNTING HEIGHTS INDICATED ON PLAN)	
TOP	℄	SYMBOL NEW	DESCRIPTION
			EQUIPMENT TERMINATION WITH FLEXIBLE CONDUIT WHIP
			MAGNETIC MOTOR STARTER, FURNISHED BY MECHANICAL CONTRACTOR & INSTALLED BY ELECTRICAL CONTRACTOR
5'–0"			NON–FUSED DISCONNECT SWITCH, 3P30A UNLESS OTHERWISE NOTED, VOLTAGE TO MATCH CIRCUITING
5'–0"			ENCLOSED CIRCUIT BREAKER
		T	TRANSFORMER, FLOOR MOUNTED
			TELEPHONE BACKBOARD
6'–0"			SIGNAL CABINET FOR SYSTEM NOTED
	18"	DH	TELECOMMUNICATIONS (TEL/DATA) SYSTEM OUTLET BOX WALL MOUNTED, WITH BLANK COVER PLATE
	18"	VH	CATV OUTLET BOX, WALL MOUNTED, WITH BLANK COVER PLATE
			TELECOMMUNICATIONS (TEL/DATA) OUTLET BOX, FLUSH FLOOR MOUNTED
5'–0"			FIRE PROTECTION EQUIPMENT CABINET, TYPE AS INDICATED
	46"	FH	FIRE ALARM MANUAL PULL STATION
	90"	FH	FIRE ALARM AUDIO ONLY SIGNALLING DEVICE, WALL MOUNTED
	80" TO BOTTOM	FH	FIRE ALARM AUDIO/VISUAL (15 CANDELA UNLESS OTHERWISE INDICATED) SIGNALLING DEVICE, WALL MOUNTED
	80" TO BOTTOM	FH	FIRE ALARM VISUAL (15 CANDELA UNLESS OTHERWISE INDICATED) SIGNALLING DEVICE, WALL MOUNTED
		F	FIRE ALARM AUDIO/VISUAL (15 CANDELA UNLESS OTHERWISE INDICATED) SIGNALLING DEVICE, CEILING MOUNTED
		F	FIRE ALARM VISUAL (15 CANDELA UNLESS OTHERWISE INDICATED) SIGNALLING DEVICE, CEILING MOUNTED
		S	SMOKE DETECTOR, CEILING MOUNTED
		TS	FIRE SPRINKLER TAMPER SWITCH CONNECTION
		FS	FIRE SPRINKLER WATERFLOW ALARM SWITCH CONNECTION
		PS	FIRE SPRINKLER WATERFLOW ALARM PRESSURE SWITCH CONNECTION
		SV	FIRE PROTECTION PREACTION SOLENOID VALVE RELEASE
		D	DUCT SMOKE DETECTOR CONNECTION, DUCT DETECTOR FURNISHED BY MECHANICAL CONTRACTOR
			CONCEALED CONDUIT IN FINISHED FLOOR OR BELOW GRADE (HASHMARKS INDICATE QUANTITY OF CURRENT CARRYING WIRES WITHIN, NO HASHMARKS INDICATE 2 CURRENT CARRYING–WIRES WITHIN)
			CONCEALED CONDUIT IN CEILING OR WALLS, (HASHMARKS INDICATE QUANTITY OF CURRENT CARRYING WIRES WITHIN, NO HASHMARKS INDICATE 2 CURRENT CARRYING–WIRES WITHIN)
			EXPOSED RACEWAY, PROVIDE STRAP 8'–0" ON CENTER MAXIMUM (HASHMARKS INDICATE QUANTITY OF CURRENT CARRYING WIRES WITHIN, NO HASHMARKS INDICATE 2 CURRENT CARRYING–WIRES WITHIN)
		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)
			LIQUID–TIGHT FLEXIBLE CONDUIT
		e	EXISTING UNDERGROUND CONDUIT

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

FOR PLANNING PURPOSES ONLY

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
ELECTRICAL SYMBOL LIST

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

EXPIRATION DATE OF THE LICENSE XX/XX/XXXX

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED:

CHIEF ENGINEER — DATE

DRAWING NO. E-1

1/4/22–17:22 Y:\153\153.012\153.012 EXX.001.dwg

GENERAL ELECTRICAL NOTES:

1. ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRICAL SAFETY CODE AND LOCAL BUILDING ORDINANCES. CONSTRUCTION PRACTICES SHALL CONFORM TO THE LATEST EDITION OF AMERICAN ELECTRICIANS' HANDBOOK BY CROFT, AND APPLICABLE INSTRUCTIONS OF MANUFACTURERS OF EQUIPMENT AND MATERIAL SUPPLIED FOR THIS PROJECT.

2. OBTAIN AND PAY FOR BUILDING / ELECTRICAL PERMIT, ARRANGE FOR PERIODIC INSPECTION BY LOCAL AUTHORITIES, AND DELIVER CERTIFICATE OF FINAL INSPECTION TO THE ENGINEER.

3. CONTACT THE UTILITY COMPANIES AND COORDINATE ALL RELATED WORK WITH THEM. PAY ALL UTILITY COMPANY CHARGES RELATED TO THIS PROJECT UNLESS OTHERWISE DIRECTED. THE DRAWINGS DEPICT ANTICIPATED UTILITY COMPANY REQUIREMENTS. DO NOT PROCEED WITH THE UTILITY COMPANY RELATED WORK WITHOUT VERIFYING THEIR EXACT REQUIREMENTS. NOTIFY THE ARCHITECT OF ANY DIFFERENCES BETWEEN WHAT IS SHOWN ON THE CONTRACT DRAWINGS AND WHAT IS REQUIRED BY THE UTILITY COMPANY. ARRANGE FOR PERIODIC INSPECTIONS BY THE UTILITY COMPANY AND PERFORM ALL WORK IN ACCORDANCE WITH THE UTILITY COMPANY STANDARDS.

4. THE DRAWINGS DO NOT REFLECT ALL THE EXISTING CONDITIONS THAT MAY BE ENCOUNTERED DURING CONSTRUCTION. VISIT THE PROJECT SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS, THE EXTENT OF ANY DEMOLITION, RELOCATION, RECONNECTION, AND THE NEW WORK PRIOR TO THE START OF ON-SITE CONSTRUCTION ACTIVITIES. REPORT ANY DISCREPANCIES AND/OR DIFFERENCES BETWEEN THE EXISTING CONDITIONS AND THE CONSTRUCTION DOCUMENTS TO THE ARCHITECT. RESOLVE ALL DISCREPANCIES AND QUESTIONS PRIOR TO THE START OF WORK. 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 REQUIRED BY THE CONTRACTOR'S FAILURE TO DO SO.

5. EXISTING DEVICE LOCATIONS, CIRCUIT ASSIGNMENTS, WIRING CONNECTIONS, AND CONDUIT RUNS INDICATED WERE DERIVED FROM AVAILABLE REFERENCE DOCUMENTS AND LIMITED FIELD INVESTIGATION. FIELD VERIFY ALL EXISTING CONDITIONS AND MAKE ANY NECESSARY ADJUSTMENTS TO SATISFY THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.

6. 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.

7. WORK INCIDENTAL TO THE CONTRACT AND NECESSARY TO COMPLETE THE PROJECT, ALTHOUGH NOT SPECIFICALLY REFERRED TO IN THE CONTRACT DOCUMENTS, SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.

8. THE LOCATION OF ALL ELECTRICAL APPARATUS AND DEVICES ARE APPROXIMATE AND BEFORE INSTALLING, STUDY THE ARCHITECTURAL, CIVIL, STRUCTURAL, AND MECHANICAL DETAILS AND MAKE INSTALLATION IN THE MOST LOGICAL MANNER. ANY PIECE OF EQUIPMENT/DEVICE MAY BE RELOCATED WITHIN 10' BEFORE INSTALLATION AT THE DIRECTION OF THE ARCHITECT WITHOUT ADDITIONAL CHARGE TO THE PROJECT.

9. SHOULD PROJECT CONDITIONS REQUIRE REARRANGEMENT OF THE PROJECT'S WORK, THE CONTRACTOR SHALL MARK SUCH CHANGES ON THE AS-BUILT DRAWINGS. IF THESE CHANGES REQUIRE AN ALTERNATE METHOD TO THOSE SPECIFIED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL SUBMIT DRAWINGS TO REFLECT THE PROPOSED ALTERNATE METHODS TO THE ARCHITECT FOR REVIEW AND APPROVAL. 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.

10. THE EXISTING CONTAINER YARD ELECTRICAL, TELECOM, LIGHTING AND OTHER ELECTRICALLY-RELATED SYSTEMS MUST REMAIN OPERATIONAL THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL EXERCISE DUE CARE AND CAUTION WHEN WORKING NEAR ANY EXISTING EQUIPMENT, DEVICES, OR CABLING/CIRCUITING. ANY DAMAGE TO THE EXISTING EQUIPMENT, DEVICES OR CABLING/CIRCUITING RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE IMMEDIATELY REPAIRED OR OTHERWISE RESTORED TO ITS ORIGINAL WORKING CONDITION AT NO ADDITIONAL COST TO THE PROJECT.

11. MAINTAIN CONTINUITY OF ALL CIRCUITS THAT PASS THROUGH THE PROJECT LIMITS AND SERVE OTHER AREAS OR EQUIPMENT INDICATED TO REMAIN.

12. VERIFY ALL SYSTEM REQUIREMENTS (ELECTRICAL, MECHANICAL, TELECOM, FIRE ALARM, INTRUSION DETECTION, CCTV, ACCESS CONTROL, SPECIALTY SYSTEMS, ETC.) WITH THE SELECTED SYSTEM'S MANUFACTURER OR AUTHORIZED REPRESENTATIVE PRIOR TO COMMENCING WITH ANY WORK. COORDINATE RATINGS OF OVERCURRENT PROTECTION DEVICES, DISCONNECT SWITCHES, CONDUIT & WIRING TO MATCH THE ACTUAL EQUIPMENT SUPPLIED FOR THE PROJECT. VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. CORRECT ALL DISCREPANCIES SO AS TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM. RECORD CHANGES ON THE AS-BUILT DRAWINGS.

13. CONCEAL ALL CONDUIT; EXPOSED CONDUITS ARE PERMITTED ONLY WHERE SPECIFICALLY SHOWN ON THE DRAWINGS. ALL EXPOSED CONDUITS IN FINISHED AREAS SHALL BE INSTALLED IN THE LEAST VISIBLE LOCATIONS. CARE SHALL BE TAKEN TO INSTALL CONDUIT IN THE MOST AESTHETICALLY PLEASING MANNER.

14. WIRING DEVICES SHALL BE FLUSH MOUNTED; EXPOSED DEVICES ARE PERMITTED ONLY WHERE SPECIFICALLY SHOWN ON THE DRAWINGS.

15. AN ADHESIVE VINYL NAMEPLATE SHALL BE PROVIDED FOR ALL SWITCHES, RECEPTACLES, MODULAR SYSTEMS FURNITURE CONNECTIONS, DISCONNECT SWITCHES, MOTOR STARTERS AND MISCELLANEOUS DEVICES REQUIRING POWER. THE NAMEPLATE SHALL INDICATE THE PANELBOARD SERVING THE DEVICE AND THE CORRESPONDING CIRCUIT ASSIGNMENT. LETTERING SHALL BE A MINIMUM OF 1/4" HIGH. UTILIZE BROTHER "P-TOUCH" LABEL MAKER OR APPROVED SUBSTITUTE.

16 A GREEN, EQUIPMENT GROUND CONDUCTOR SIZED IN ACCORDANCE WITH THE NEC ARTICLE 250 SHALL BE INSTALLED IN ALL FEEDER AND BRANCH CIRCUITS WHETHER INDICATED ON CONTRACT DRAWINGS OR NOT.

17. DO NOT USE A COMMON NEUTRAL FOR MULTIPLE BRANCH CIRCUITS INSTALLED IN A COMMON CONDUIT. PROVIDE A DEDICATED NEUTRAL FOR EACH INDIVIDUAL CIRCUIT. WHERE MULTIPLE DEDICATED NEUTRALS ARE INSTALLED IN A COMMON CONDUIT, PROVIDE COLOR CODING OF THE DIFFERENT NEUTRAL CONDUCTORS IN ACCORDANCE WITH NEC 2014 ARTICLE 200.6 (WHITE, GRAY, THREE CONTINUOUS WHITE OR GRAY STRIPES, ETC.).

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

19. THE TELECOMMUNICATIONS RACEWAY SYSTEM INSTALLATION SHALL COMPLY WITH TIA/EIA-569-C UNLESS OTHERWISE NOTED.

20. CONDUIT BODIES (e.g. LB, LR, etc.) SHALL NOT BE PERMITTED IN THE TELECOMMUNICATIONS RACEWAY SYSTEMS.

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

22. ALL SURFACE MOUNTED DEVICES SHALL BE INSTALLED UTILIZING FACTORY PAINTED SURFACE MOUNTING ACCESSORIES AND MATCHING DEVICE BOXES FOR THE MOST AESTHETICALLY PLEASING INSTALLATION.

23. PROVIDE KNOCK-OUT PLUGS FOR ALL UNUSED CONDUIT PENETRATIONS IN BOXES AND ENCLOSURES DUE TO CONDUIT REMOVAL.

24. PAINTING OF ELECTRICAL EQUIPMENT:
    a. INTERIOR LOCATIONS - PRIME AND PAINT ALL EXPOSED CONDUITS. BOXES, FITTINGS, SUPPORT CHANNELS, MOUNTING HARDWARE AND ACCESSORIES WITH TWO FINISH COATS TO MATCH THE SURFACE ON WHICH THEY ARE MOUNTED OR TO MATCH THE FINISH OF THE ADJACENT SURFACES. EQUIPMENT SURFACES/COMPONENTS WITH A FACTORY-APPLIED PAINT FINISH NEED NOT BE PAINTED.

    b. EXTERIOR LOCATIONS - PRIME ALL EXPOSED CONDUITS, BOXES, FITTINGS, SUPPORT CHANNELS, MOUNTING HARDWARE AND ACCESSORIES WITH A 2-PART EPOXY PRIMER AND FINISH WITH 2 COATS OF AN ALIPHATIC ACRYLIC URETHANE PAINT. PAINT FINISH TO MATCH THE SURFACE ON WHICH THEY ARE MOUNTED OR TO MATCH THE FINISH OF THE ADJACENT SURFACES. STAINLESS STEEL MATERIALS NEED NOT BE PAINTED.

25. INSTALLATION OF NEW DEVICES AND CONDUITS SHALL NOT INTERFERE WITH THE OPENING OF DOORS AND/OR WINDOWS. ACCESS AND/OR VISIBILITY OF ALARM NOTIFICATION DEVICES SHALL NOT BE BLOCKED BY DOORS IN THE OPEN POSITION.

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

27. 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).

28. FIRE ALARM SYSTEMS SHALL BE DESIGNED, INSTALLED AND MAINTAINED IN ACCORDANCE WITH NFPA 1 2012, 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN SECTION 215 AND 702.1, AND OTHER NATIONALLY RECOGNIZED STANDARDS.

