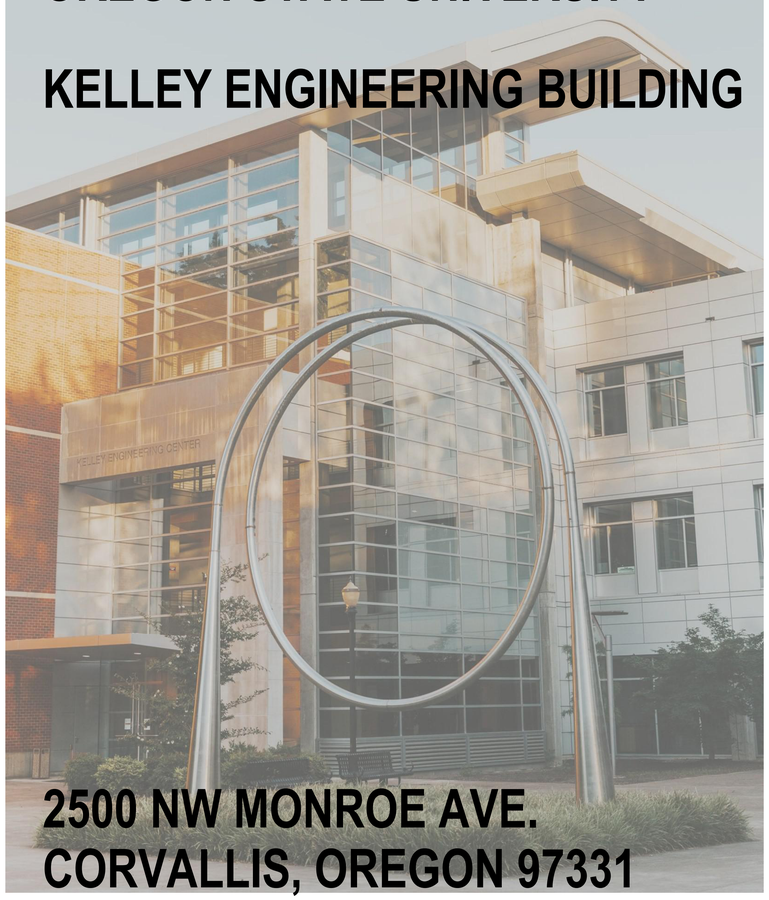
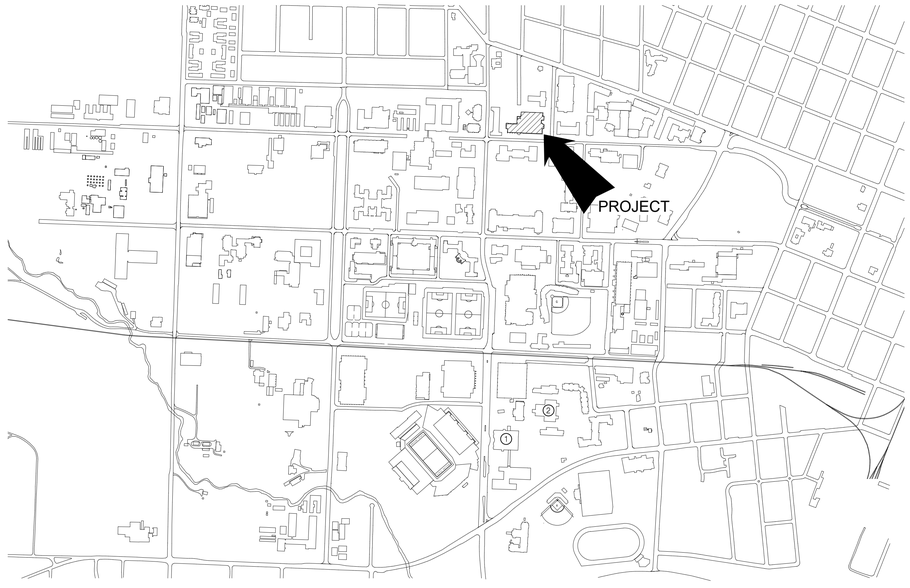
OREGON STATE UNIVERSITY