29. UPON COMPLETION OF THE INSTALLATION, A SATISFACTORY FIRE ALARM SYSTEM TEST SHALL BE CONDUCTED IN THE PRESENCE OF THE FIRE CHIEF.

30. 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. 2012 NFPA 1, AS AMENDED.

31. AHJ APPROVAL, NFPA 1 2012, CHAPTER 13, AS AMENDED.
    a. 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.

    b. 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.

    c. A COPY OF A SYSTEM'S UNSATISFACTORY INSPECTION AND MAINTENANCE TEST RECORD SHALL BE SUBMITTED TO THE AHJ BY THE TESTING COMPANY WITHIN FIVE (5) WORKING DAYS AFTER THE COMPLETION OF THE TEST.

32. 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 ACCORDANCE WITH NFPA 72, NATIONAL FIRE ALARM AND SIGNALLING CODE AND 2012 NFPA 1, 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 THIS CODE:

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

        ii. FOR EXISTING ALARM INSTALLATIONS, THE MANUAL FIRE ALARM BOX EITHER SHALL BE PROVIDED IN THE NATURAL EXIT ACCESS PATH NEAR EACH REQUIRED EXIT OF WITHIN 5 FEET (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 FEET (12.2 M) IN WIDTH, AND WITHIN 5 FEET (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. (60 M) SHALL NEED TO BE TRAVERSED TO REACH A MANUAL FIRE ALARM BOX. [101:9.6.2.5], 2012 NFPA 1.

    f. 13.7.1.4.10.5 UNLESS OTHERWISE PROVDED 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, 2012 NFPA 1, AS AMENDED. [101:9.6.3.5]

    g. 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. 2012 NFPA 1, AS AMENDED. [101:9.6.3.8]

    h. 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.

    i. 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.

    j. THE STANDARD EVACUATION SIGNAL SHALL BE SYNCHRONIZED WITHIN A NOTIFICATION ZONE. ALL VISUAL SIGNALING DEVICES SHALL BE SYNCHRONIZED.

    k. NFPA 72 4.4.5 PROTECTION OF FIRE ALARM CONTROL UNIT(S) IN AREAS THAT ARE NOT CONTINUOUSLY OCCUPIED, AUTOMATIC SMOKE DETECTION SHALL BE PROVIDED AT THE LOCATION OF EACH FIRE ALARM CONTROL UNIT(S) TO PROVIDE NOTIFICATION OF FIRE AT THAT LOCATION.

33. PORTABLE FIRE EXTINGUISHERS: 13.6.1.1 THE INSTALLATION, MAINTENANCE, SELECTION, AND DISTRIBUTION OF PORTABLE FIRE EXTINGUISHERS SHALL BE ACCORDANCE WITH NFPA 10, STANDARD FOR PORTABLE FIRE EXTINGUISHERS, AND SECTION 13.6 2012 NFPA 1.

34. 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. 2012 NFPA 1.

    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] 2012 NFPA 1, AS AMENDED.

    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 13.7.3.2.1.4. 2012 NFPA 1, AS AMENDED. [72:10.18.1.5]

    d. 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. 2012 NFPA 1, CHAPTER 13, AS AMENDED.

35. ROH 18.5.2, SEC. 18-5.2 RETENTION OF PLANS: ONE SET OF APPROVED PLANS, SPECIFICATIONS, AND COMPUTATIONS SHALL BE RETAINED BY THE BUILDING OFFICIAL FOR A PERIOD OF NOT LESS THAN 90 DAYS FROM DATE OF COMPLETION OF THE WORK COVERED THEREIN, AND ONE SET OF APPROVED PLANS SHALL BE RETURNED TO THE APPLICANT, AND SAID SET SHALL BE KEPT ON THE SITE OF THE BUILDING OR WORK AT ALL TIMES DURING WHICH THE WORK AUTHORIZED THEREBY IS IN PROGRESS. (SEC. 18-5.2 R.O. 1978 (1983 ED.); AM. ORD. 93-59)

36. 1.14 PLAN REVIEW. 1.14.4 REVIEW AND APPROVAL BY THE AHJ SHALL NOT RELIEVE THE APPLICANT OF THE RESPONSIBILITY OF COMPLIANCE WITH THIS CODE. 2012 NFPA 1.

37. 1.3.6.3 REPAIRS, RENOVAQTIONS, ALTERATIONS, RECONSTRUCTION, CHANGE OF OCCUPANCY, AND ADDITIONS TO BUILDINGS SHALL CONFORM TO THIS CODE, NFPA 101, AND THE BUILDING CODE. 2012 NFPA 1.

38. LIABILITY. 1.9.4 THIS CODE SHALL NOT BE CONSTRUED TO RELIEVE FROM OR LESSEN THE RESPONSIBILITY OF ANY PERSON OWNING, OPERATING OR CONTROLLING ANY BUILDING OR STRUCTURE FOR ANY DAMAGES TO PERSONS OR PROPERTY CAUSED BY DEFECTS, NOR SHALL THE CODE ENFORCEMENT AGENCY OR ITS PARENT JURISDICTION BE HELD AS ASSUMING ANY SUCH LIABILITY BY REASON OF THE INSPECTIONS AUTHORIZED BY THIS CODE OR ANY PERMITS OR CERTIFICATES ISSUED UNDER THIS CODE. 2012 NFPA 1.

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

FOR PLANNING PURPOSES ONLY

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

EXPIRATION DATE OF THE LICENSE XX/XX/XXXX

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

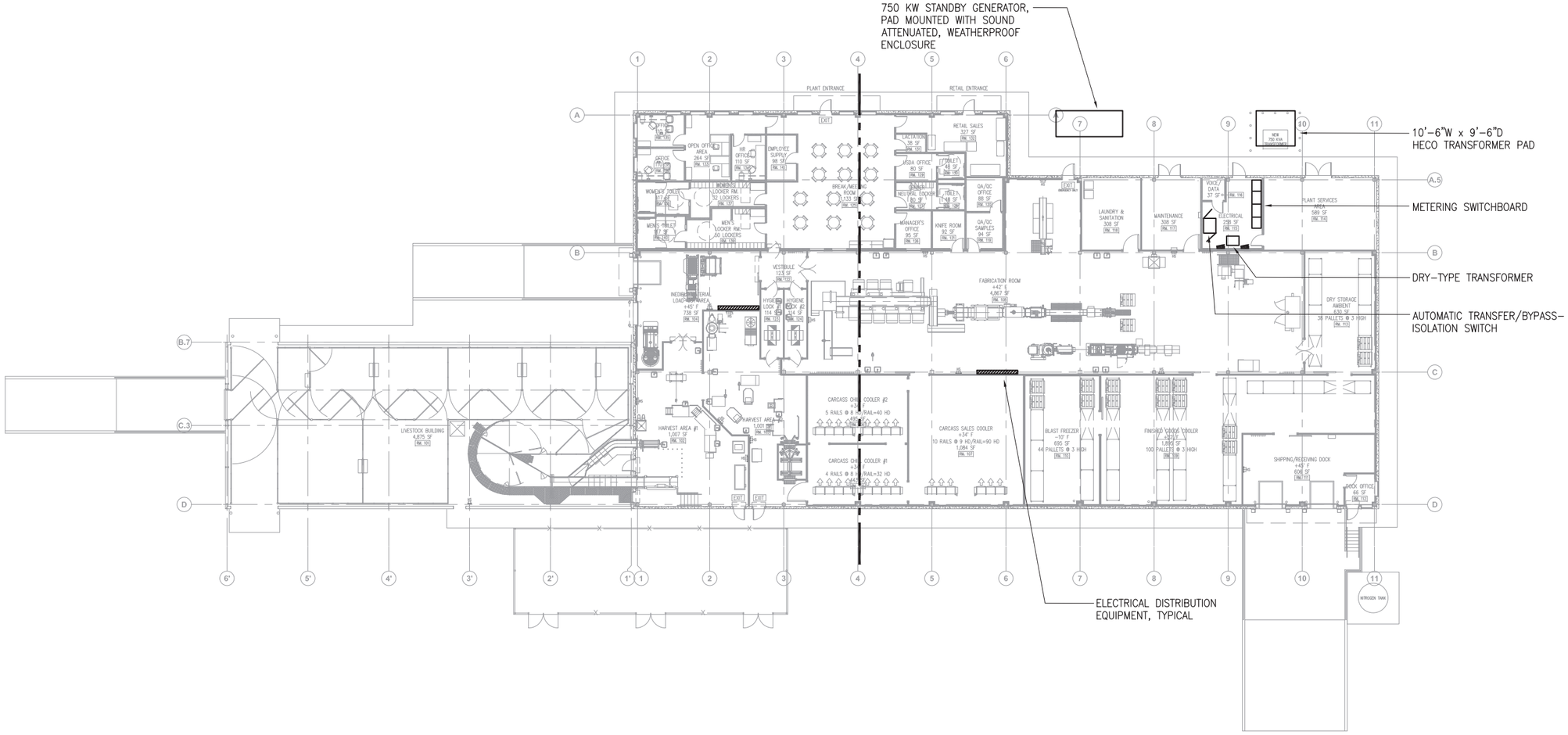
SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
GENERAL ELECTRICAL NOTES

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED:
CHIEF ENGINEER ____ DATE

DRAWING NO. E-2



OVERALL ELECTRICAL PLAN

SCALE: 1/16" = 1'-0"

GRAPHIC SCALE

10' 0 10' 20' 30' 40' 50' 60' 70'

1/16" = 1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
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EXPIRATION DATE OF THE LICENSE XX/XX/XXXX

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

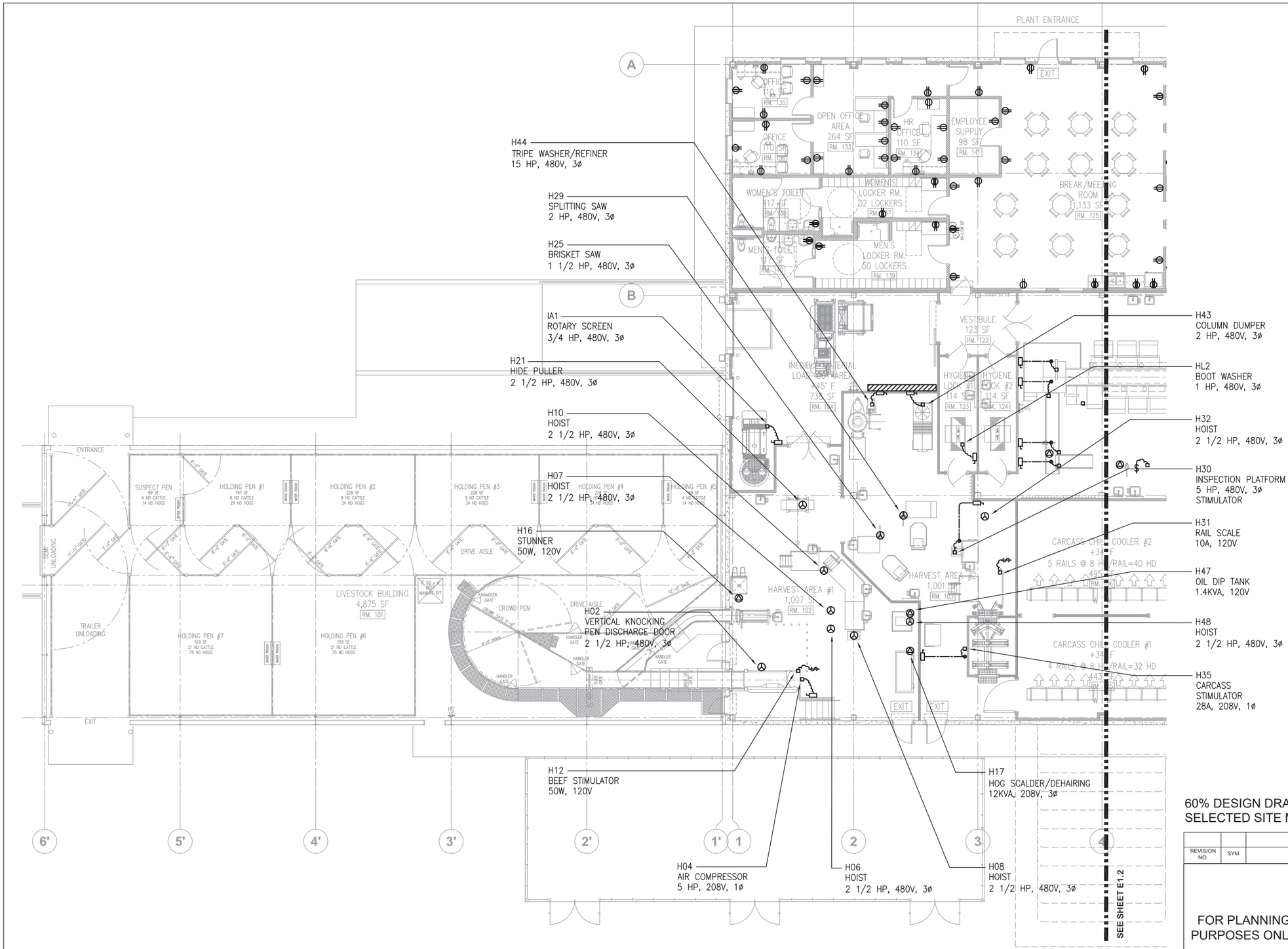
SHEET TITLE
OVERALL ELECTRICAL PLAN

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED:

CHIEF ENGINEER DATE

DRAWING NO. E-3



POWER & OUTLETS PLAN - 1

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

GRAPHIC SCALE

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

1/8" = 1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

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EXPIRATION DATE OF THE LICENSE XX/XX/XXXX

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

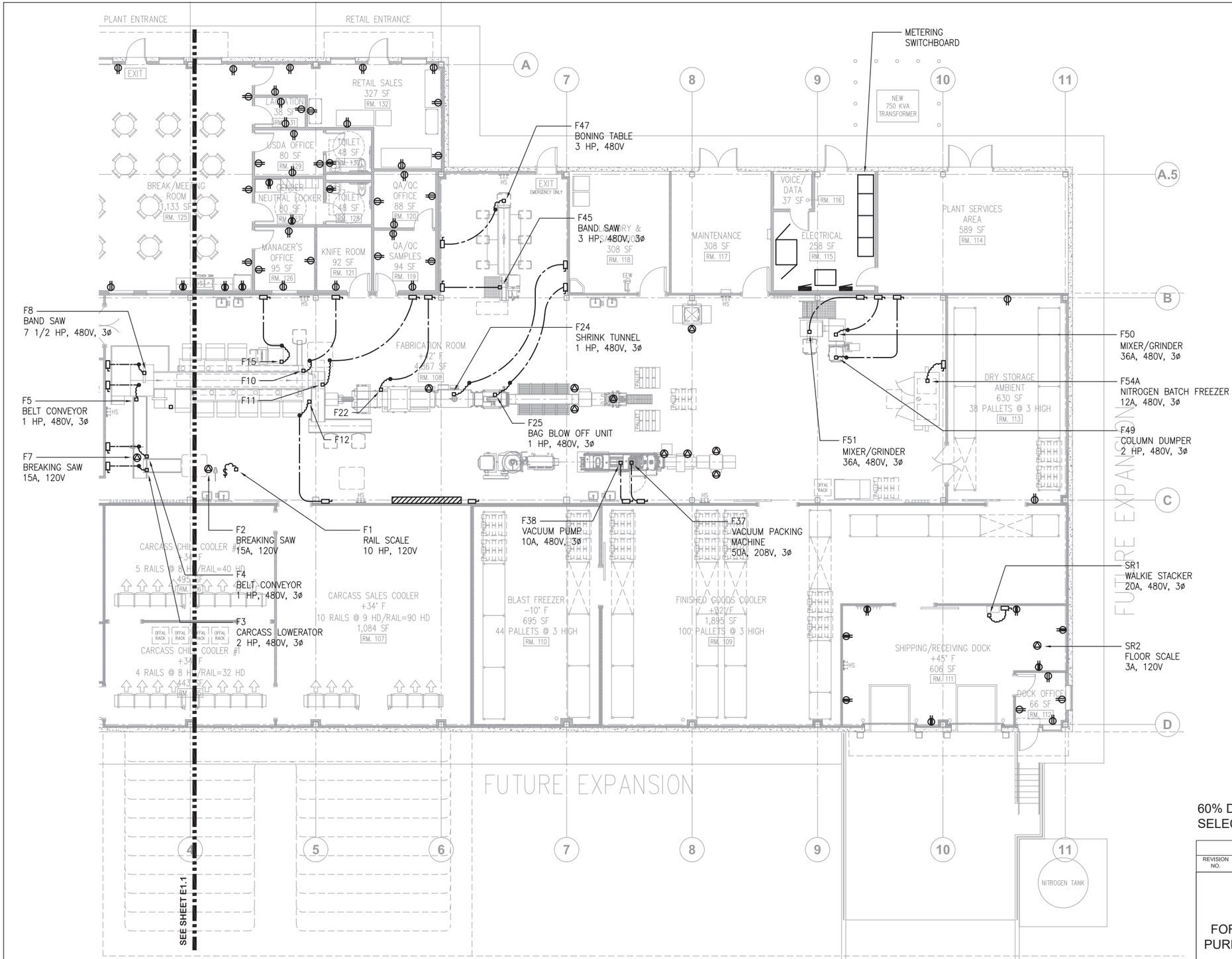
SHEET TITLE
POWER & OUTLETS PLAN - 1

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED:

CHIEF ENGINEER _____ DATE

DRAWING NO. E-4



POWER & OUTLETS PLAN - 2

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

GRAPHIC SCALE

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

1/8" = 1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

FOR PLANNING PURPOSES ONLY

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

EXPIRATION DATE OF THE LICENSE XX/XX/XXXX

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE: POWER & OUTLETS PLAN - 2

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED:

CHIEF ENGINEER — DATE

DRAWING NO. E-5

SHEET NO. 88 OF 106 SHEETS

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY

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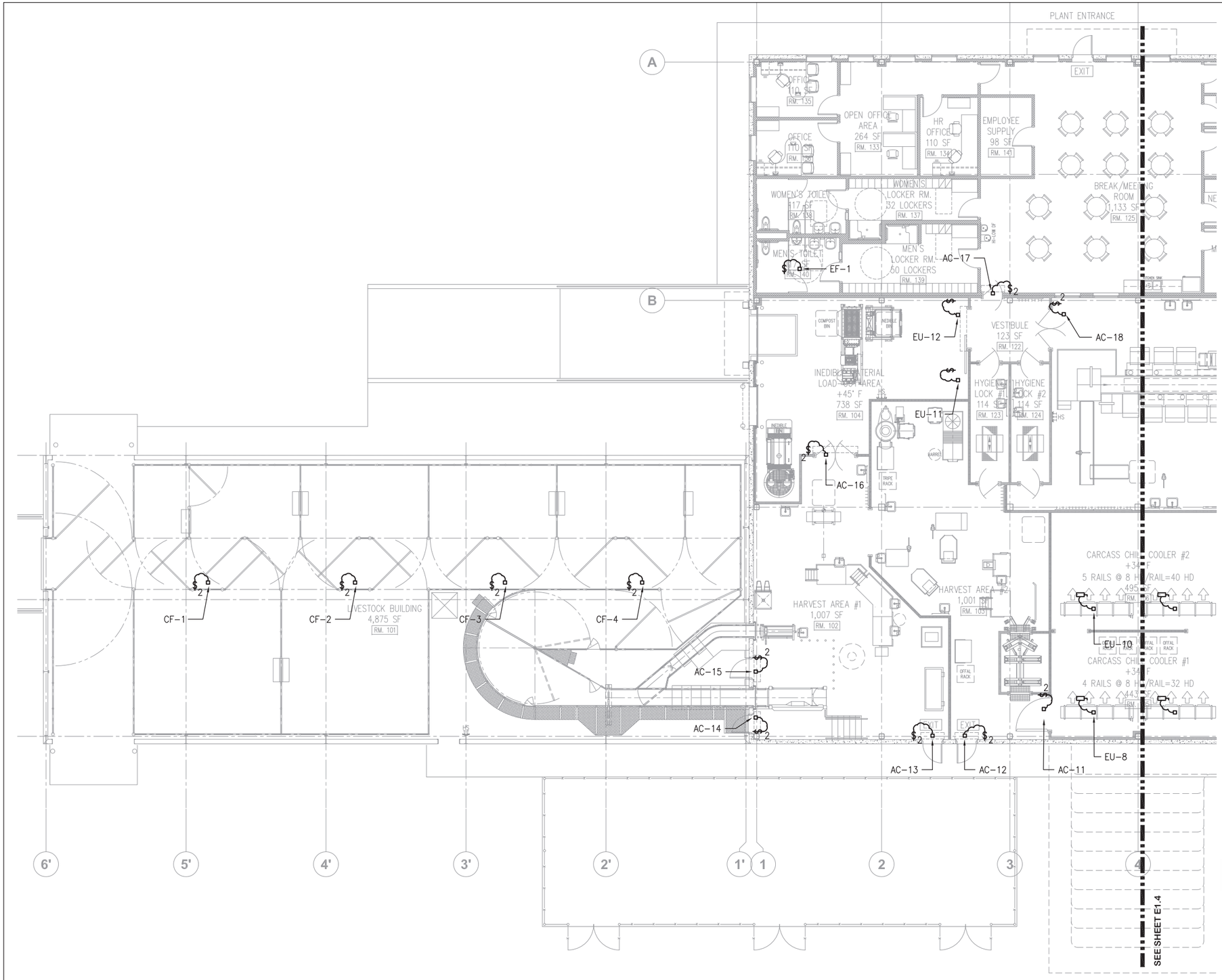

MECHANICAL EQUIPMENT POWER PLAN - 1

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

GRAPHIC SCALE

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

1/8" = 1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

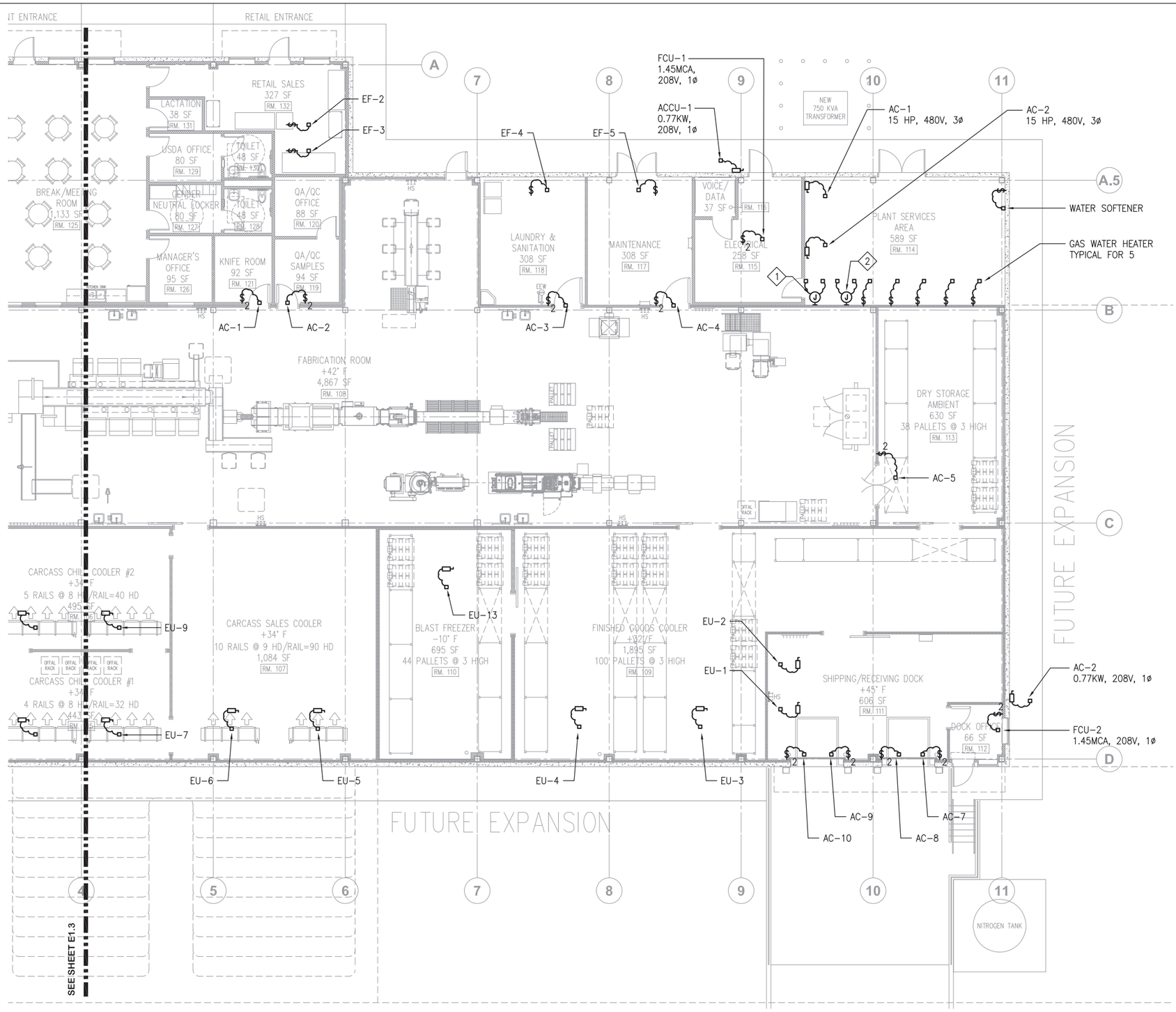
SHEET TITLE
MECHANICAL EQUIPMENT POWER PLAN - 1

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED:

CHIEF ENGINEER DATE

DRAWING NO. E-6



NOTES:

1. HWRP 1, DMS 1
2. HWRP 2, DMS 2

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY

MECHANICAL EQUIPMENT POWER PLAN - 2

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

GRAPHIC SCALE

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

1/8" = 1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

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EXPIRATION DATE OF THE LICENSE XX/XX/XXXX

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

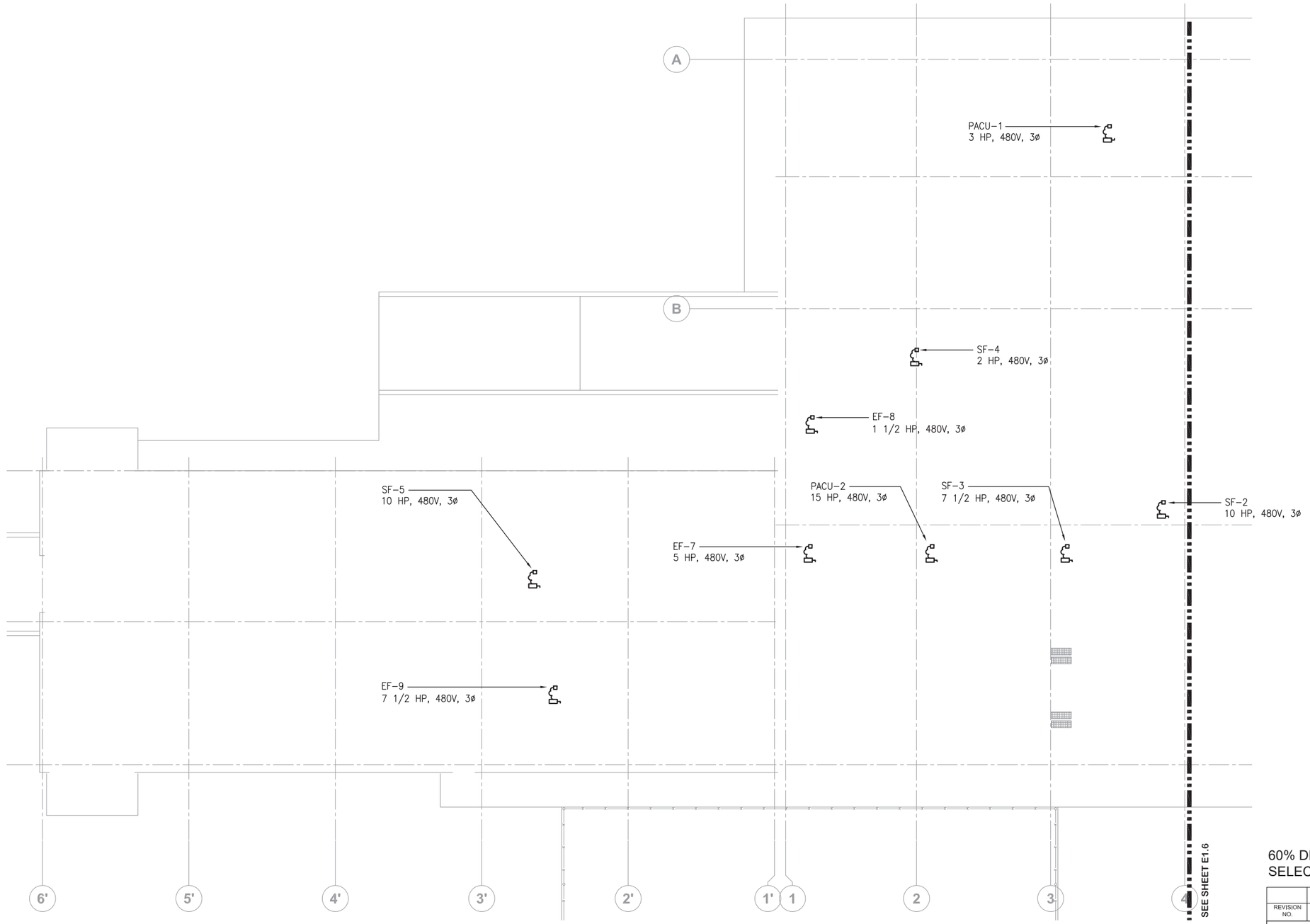
SHEET TITLE
MECHANICAL EQUIPMENT POWER PLAN - 2

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED:

CHIEF ENGINEER DATE

DRAWING NO. E-7



ROOF ELECTRICAL PLAN - 1

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

GRAPHIC SCALE

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

1/8" = 1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

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STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

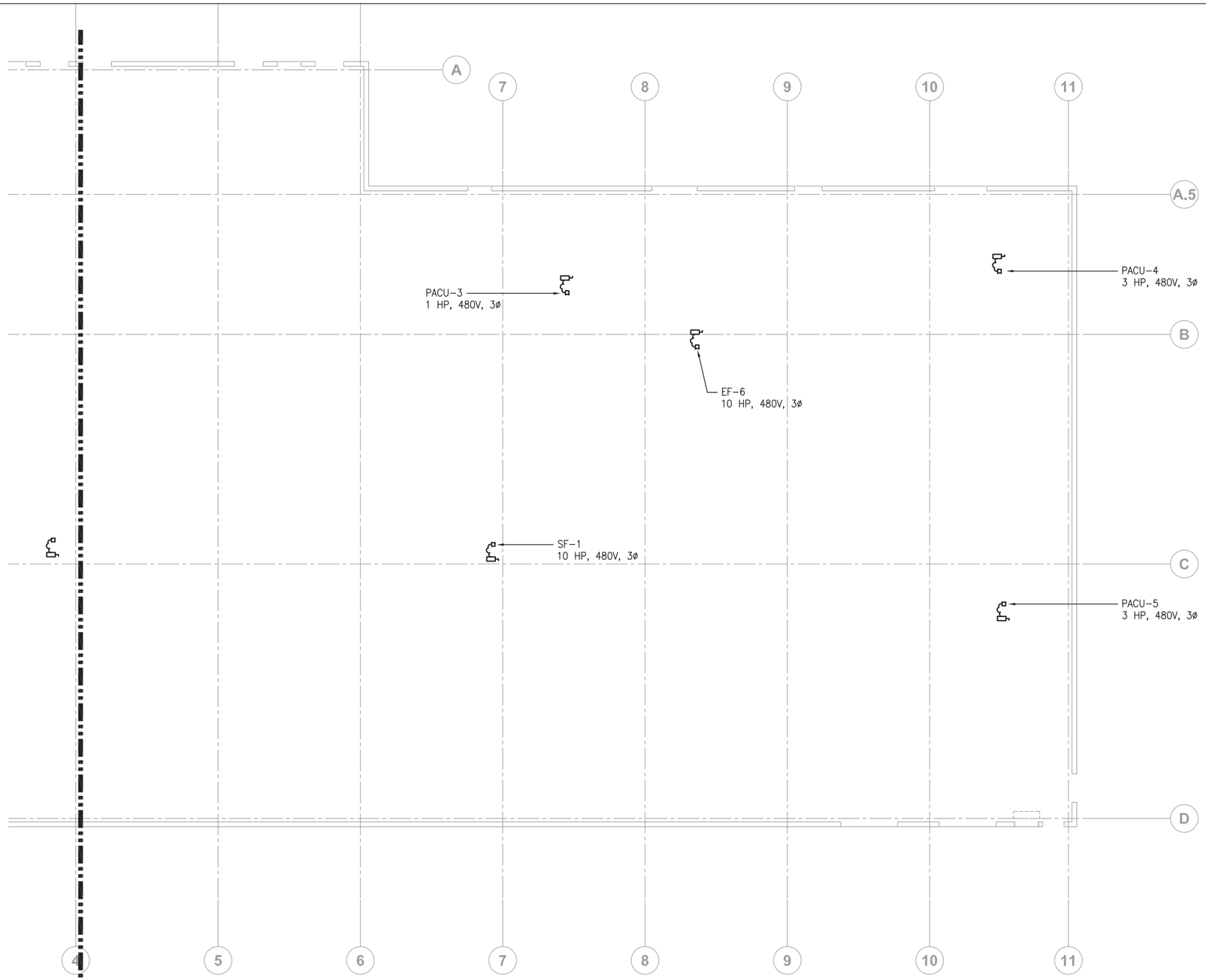
SHEET TITLE
ROOF ELECTRICAL PLAN - 1

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED:

CHIEF ENGINEER DATE

DRAWING NO. E-8



ROOF ELECTRICAL PLAN - 2

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

GRAPHIC SCALE

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

1/8" = 1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

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STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

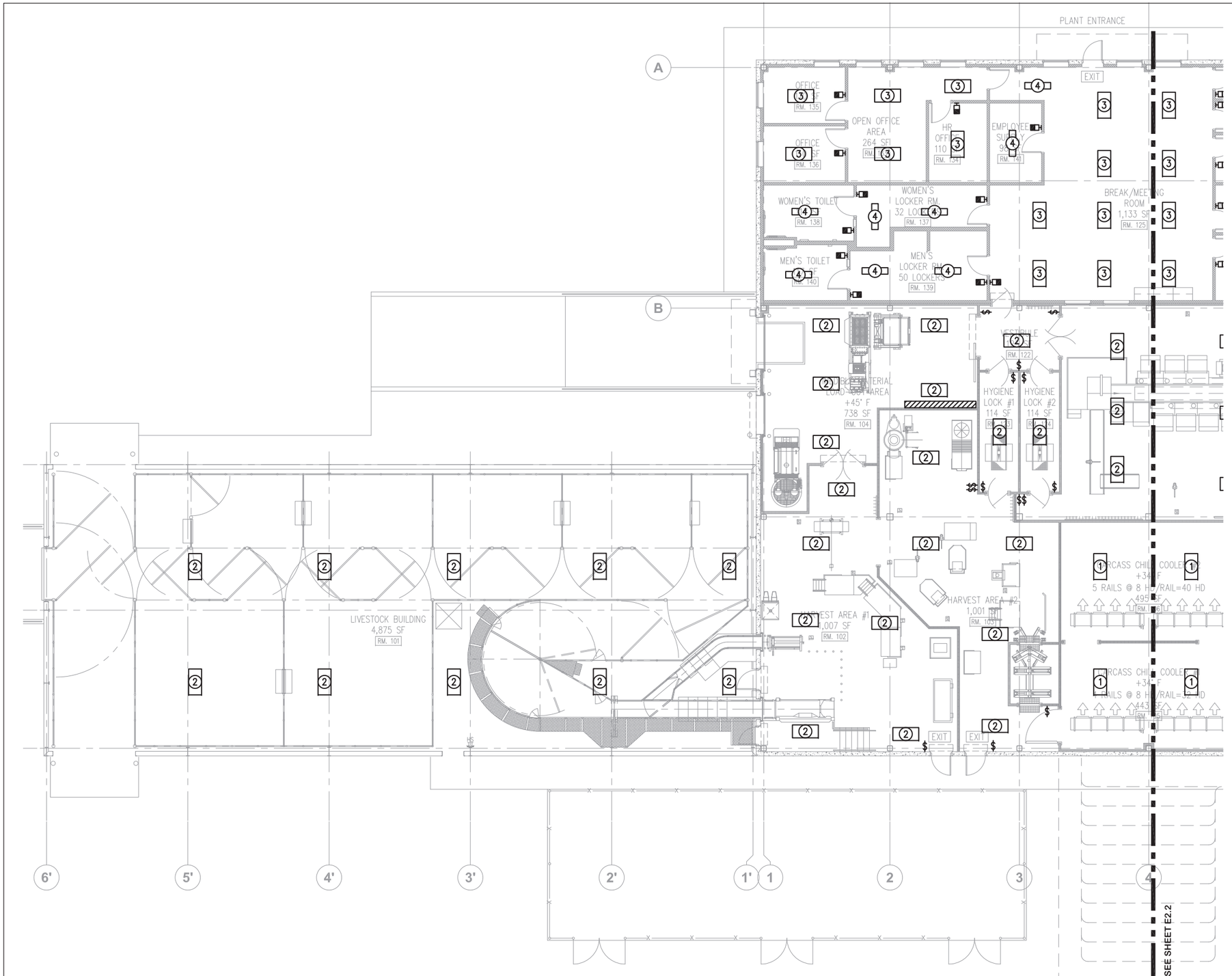
SHEET TITLE
ROOF ELECTRICAL PLAN - 2

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED:

CHIEF ENGINEER DATE

DRAWING NO. E-9



LIGHTING PLAN - 1

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

GRAPHIC SCALE

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

1/8" = 1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

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STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

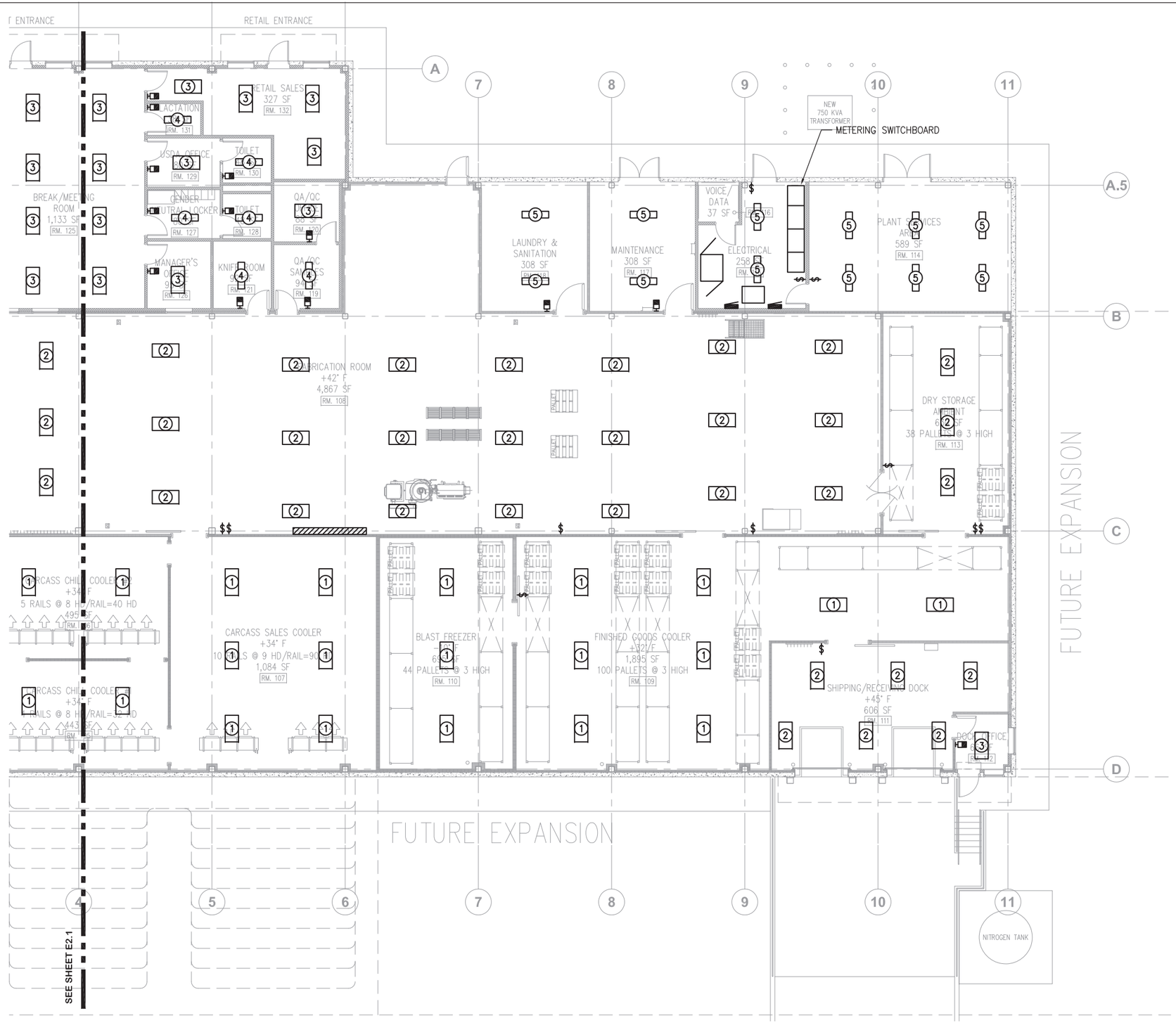
SHEET TITLE
LIGHTING PLAN - 1

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED:

CHIEF ENGINEER DATE

DRAWING NO. E-10



LIGHTING PLAN - 2

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

GRAPHIC SCALE

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

1/8" = 1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

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EXPIRATION DATE OF THE LICENSE XX/XX/XXXX

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE: LIGHTING PLAN - 2

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED: _____ _____
CHIEF ENGINEER DATE

DRAWING NO. E-11

SHEET NO. 94 OF 106 SHEETS

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY

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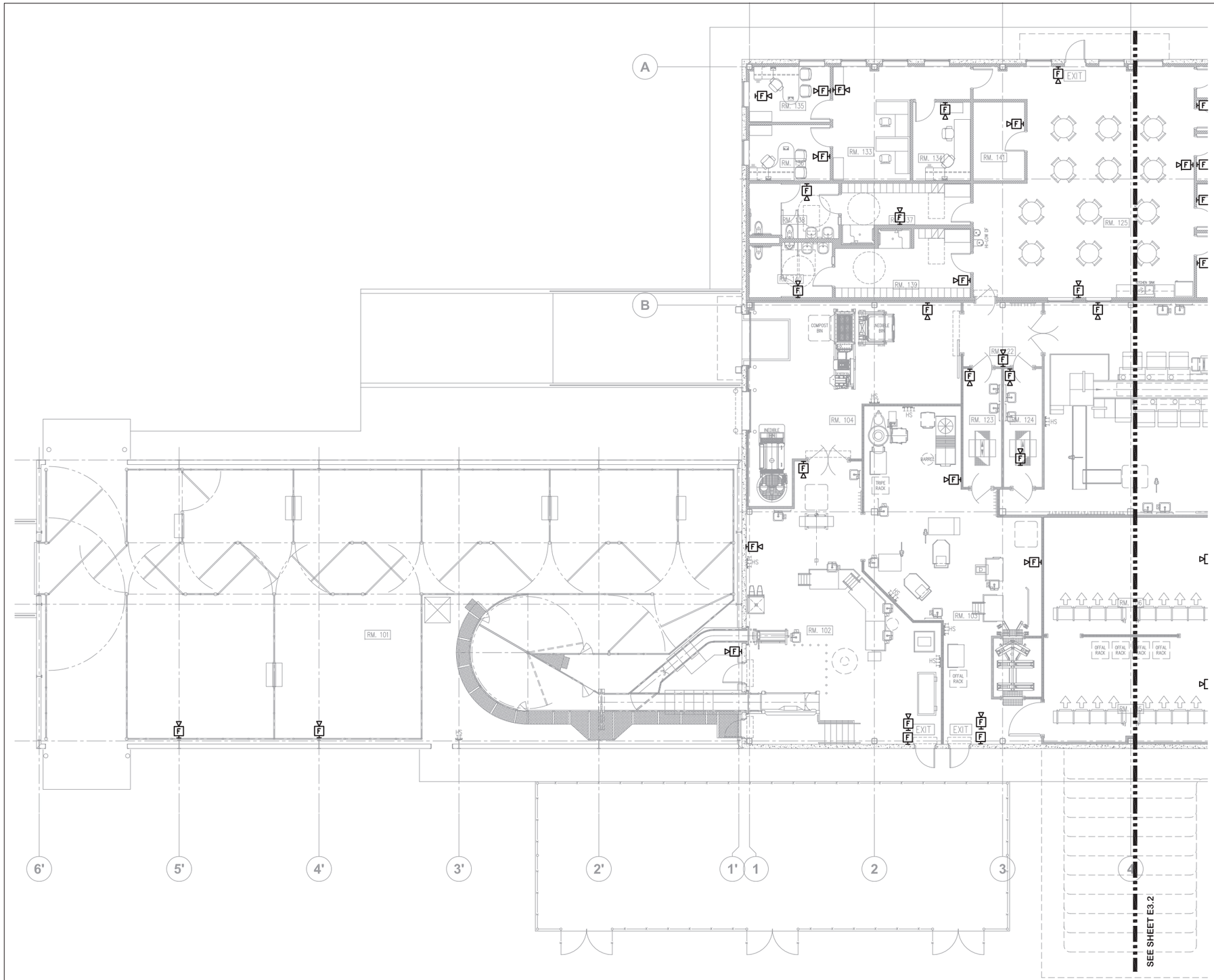


FIRE ALARM PLAN - 1

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

GRAPHIC SCALE

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

1/8" = 1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

FOR PLANNING PURPOSES ONLY

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

EXPIRATION DATE OF THE LICENSE XX/XX/XXXX

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

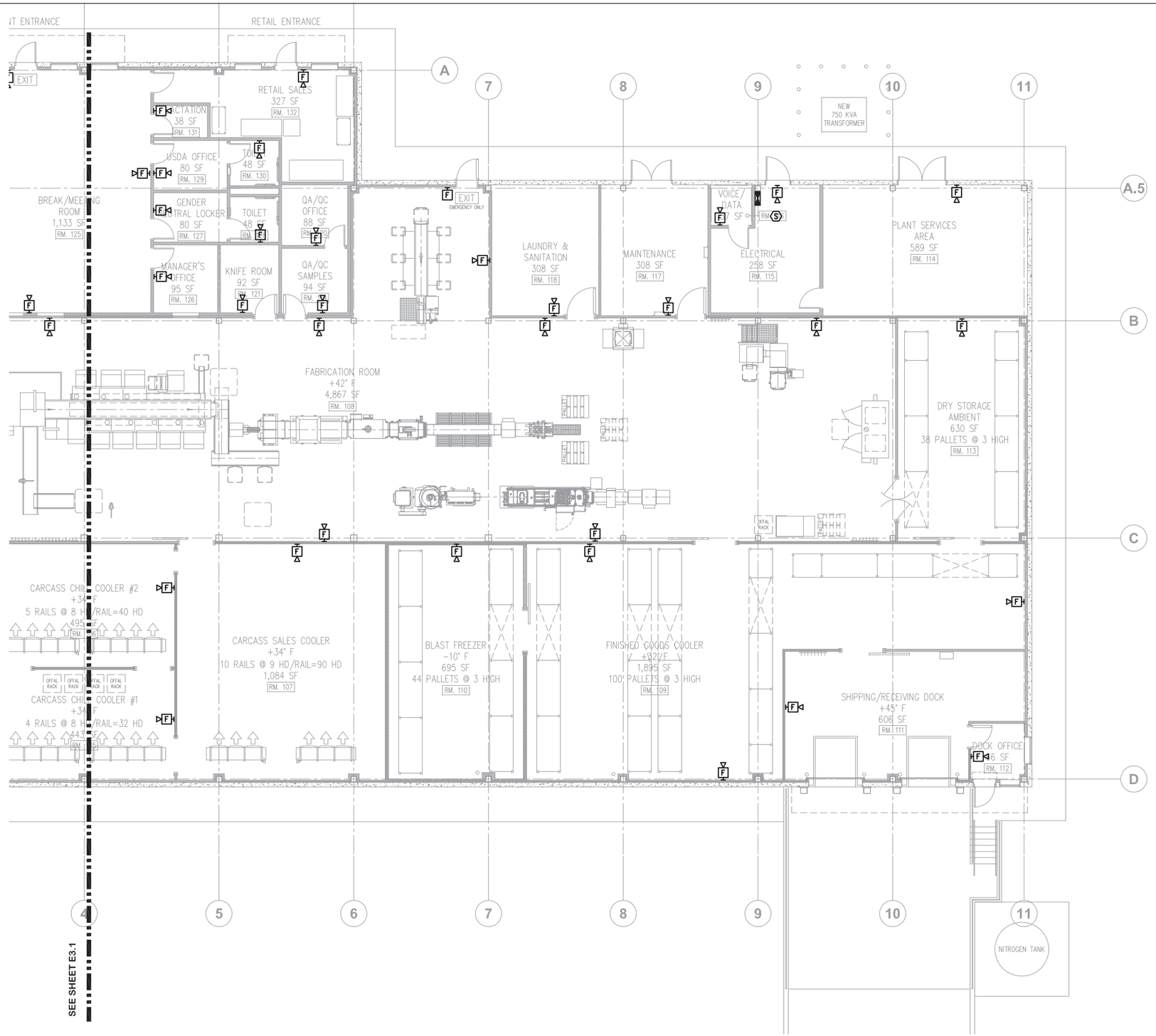
SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
FIRE ALARM PLAN - 1

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED: _____ _____
CHIEF ENGINEER DATE

DRAWING NO. E-12



FIRE ALARM PLAN - 2

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

GRAPHIC SCALE

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

1/8" = 1'-0"

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

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STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
FIRE ALARM PLAN - 2

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED:

CHIEF ENGINEER ____ DATE

DRAWING NO. E-13

SHEET NO. 96 OF 106 SHEETS

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY

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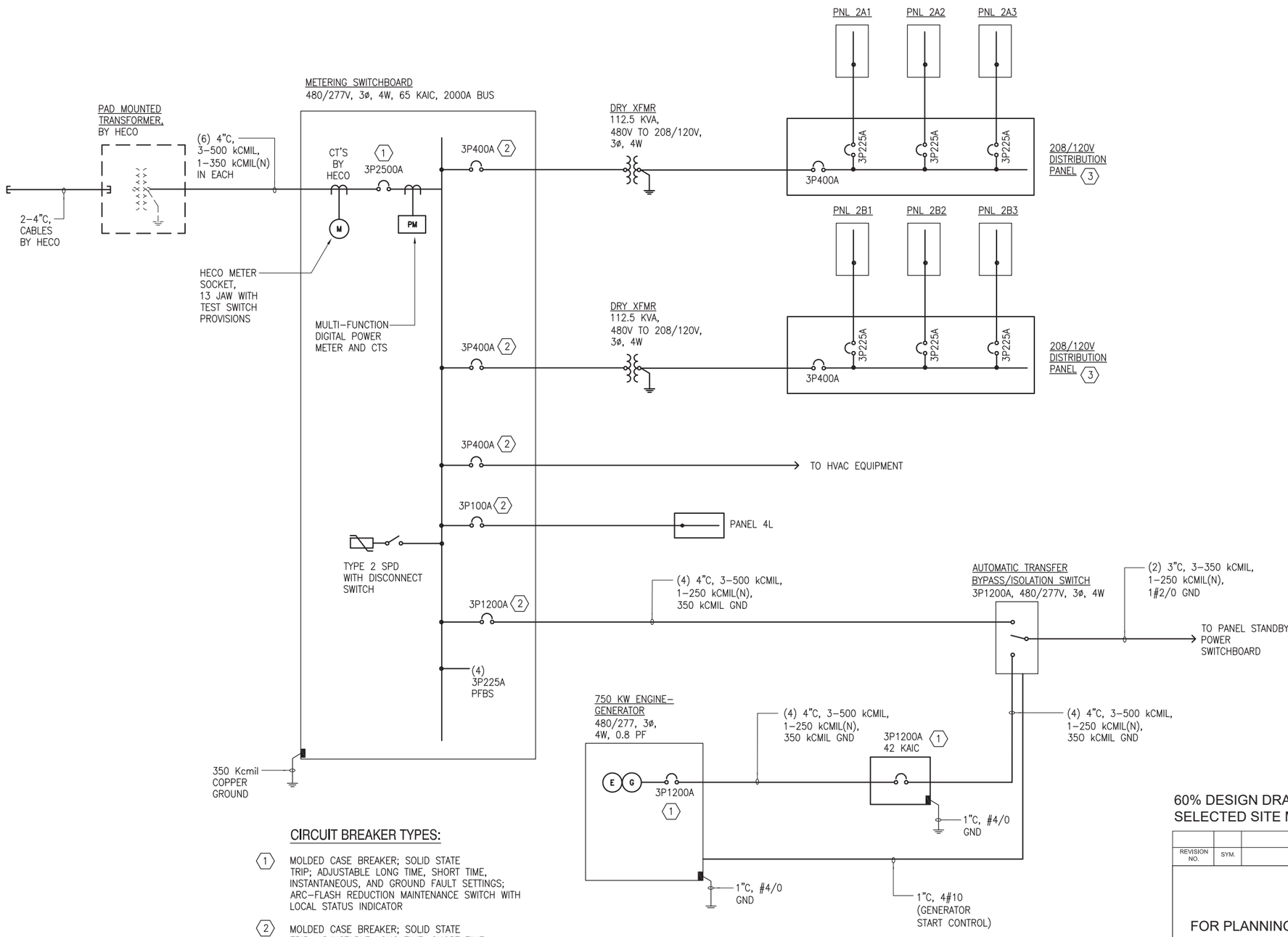

CIRCUIT BREAKER TYPES:

1. MOLDED CASE BREAKER; SOLID STATE TRIP; ADJUSTABLE LONG TIME, SHORT TIME, INSTANTANEOUS, AND GROUND FAULT SETTINGS; ARC–FLASH REDUCTION MAINTENANCE SWITCH WITH LOCAL STATUS INDICATOR
2. MOLDED CASE BREAKER; SOLID STATE TRIP; ADJUSTABLE LONG TIME, SHORT TIME, INSTANTANEOUS, AND GROUND FAULT SETTINGS
3. MOLDED CASE BREAKER; SOLID STATE TRIP; ADJUSTABLE LONG TIME, SHORT TIME AND INSTANTANEOUS SETTINGS

ONE LINE DIAGRAM

NO SCALE

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

FOR PLANNING PURPOSES ONLY

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STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
ONE LINE DIAGRAM

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED:
CHIEF ENGINEER ____ DATE

DRAWING NO. E-14

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	LAMPS
1	LED SURFACE CEILING MOUNT, 4 FOOT LONG, 15 INCH NOMINAL WIDTH, ENCLOSED AND GASKETED HIGH BAY, FIBERGLASS HOUSING, CLEAR POLYCARBONATE LENS, POLYACETAL CAPTIVE LATCHES, UL SANITATION CERTIFIED TO NSF STANDARDS, IP66 AND IP67 RATED, −40 DEGREES C AMBIENT OPERATION, WIDE DISTRIBUTION, WET LOCATION, 277V DRIVER COLUMBIA #LXEW4−40H−CPW−E−U OR APPROVED EQUIVALENT	173W 21,000 LUMENS 4000K
2	LED SURFACE CEILING MOUNT, 4 FOOT LONG, 15 INCH NOMINAL WIDTH, ENCLOSED AND GASKETED HIGH BAY, FIBERGLASS HOUSING, CLEAR POLYCARBONATE LENS, POLYACETAL CAPTIVE LATCHES, UL SANITATION CERTIFIED TO NSF STANDARDS, IP66 AND IP67 RATED, −40 DEGREES C AMBIENT OPERATION, WIDE DISTRIBUTION, WET LOCATION, 277V DRIVER COLUMBIA #LXEW4−40V−CPW−E−U OR APPROVED EQUIVALENT	260W 30,000 LUMENS 4000K
3	LED CEILING RECESSED TROFFER, 2' x 4', FLUSH STEEL DOOR FRAME, DIE FORMED AND EMBOSSED STEEL CHASSIS. BAKED WHITE ENAMEL FINISH, PAINTED AFTER FABRICATION, CLEAR PRISMATIC PATTERN 12 ACRYLIC DIFFUSER 0.125" THICK, 3800 LUMENS, 277V DRIVER COLUMBIA #LJT24−40LWG−FS−A12125−E−U OR APPROVED EQUIVALENT	34W 4,300 LUMENS 4000K
4	LED CEILING RECESSED TROFFER, 1' x 4', FLUSH STEEL DOOR FRAME, DIE FORMED AND EMBOSSED STEEL CHASSIS. BAKED WHITE ENAMEL FINISH, PAINTED AFTER FABRICATION, CLEAR PRISMATIC PATTERN 12 ACRYLIC DIFFUSER 0.125" THICK, 3800 LUMENS, 277V DRIVER COLUMBIA #LJ14−40LWG−FS−A12125−E−U OR APPROVED EQUIVALENT	34W 3,800 LUMENS 4000K
5	LED STEM MOUNT, BOTTOM AT +9'−0:, 4 FOOT LONG, 8 INCH NOMINAL WIDTH, ENCLOSED AND GASKETED, FIBERGLASS HOUSING, FROSTED RIBBED POLYCARBONATE LENS, POLYCARBONATE LATCHES, WET LOCATION, 277V DRIVER H.E. WILLIAMS 96−4−L40−8−40−PCFR OR APPROVED EQUIVALENT	30W 4,000 LUMENS 4000K

TYPE	DESCRIPTION	LAMPS
	EXIT LIGHT, LED TYPE, UNIVERSAL MOUNTING EXIT SIGN, 12"W x 10.5"H x 1.625"W, DIE−CAST ALUMINUM HOUSING, WHIITE POWDERCOAT FINISH, UNIVERSAL ARROWS, RED LETTERS, 120/277V OPERATION WITH SELF−CONTAINED BATTERY PACK, INDICATOR LIGHT AND TEST SWITCH, NEMA 4X/IP66, UL SANITATION LISTED EVENLITE #TLX−EM−RU−W OR APPROVED EQUIVALENT	LED
	EMERGENCY WALL PACK, LED TYPE, WHITE INJECTION MOLDED THERMOPLASTIC HOUSING, FULLY GASKETED, 2−3W DIE−CAST ALUMINUM LED LAMP HEADS WITH POLYCARBONATE LENS, UL SANITATION CERTIFIED, 90 MINUTE LITHIUM ION PHOSPHATE BATTERY WITH INDICATING LIGHT AND TEST SWITCH, INTEGRAL HEATER FOR BATTERY OPERATION TO −22 DEGREES C, DUAL LITE #DYN−6−I−4X−HTR OR APPROVED EQUIVALENT	LED

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

FOR PLANNING PURPOSES ONLY

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

EXPIRATION DATE OF THE LICENSE XX/XX/XXXX

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

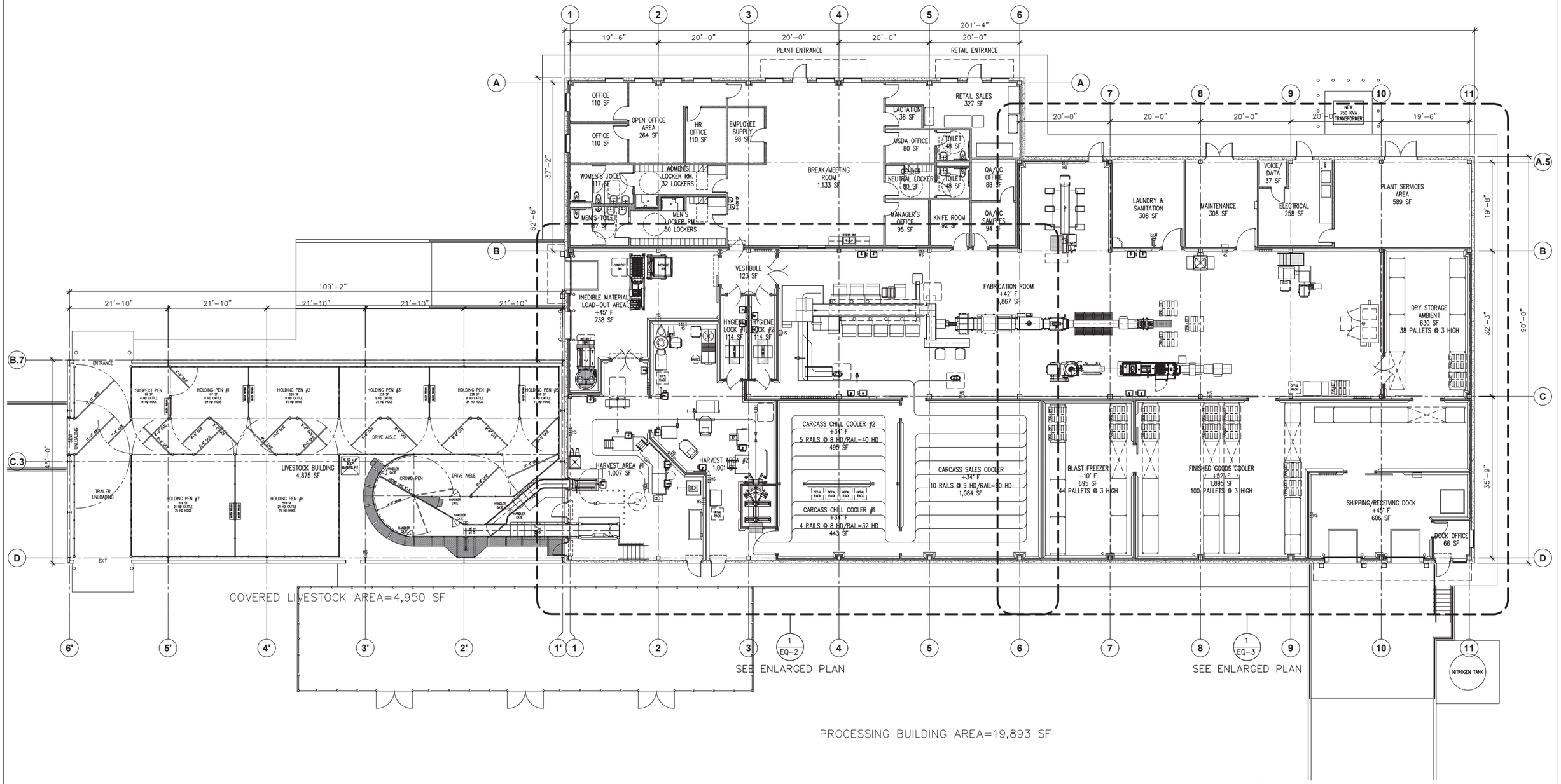
SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
LUMINAIRE SCHEDULE

DESIGNED BY: ECS	SUBMITTED:
DRAWN BY: CAD	DATE: JAN 2022
CHECKED BY: MA	SCALE: AS NOTED

APPROVED:
CHIEF ENGINEER DATE

DRAWING NO. E-15



1 OVERALL FACILITY EQUIPMENT PLAN

3/32"=1'-0"

0 5 10 20

GENERAL NOTES

1. SEE SHEETS EQ-2 AND EQ-3 FOR ENLARGED PLANS.

N

REFERENCE ONLY

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STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
OVERALL 70 HD/DAY FACILITY EQUIPMENT PLAN

DESIGNED BY: RWG	**SUBMITTED:**
DRAWN BY: RWG	**DATE:**
CHECKED BY: XX	**SCALE:** 3/32"=1'-0"

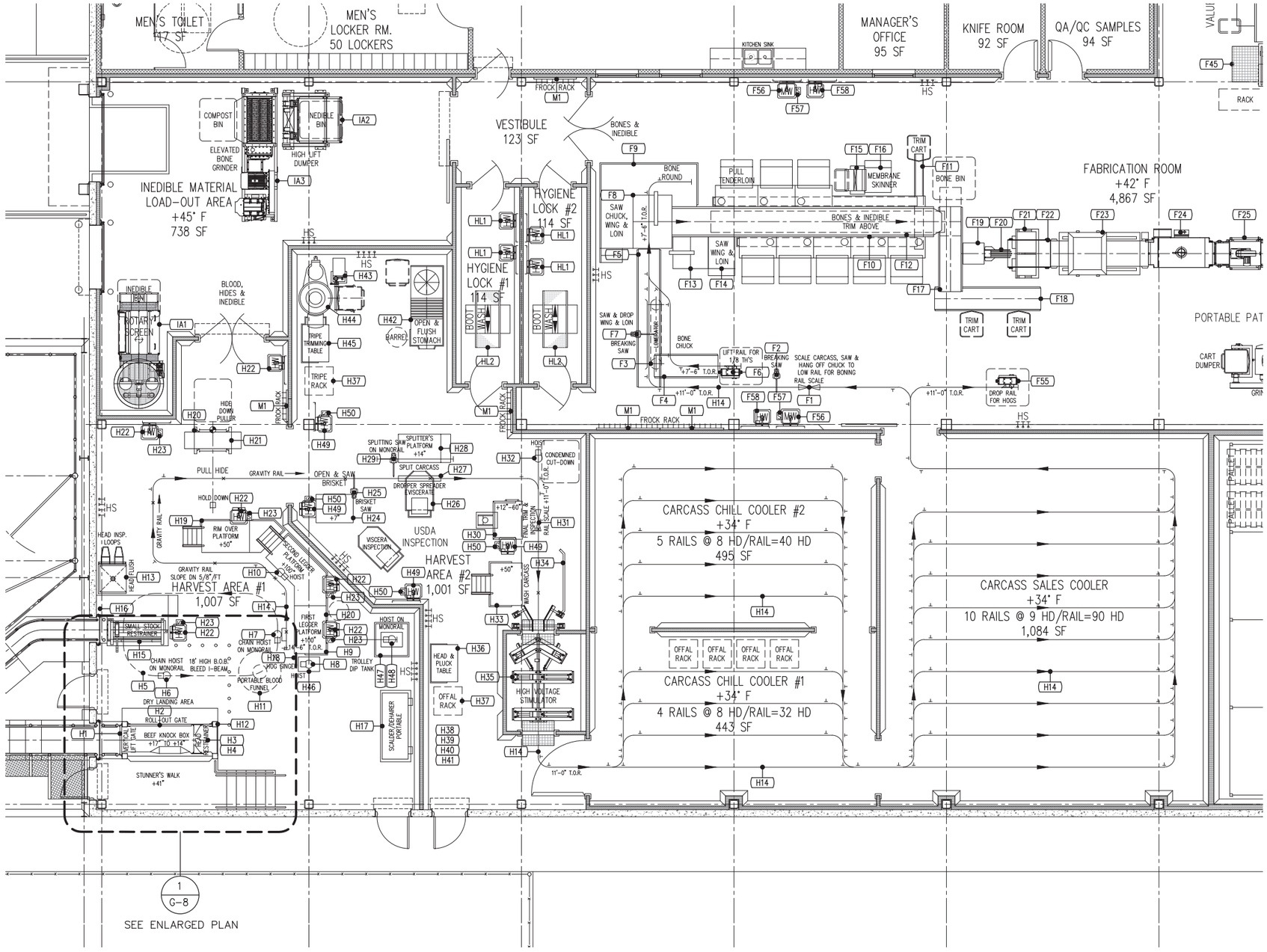
APPROVED:

CHIEF ENGINEER — DATE

DRAWING NO. EQ-1

SHEET NO. 99 OF 106 SHEETS

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY



1 EQ-1 ENLARGED EQUIPMENT PLAN – WEST

3/16"=1'-0"

0 1 2 3 4 5 10

N

REFERENCE ONLY

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

GENERAL NOTES

1. SEE SHEET EQ-3 FOR ENLARGED EAST EQUIPMENT PLAN.
2. SEE SHEET EQ-4, 5, 6 & 7 FOR EQUIPMENT SCHEDULE.
3. SEE SHEET G-8 FOR ENLARGED STUNNING AREA PLAN.
4. SEE SHEET G-14 FOR THE RAIL BEAM FRAMING PLAN.

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

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DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
ENLARGED EQUIPMENT PLAN - WEST

DESIGNED BY: RWG	**SUBMITTED:**
DRAWN BY: RWG	**DATE:**
CHECKED BY: XX	**SCALE:** 3/16"=1'-0"

APPROVED:

CHIEF ENGINEER DATE

DRAWING NO. EQ-2

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY

20'-0" | 20'-0" | 20'-0" | 20'-0" | 19'-6"

A.5

B

C

D

19'-8"

32'-3"

90'-0"

35'-9"

UTTING TABLE

./QC OFFICE
88 SF

'QC SAMPLES
94 SF

HS

VALUE ADDED LINE

F47

F45

F46

BAND SAW

RACK

DRY
WASH

LAUNDRY &
SANITATION
308 SF

EEW

F56

MW

HW

F57

F58

MAINTENANCE
308 SF

HS

RAMP

SCALE

RAMP

F48

VOICE/
DATA
37 SF

ELECTRICAL
258 SF

FROCK RACK

M1

F52

F51

F50

F49

MIXER/
GRINDERS

PLANT SERVICES AREA
589 SF

FABRICATION ROOM
+42° F
4,867 SF

F23

F24

F25

F27

F26

F29

F28

F30

F31

F32

F33

OVER-UNDER CONVEYOR

SCALE & LABEL

TAPER

PALLET

PORTABLE PATTIE/BRICK FORMER

F34

F35

CART DUMPER

PORTIONER

GRINDER/STUFFER

F36

F37

F38

ROLL STOCK MACHINE

LOAD

F39

INK JET

METAL DETECTOR

F40

F41

F42

F43

F44

BOX, SCALE & LABEL

F54a

RACK

NITROGEN CABINET

DRY STORAGE
AMBIENT
630 SF
38 PALLETS @ 3 HIGH

DS1

X

F53

OFFAL RACK

OFFAL PACK TABLE

M1

FROCK RACK

COOLER

IL=90 HD

BLAST FREEZER
-10° F
695 SF
44 PALLETS @ 3 HIGH

BF1

FINISHED GOODS COOLER
+32° F
1,895 SF
100 PALLETS @ 3 HIGH

FG1

FROCK RACK

M1

BATTERY CHARGER

SR1

SR2

FLOOR SCALE

SHIPPING/RECEIVING DOCK
+45° F
606 SF

DOCK OFFICE
66 SF

N

REFERENCE ONLY

1 EQ-1 ENLARGED EQUIPMENT PLAN – EAST

3/16"=1'-0"

0 1 2 3 4 5 10

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GENERAL NOTES

1. SEE SHEET EQ-2 FOR ENLARGED WEST EQUIPMENT PLAN.
2. SEE SHEET EQ-4, 5, 6 & 7 FOR EQUIPMENT SCHEDULE.

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STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
ENLARGED EQUIPMENT PLAN - EAST

DESIGNED BY: RWG	**SUBMITTED:**
DRAWN BY: RWG	**DATE:**
CHECKED BY: XX	**SCALE:** 3/16"=1'-0"

APPROVED:

CHIEF ENGINEER DATE

DRAWING NO. EQ-3

State of Hawaii Livestock Harvest and Further Processing Facility

Equip #	Quantity	Description	Voltage	Phase	HP	Amps	KVA	W/WO Controls	Cord Drop vs. Hard Wire	Air 100 psi, CFM, 1/2" min. drop	H & C Water, 1/2" min. drop	185 PHW, GPM, 1/2" min. drop	NG	Comments
		HARVEST AREA #1 EQUIPMENT												
H-01	1	Vertical Knocking Pen Entrance Gate, 34" wide, pneumatically operated w/ 3" dia. cylinder and manual operating valve, see specifications.	-	-	-	-	-	-	-	10	-	-	-	
H-02	1	Vertical Knocking Pen Discharge Door, 5' high x 8' long w/ heavy duty frame, pneumatically operated w/ two 4" dia. cylinders, manual operating valve and head restrainer device, see specifications.	460	3ph	2 1/2	4.8	3.824	W	CD	20	-	-	-	
H-03	1	Pneumatic Captive Bolt Stunner, Jarvis model USSS-21 or approved equal with air hose assembly, air FLR and balancer.	-	-	-	-	-	-	-	175 PSI, 1.45 CFM/ cycle	-	-	-	Needs overhead support.
H-04	1	Air Compressor for Stunner, Quincy Model QT-54 or approved equal, 175 PSI with 60 gallon vertical tank and adjustable pressure switch.	230	1ph	5	28	11.1544	WO	HW		-	-	-	
H-05	40	Ft. S6"x12.5# I-beam Oval Track, 10'-0"x11'-0", including necessary (4) 36" radius x 90 deg. curves, all necessary hangers, all with hot dip galvanized finish. Also includes all necessary galvanized beam clamps to attach to building support steel supplied by others, 3/4" stainless steel vertical and diagonal bracing rods threaded on each end and welded I-beam attachments, see specifications.	-	-	-	-	-	-	-	-	-	-	-	
H-06	1	Mono-rail Hoist, 1 ton capacity w/ heavy duty trolley, plated link chain and hook, see specifications.	460	3ph	2 1/2	4.8	3.824	W	CD w/ Reel	-	-	-	-	
H-07	1	Mono-rail Hoist, 1 ton capacity w/ heavy duty trolley, plated link chain and hook, see specifications.	460	3ph	2 1/2	4.8	3.824	W	CD w/ Reel	-	-	-	-	
H-08	1	Electric Hoist, 1/2 ton capacity, plated link chain and hook, for raising empty trolley baskets to legging bench, see specifications.	460	3ph	2 1/2	4.8	3.824	W	CD	-	-	-	-	Needs overhead support.
H-09	1	3'-0" x 12'-7" Stationary First and Second Legging Platform, 100" high w/ 45 degree bend, Fibergrate top, heavy duty stainless steel framework, access ship's ladder to Rim Over Platform, guard rails and lavatory support.	-	-	-	-	-	-	-	-	-	-	-	
H-10	1	Electric Hoist, 1/2 ton capacity, plated link chain and hook, for raising second leg trolley onto rail, see specifications.	460	3ph	2 1/2	4.8	3.824	W	CD	-	-	-	-	Needs overhead support.
H-11	1	Portable Stainless Steel Blood Trap, 12.5 gallon capacity w/ 48" dia. Funnel.	-	-	-	-	-	-	-	-	-	-	-	
H-12	1	Low Voltage Beef Stimulator, Jarvis model ES-4 or approved equal w/ wall mounted control panel and nose clamp.	120	1ph	65 W	0.25	0.081	W	HW	-	-	-	-	
H-13	1	Stainless Steel Head Flush and Inspection Cabinet, 30"x33"x5'-6" high w/ two head inspection loops, head flush nozzel & 6' hose.	-	-	-	-	-	-	-	-	3/4" PCW	-	-	3" Hub Drain.
H-14	678	Ft. Overhead Rail System with 1/2" x 2-1/2", round edge, hot rolled steel tracking with electro plated finish, 1/2"x 2-1/2" hot forged steel 12" drop hangers with hot dip galvanized finish. Includes (13) 90 deg. curves, (3) 45 deg. curves, (9) 1,500# capacity automatic switches, (18) 1,500# capacity gear operated switches, (9) manual trolley stops, (5) fixed end stops. Also includes all necessary galvanized beam clamps to attach to building support steel supplied by others, 3/4" stainless steel vertical and diagonal bracing rods threaded each end and galvanized rail beam framing, see specifications.	-	-	-	-	-	-	-	-	-	-	-	
H-15	1	Hog/Sheep Insulated Stun Box w/ top access stunning, see specifications.	-	-	-	-	-	Hand	-	1.16 CF/cycle @ 90 PSI	-	-	-	
H-16	1	Electric Stunner, Best & Donovan model ES or approved equal w/ hand held prod.	120	1ph	50 W	-	0.063	W	CD	-	-	-	-	
H-17	1	Hog Combination Scalder/Dehairing Machine, portable, UltraSource model JWE 25 or approved equal for 100# to 500# hogs w/ pneumatic operated lid and ejection rake, stainless steel cover and housing.	230	3ph	3 KW & 10.0 KW	-	12	W	CD	-	-	-	-	Fill with hose.
H-18	1	Hog Singer w/ 10' hose	-	-	-	-	-	-	-	-	-	-	3/4" NG	
H-19	1	3'-0" x 7'-8" Stationary Rim Over Platform, 50" high w/ irregular shaped end, Fibergrate top, heavy duty stainless steel framework, access ship's ladder, guard rails and lavatory support.	-	-	-	-	-	-	-	-	-	-	-	
H-20	4	Pneumatic Dehiders, Jarvis model JC-IIIA or approved equal w/ filter/lubricator/regulator and 16' hose.	-	-	-	-	-	-	-	12 CFM ea.@ 45 PSI	-	-	-	
H-21	1	Drum Type Hide Puller, UltraSource or approved equal Roll-O-Matic w/ 2 speed hoist, stn.stl. hide & leg chains, leg hold down ring and two stepped operator platform, see specifications.	460	3ph	2 1/2	4.8	3.824	W	CD	-	-	-	-	
H-22	6	Single Station Hand Wash Sink, 15.75" W x 15" D, 14 ga. Type 304 stainless steel with two knee operated valves, soap dispenser and towel dispenser.	-	-	-	-	-	-	-	-	1/2" DCW 1/2" DHW	-	-	1 1/2" NPT drain.
H-23	5	Stainless Steel Knife Sterilizer Box, 5"x8"x8" deep, hung from sink and overflows to sink bowl.	-	-	-	-	-	-	-	-	-	1 ea.	-	

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STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
OVERALL 70 HD/DAY FACILITY EQUIPMENT PLAN

DESIGNED BY: RWG | **SUBMITTED:**
DRAWN BY: RWG | **DATE:**
CHECKED BY: XX | **SCALE:** 3/32"=1'-0"

APPROVED: _____ CHIEF ENGINEER _____ DATE

DRAWING NO. EQ-4

State of Hawaii Livestock Harvest and Further Processing Facility

Equip #	Quantity	Description	Voltage	Phase	HP	Amps	KVA	W/WO Controls	Cord Drop vs. Hard Wire	Air 100 psi, CFM, 1/2" min. drop	H & C Water, 1/2" min. drop	185 PHW, GPM, 1/2" min. drop	NG	Comments
		HARVEST AREA #2 EQUIPMENT												
H-24	1	2'-8" x 3'-6" Stationary Brisket Saw Platform, 7" high w/ Fibergrate top, stainless steel framework, lavatory support and adjustable legs.	-	-	-	-	-	-	-	-	-	-	-	
H-25	1	Brisket Saw, Jarvis model MG-1E or approved equal w/ Balancer, trolley and monorail track.	460	3ph	1 1/2	3	2.390	W	CD	-	-	-	-	Needs overhead support.
H-26	2	Stainless Steel Paunch & Viscera Inspection Truck w/ water operated lift mechanism for dumping into barrels, 16" to 37" and offal tray.	-	-	-	-	-	-	-	-	-	-	-	
H-27	1	Pneumatic Eviscerating Rail Dropper/Carcass Spreader w/ manual operated control valves, flow controls, internal piping and filter/lubricator/regulator, see specifications.	-	-	-	-	-	Hand	-	3.2 CF/Cycle @ 100 PSI	-	-	-	
H-28	1	2'-8" x 4'-0" Stationary Splitters Platform, 12" high w/ Fibergrate top, stainless steel framework, step and adjustable legs.	-	-	-	-	-	-	-	-	-	-	-	
H-29	1	Splitting Saw, Jarvis model M59 or approved equal w/ Balancer, Jarvis model 4042010, trolley and monorail track.	460	3ph	2	3.4	2.709	W	CD	-	-	-	-	Needs overhead support.
H-30	1	2'-8" x 5'-0" Elevating Trim & Inspection Platform, hydraulically powered, 18" to 60" high w/ Fibergrate top, stainless steel framework, access step, lavatory support and hydraulic power unit.	460	3ph	5	7.6	6.055	WO	HW	-	-	-	-	
H-31	1	Rail Scale w/ 42" long rail section, see specifications.	120	1ph	-	10	1.2	W	HW	-	-	-	-	
H-32	1	Electric Hoist, 1/2 ton capacity for lowering condemned carcasses, see specifications.	460	3ph	2 1/2	4.8	3.824	W	CD	-	-	-	-	
H-33	1	Carcass Wash Platform 3'-0" Deep x 4'-0" wide x 60" high w/ Fibergrate top, stainless steel framework, access ship's ladder and adjustable legs.	-	-	-	-	-	-	-	-	-	-	-	
H-34	1	Carcass Wash Spray Shield, stainless steel construction.	-	-	-	-	-	-	-	-	-	-	-	
H-35	1	Small Plant High Voltage Carsass Stimulator, Millard MFg. or approved equal, with safe entry floor mats and walking beam to cycle beef sides through the unit.	230	1ph	-	28	11.1544	W	HW	20	-	-	-	
H-36	1	Head and Pluck Work-up Table, 42" W x 30" D x 34" H with cutting board top, stainless steel framework and adjustable legs.	-	-	-	-	-	-	-	-	-	-	-	
H-37	10	Offal Chilling Racks, stainless steel, portable w/ casters.	-	-	-	-	-	-	-	-	-	-	-	
H-38	100	Beef Trolleys, see specifications.	-	-	-	-	-	-	-	-	-	-	-	
H-39	100	Hog Gambrels, see specifications.	-	-	-	-	-	-	-	-	-	-	-	
H-40	100	Sheep Trolleys, see specifications.	-	-	-	-	-	-	-	-	-	-	-	
H-41	100	Forequarter Hooks, see specifications.	-	-	-	-	-	-	-	-	-	-	-	
H-42	1	Stomach Opening Table, heavy duty stainless steel construction with paunch dumping section and rinsing cone.	-	-	-	-	-	-	-	-	3/4" PCW	-	-	Hand Operated Spray drop above table
H-43	1	Fixed Column Dumper for 600# capacity carts.	460	3ph	2	3.4	2.709	W	HW	-	-	-	-	
H-44	1	Two Speed, Reversing Tripe Washer/Refiner, La Parmentiere Mexicali model 670R or approved equal with funnel hopper and thermostatic mixer.	460	3ph	15	21	16.7316	WO	HW	10	1" PCW	4.4	-	
H-45	1	Head and Pluck Work-up Table, 42" W x 30" D x 34" H with cutting board top, stainless steel framework and adjustable legs.	-	-	-	-	-	-	-	-	-	-	-	
H-46	3	Empty Trolley Carts, 16" x 24", portable w/ casters.	-	-	-	-	-	-	-	-	-	-	-	
H-47	1	Trolley Oil Dip Tank, 28" x 34" w/ electric heating element.	120	1ph	1,100 W	-	1.375	W	CD	-	-	-	-	
H-48	1	Electric Hoist, 1/2 ton capacity for transferring trolley carts to/from oil dip tank, see specifications.	460	3ph	2 1/2	4.8	3.824	W	CD	-	-	-	-	
H-49	4	Single Station Hand Wash Sink, 15.75" W x 15" D, 14 ga. Type 304 stainless steel with two knee operated valves, soap dispenser and towel dispenser, curb mounted on stainless steel frame.	-	-	-	-	-	-	-	-	1/2" DCW 1/2" DHW	-	-	1 1/2" NPT drain.
H-50	4	Stainless Steel Knife Sterilizer Box, 5"x8"x8" deep, hung from sink and overflows to sink bowl.	-	-	-	-	-	-	-	-	-	1 ea.	-	
		FABRICATION ROOM EQUIPMENT												
F-1	1	Rail Scale w/ 42" long rail section, see specifications.	120	1ph	-	10	1.2	W	HW	-	-	`	-	
F-2	1	Breaking Saw, Kentmaster Zip Saw or approved equal.	120	1ph	-	15	1.8	W	CD	-	-	-	-	
F-3	1	Electric Powered, Carcass Lowerator, 11'-0" to 7'-6", see specifications.	460	3ph	2	3.4	2.709	WO	HW	-	-	-	-	
F-4	1	Inclined Product Belt Conveyor, 24" wide x 6'-0" long with stainless steel framework, modular plastic belt and electric drive.	460	3ph	1	2.1	1.673	W	HW	-	-	-	-	
F-5	1	Inclined Product Belt Conveyor, 24" wide x 13'-0" long with stainless steel framework, modular plastic belt and electric drive.	460	3ph	1	2.1	1.673	W	HW	-	-	-	-	
F-6	1	Pneumatic Lift with hand operated control valve.	-	-	-	-	-	Hand	-	10	-	-	-	
F-7	1	Breaking Saw, Kentmaster Zip Saw or approved equal.	120	1ph	-	15	1.8	W	CD	-	-	-	-	
F-8	1	Band Saw, Butcher Boy, Model SA-30 or approved equal with fixed top, electric drive and water spray.	460	3ph	7 1/2	10.8	8.60483	WO	HW	-	1/2" PCW	-	-	Hand Operated Spray drop above saw
F-9	1	Saw and Operator's Platform with heavy duty stainless steel framework and fibergrate top.	-	-	-	-	-	-	-	-	-	-	-	
F-10	1	Boning Table, 30" wide x 24'-8" long with heavy duty stainless steel framework, modular plastic belt, variable speed electric drive, (8) cutting board stations and (8) ergonomic work stands.	460	3ph	3	4.8	3.824	WO	HW	-	-	-	-	

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SELECTED SITE MAY ALTER DESIGN

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY

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SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

SHEET TITLE
OVERALL 70 HD/DAY FACILITY EQUIPMENT PLAN

DESIGNED BY: RWG	**SUBMITTED:**
DRAWN BY: RWG	**DATE:**
CHECKED BY: XX	**SCALE:** 3/32"=1'-0"

APPROVED: _____ _____
CHIEF ENGINEER DATE

DRAWING NO. EQ-5

State of Hawaii Livestock Harvest and Further Processing Facility

Equip #	Quantity	Description	Voltage	Phase	HP	Amps	KVA	W/WO Controls	Cord Drop vs. Hard Wire	Air 100 psi, CFM, 1/2" min. drop	H & C Water, 1/2" min. drop	185 PHW, GPM, 1/2" min. drop	NG	Comments
		FABRICATION ROOM EQUIPMENT CONTINUED												
F-11	1	Trim Crossover Belt Conveyor, 8" wide x 9'-0" long with stainless steel framework, modular plastic belt and electric drive.	460	3ph	1	2.1	1.673	W	HW	-	-	-	-	
F-12	1	Overtable Bone and Inedible Trim Belt Conveyor, 20" wide x 22'-0" long with stainless steel framework, modular plastic belt, electric drive and discharge slide.	460	3ph	2	3.4	2.709	W	HW	-	-	-	-	
F-13	1	Band Saw, Butcher Boy, Model SA-20 or approved equal with fixed top, electric drive and water spray.	460	3ph	3	4.8	3.824	W	HW	-	1/2" PCW	-	-	Hand Operated Spray drop above saw
F-14	1	Saw and Operator's Platform with heavy duty stainless steel framework and fibergrate top.	-	-	-	-	-	-	-	-	-	-	-	
F-15	1	Membrane Skinner, Grasselli, Model RST520M or approved equal with electric drive.	460	3ph	2	3.4	2.709	W	HW	-	-	-	-	
F-16	1	Skinner and Operator's Platform with heavy duty stainless steel framework, fibergrate top and tote stand.	-	-	-	-	-	-	-	-	-	-	-	
F-17	1	Product Crossover Belt Conveyor, 24" wide x 8'-0" long with stainless steel framework, modular plastic belt and electric drive.	460	3ph	1	2.1	1.673	W	HW	-	-	-	-	
F-18	1	Trim Sorting Belt Conveyor, 24" wide x 10'-0" long with stainless steel framework, modular plastic belt and electric drive.	460	3ph	1	2.1	1.673	W	HW	-	-	-	-	
F-19	1	Table, 24" W x 24" L x 34" H with stainless steel top, stainless steel framework, undershelf and adjustable legs.	-	-	-	-	-	-	-	-	-	-	-	
F-20	1	Manual Bagger.	-	-	-	-	-	-	-	-	-	-	-	
F-21	1	Bag Rack.	-	-	-	-	-	-	-	-	-	-	-	
F-22	1	Packaging Pacing Belt Conveyor, 30" wide x 4'-0" long with stainless steel framework, modular plastic belt and electric drive.	460	3ph	1	2.1	1.673	W	HW	-	-	-	-	
F-23	1	4'-0"X7'-0" Double Chamber Vacuum Packaging Machine, Koch Ultravac, Model 800 D or approved equal, w/ 10 HP Vacuum Pump.	240	3ph	10	25	10.392	W	CD	10	1/2" PCW	-	-	
F-24	1	Shrink Tunnel, Koch UltraShrink 3012 or approved equal.	460	3ph	1	2.1	1.673	W	HW	-	-	-	-	
F-25	1	Bag Blow-off Unit.	460	3ph	1	2.1	1.673	W	HW	-	-	-	-	
F-26	1	Bagged Product Belt Conveyor, 20" wide x 10'-0" long with stainless steel framework, modular plastic belt and electric drive.	460	3ph	2	3.4	2.709	W	HW	-	-	-	-	
F-27	8	Box Packoff Stations, stainless steel framework with roller top.	-	-	-	-	-	-	-	-	-	-	-	
F-28	1	Box Takeaway Belt Conveyor, 20" wide x 10'-0" long with stainless steel framework, modular plastic belt and electric drive.	460	3ph	2	3.4	2.709	W	HW	-	-	-	-	
F-29	1	Portable Boxing Bench Scale, 20" x 24" platform, 150# capacity with roller top, bench stand, castors, NEMA 4X pillar supported indicator with +/-1# accuracy, heavy duty stainless steel construction.	120	1ph	-	3	0.36	W	CD	-	-	-	-	
F-30	1	Label Printer to print production lot number, product I.D., piece count and box net weight in human readable and serialized bar code format. Label to be hand applied.	120	1ph	-	3	0.36	W	CD	-	-	-	-	
F-31	1	Table, 24" W x 24" L x 34" H with stainless steel top, stainless steel framework, undershelf and adjustable legs.	-	-	-	-	-	-	-	-	-	-	-	
F-32	1	Carton Taper.	120	1ph	1/2	4.4	0.528	W	CD	-	-	-	-	
F-33	1	Roller Conveyor, 20" wide x 4'-0" long with stainless steel framework and plastic rollers.	-	-	-	-	-	-	-	-	-	-	-	
F-34	1	RISCO model RS 916 Grinder/Stuffer or approved equal with cart loader, grinder/forming head and brick/loaf portioning system.	460	3ph & 1ph	20 & 1.5	27.4	21.831	W	CD	10	-	-	-	
F-35	1	RISCO model _____ Pattie Portioning System for use with RS 916 Grinder/Stuffer.	-	-	-	-	-	-	-	-	-	-	-	Utilities included in item F-34
F-36	1	Table, 40" W x 60" L x 34" H with stainless steel top, stainless steel framework, undershelf and adjustable legs.	-	-	-	-	-	-	-	-	-	-	-	
F-37	1	Roll Stock Vacuum Packaging machine.	230	3ph	-	50	19.919	W	HW	10	1/2" PCW	-	-	
F-38	1	Busch RA 0255 Vacuum Pump or approved equal for Roll Stock machine.	460	3ph	10	14	11.1544	WO	HW	-	-	-	-	Pipe to & interlock with item F-37
F-39	1	Ink Jet Printer, Bellmark or approved equal.	120	1ph	-	3	0.36	W	CD	5	-	-	-	
F-40	1	Metal Detector with reject system.	120	1ph	1/2	4.4	0.528	W	CD	10	-	-	-	
F-41	1	Boxing Table, 24" W x 24" L x 34" H with stainless steel top, stainless steel framework, undershelf and adjustable legs.	-	-	-	-	-	-	-	-	-	-	-	
F-42	1	Portable Boxing Bench Scale, 20" x 24" platform, 150# capacity with roller top, bench stand, castors, NEMA 4X pillar supported indicator with +/-1# accuracy, heavy duty stainless steel construction.	120	1ph	-	3	0.36	W	CD	-	-	-	-	
F-43	1	Label Printer to print production lot number, product I.D., piece count and box net weight in human readable and serialized bar code format. Label to be hand applied.	120	1ph	-	3	0.36	W	CD	-	-	-	-	
F-44	1	Table, 24" W x 24" L x 34" H with stainless steel top, stainless steel framework, undershelf and adjustable legs.	-	-	-	-	-	-	-	-	-	-	-	
F-45	1	Band Saw, Butcher Boy, Model SA-20 or approved equal with moving top, electric drive and water spray.	460	3ph	3	4.8	3.82437	WO	HW	-	1/2" PCW	-	-	Hand Operated Spray drop above saw
F-46	1	Saw and Operator's Platform with heavy duty stainless steel framework and fibergrate top.	-	-	-	-	-	-	-	-	-	-	-	

60% DESIGN DRAWING SET NOT FOR CONSTRUCTION
SELECTED SITE MAY ALTER DESIGN

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

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EXPIRATION DATE OF THE LICENSE XX/XX/XXXX

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION

SCALABLE AND REPLICABLE LIVESTOCK HARVESTING FACILITY
PROJECT NO. DOASW07

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CHIEF ENGINEER DATE

DRAWING NO. EQ-6

State of Hawaii Livestock Harvest and Further Processing Facility

Equip #	Quantity	Description	Voltage	Phase	HP	Amps	KVA	W/WO Controls	Cord Drop vs. Hard Wire	Air 100 psi, CFM, 1/2" min. drop	H & C Water, 1/2" min. drop	185 PHW, GPM, 1/2" min. drop	NG	Comments
		FABRICATION ROOM EQUIPMENT CONTINUED												
F-47	1	Boning Table, 20" wide x 11'-0" long with heavy duty stainless steel framework, modular plastic belt, variable speed electric drive, (4) cutting board stations and (6) tote supports.	460	3ph	3	4.8	3.824	WO	HW	-	-	-	-	
F-48	1	Floor Platform Scale for 600# capacity ingredient carts, above floor low profile portable style with 3' x 3' platform, access ramps, heavy duty stainless steel construction, NEMA 4X wall mounted indicator with data output and +/-1# accuracy.	120	1ph	-	3	0.36	W	CD	-	-	-	-	
F-49	1	Fixed Column Dumper for 600# capacity carts.	460	3ph	2	3.4	2.709	W	HW	-	-	-	-	
F-50	1	300# Capacity Course Mixer/Grinder, Hollymatic model 3000 or approved equal with foot switch.	460	3ph	10 & 1.5	36	28.6828	W	HW	-	-	-	-	
F-51	1	300# Capacity Fine Mixer/Grinder, Hollymatic model 3000 or approved equal with foot switch and Gemini connection.	460	3ph	10 & 1.5	36	28.6828	W	HW	-	-	-	-	
F-52	1	Access Platform with heavy duty stainless steel framework and fibergrate top.	-	-	-	-	-	-	-	-	-	-	-	
F-53	1	Offal Packing Table, 36" deep x 48" wide with box loading shelf, stainless steel framework and cutting board top.	-	-	-	-	-	-	-	-	-	-	-	
F-54a	1	Nitrogen Double Door Cabinet Batch Freezer, 384#/batch, +40 deg. F inlet, 0 deg. F outlet with automatic on-off control, 4 stn. stl. dollies, 4 stn. stl. racks and 76 stn. stl. trays.	460	3ph	-	12	9.561	W	HW	-	-	-	-	Pipe vent to wall mounted exhaust fan.
F-54b	1	Bulk Nitrogen Tank, 3,000 gallon.	-	-	-	-	-	-	-	-	-	-	-	Nitrogen piping to cabinet, item F-54a, by vendor.
F-55	1	Pneumatic Lift with hand operated control valve.	-	-	-	-	-	Hand	-	10	-	-	-	
F-56	4	Product Wash Sink, 19.75" W x 19" D, 14 ga. Type 304 stainless steel with one knee operated valves and perforated tray, curb mounted on stainless steel frame.	-	-	-	-	-	-	-	-	1/2" DCW	-	-	1 1/2" NPT drain.
F-57	4	Stainless Steel Knife Sterilizer Box, 5"x8"x8" deep, hung from sink and overflows to sink bowl.	-	-	-	-	-	-	-	-	-	1 ea.	-	
F-58	4	Single Station Hand Wash Sink, 15.75" W x 15" D, 14 ga. Type 304 stainless steel with two knee operated valves, soap dispenser and towel dispenser, curb mounted on stainless steel frame.	-	-	-	-	-	-	-	-	1/2" DCW 1/2" DHW	-	-	1 1/2" NPT drain.
		HYGIENE LOCK EQUIPMENT												
HL-1	4	Single Station Hand Wash Sink, 15.75" W x 15" D, 14 ga. Type 304 stainless steel with two knee operated valves, soap dispenser and towel dispenser, curb mounted on stainless steel frame.	-	-	-	-	-	-	-	-	1/2" DCW 1/2" DHW	-	-	1 1/2" NPT drain.
HL-2	2	Boot Sole Washer, Roser model 11741 or approved equal.	460	3ph	1	2.1	1.673	W	HW	-	1/2" PCW 1/2" PHW	-	-	1 1/2" NPT drain.
		FINISHED GOODS COOLER EQUIPMENT												
FG-1	100	Pallet Rack for refrigerated products, selective style with uprights, load beams and wire shelving, 5 rows x 4 bays (8 pallets wide) x 3 high, less tunnels = 100 pallet positions, painted finish.	-	-	-	-	-	-	-	-	-	-	-	
		BLAST FREEZER EQUIPMENT												
BF-1	44	Pallet Rack for refrigerated products, selective style with uprights, load beams and wire shelving, 2 rows x 4 bays (8 pallets wide) x 3 high, less tunnel = 44 pallet positions, painted finish.	-	-	-	-	-	-	-	-	-	-	-	
		DRY STORAGE EQUIPMENT												
DS-1	38	Pallet Rack for refrigerated products, selective style with uprights, load beams and wire shelving, 2 rows x 3 1/2 bays (7 pallets wide) x 3 high, less tunnel = 38 pallet positions, painted finish.	-	-	-	-	-	-	-	-	-	-	-	
		INEDIBLE AREA EQUIPMENT												
IA-1	1	Wastewater Internally Fed Rotary Screen, IPEC model IFS 3648 or approved equal with 6" ID pipe inlet, 8" ID pipe outlet and 0.040 slot screen drum.	460	3ph	3/4	1.6	1.275	WO	HW	-	1 1/4" PHW	-	-	
IA-2	1	High Lift Combo/Barrel Dumper with self contained hydraulic power unit.	460	3ph	10	14	11.1544	WO	HW	-	-	-	-	
IA-3	1	Bone Grinder, ANCO model Duracut Prebreaker or approved equal with stainless steel feed chute with "rare earth" magnet, 25 mm cutters and 7' high heavy duty stainless steel stand.	460	3ph	100	130.04	103.609	WO	HW	-	-	-	-	
		MISCELLANEOUS EQUIPMENT												
M-1	7	Frock Racks, 1/4" x 2" stainless steel flat bar with 1/4" dia. x 1-1/2" lg. stainless steel hooks on 6" centers, 2 @ 6 hooks, 4 @ 8 hooks and 2 @ 12 hooks each.	-	-	-	-	-	-	-	-	-	-	-	
		SHIPPING/RECEIVING DOCK												
SR-1	1	Walkie Stacker, Toyota model 8BWS13, 2,500# load capacity, 143" lift height with battery and charger.	460	3ph	-	20	15.9349	W	HW	-				
SR-2	1	Shipping Dock Floor Scale.	120	1ph	-	3	0.36	W	CD	-				

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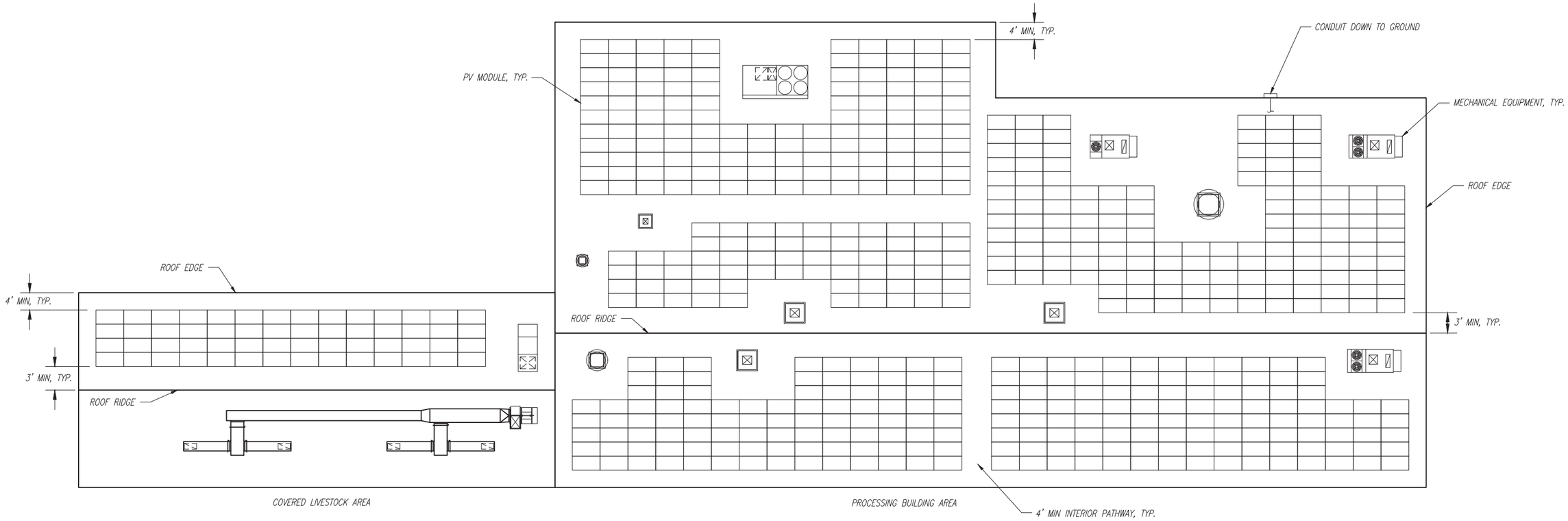
DESIGNED BY: RWG | SUBMITTED:
DRAWN BY: RWG | DATE:
CHECKED BY: XX | SCALE: 3/32"=1'-0"

APPROVED:
CHIEF ENGINEER DATE

DRAWING NO. EQ-7



ROOF PV MODULE LAYOUT

SCALE: 1"=12'-0"

GENERAL NOTES:

1. SOLAR PHOTOVOLTAIC (PV) SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE.
2. THE ELECTRICAL PORTION OF THE SOLAR PV SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70.
3. SOLAR ENERGY CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL DESIGN OF ROOF PV INSTALLATION. THIS INCLUDES BUT IS NOT LIMITED TO FOLLOWING:
   - PV SYSTEM CONFIGURATION
   - PANEL AND INVERTER SELECTION
   - ROOF RACKING
   - PV CONNECTION TO ELECTRICAL SYSTEM
4. CONCEPTUAL ROOF PV LAYOUT MODULE DC NAMEPLATE: 288.0 kW

0 12' 24'

SCALE IN FEET

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PROJECT NO. DOASW07

SHEET TITLE
CONCEPTUAL ROOF PV MODULE LAYOUT

DESIGNED BY: DR	SUBMITTED: 12/6/2021
DRAWN BY: VA	DATE:
CHECKED BY: BI	SCALE: 1" = 12'-0"

APPROVED:

CHIEF ENGINEER DATE

DRAWING NO. PV-1