KELLEY ENGINEERING BUILDING



2500 NW MONROE AVE.
CORVALLIS, OREGON 97331



NORTH

AREA MAP

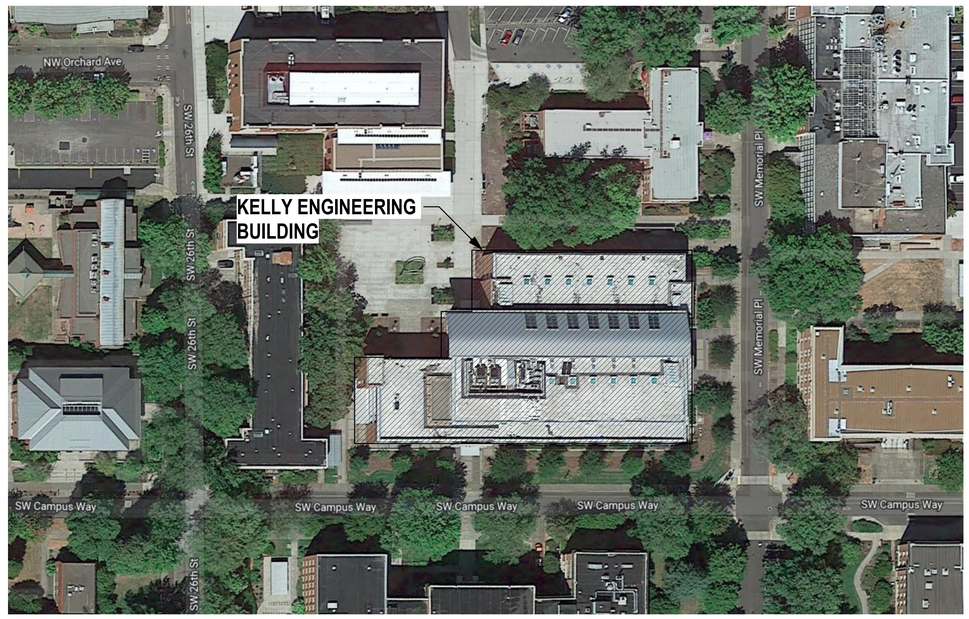
NOT TO SCALE

100% DESIGN DEVELOPMENT OCTOBER 14TH, 2022

OWNER:
OREGON STATE UNIVERSITY
850 SW 35th Street
Corvallis, OR 97333
Contact:
Ryan Wilson
Construction Manager
p. 503-779-3488

MECHANICAL & ELECTRICAL:
SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
p. 541.342.7210
systemswestengineers.com
Contact:
Tyson Oleman
Mechanical Engineer
d. 458.210.2661

SHEET INDEX



NORTH

SITE MAP

NOT TO SCALE

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE. CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

COVER SHEET - CONTACTS, AREA MAP, SITE MAP & SHEET INDEX

MARK	DATE	DESCRIPTION

DESIGNED:	SGS
DRAWN:	PZL
CHECKED:	TKO
DATE:	10.14.2022
PROJECT:	V015.23

G001

PLOTTED BY PZL ON 10/14/2022 12:48:20 PM

MECHANICAL LEGEND

PIPING

TYPES

SYMBOL	ABBREV.	DESCRIPTION
HYDRONIC		
	CWS	CHILLED WATER SUPPLY
	CWR	CHILLED WATER RETURN
	HS	HEATING WATER SUPPLY
	HR	HEATING WATER RETURN
	CD	CONDENSATE DRAIN
	CDS	CONDENSER WATER SUPPLY
	CDR	CONDENSER WATER RETURN
	HRS	HEAT RECOVERY SUPPLY
	HRR	HEAT RECOVERY RETURN
STEAM		
	MPS	MEDIUM PRESSURE STEAM 15 psi-60 psi
	LPS	LOW PRESSURE STEAM <15 psi
	LPR	LOW PRESSURE CONDENSATE RETURN
	PR	PUMPED CONDENSATE RETURN
	SSV	STEAM SAFETY VALVE
FUEL		
	G(*)	NATURAL GAS (*=SUPPLY PRESSURE)
REFRIGERANT		
	RL	REFRIGERANT LIQUID
	RS	REFRIGERANT SUCTION
	RHG	REFRIGERANT HOT GAS
FIRE PROTECTION		
	F	FIRE SPRINKLER SUPPLY
PLUMBING		
	CW	POTABLE COLD WATER
	HW	POTABLE HOT WATER
	HWR	POTABLE HOT WATER RETURN
	NP	NON-POTABLE COLD WATER
	W	SANITARY WASTE
	PW	PUMPED WASTE
	V	VENT
	D	DRAIN
	SD	STORM DRAIN
	OD	OVERFLOW DRAIN

MISCELLANEOUS FITTINGS

SYMBOL	ABBREV.	DESCRIPTION
		WYE STRAINER
		SIGHT FLOW INDICATOR
W		SENSOR WELL
MAV		MANUAL AIR VENT
AAV		AUTOMATIC AIR VENT
		THERMOMETER
		PRESSURE GAUGE
		TEST PLUG
		WATER FLOW METER
		VENTURI
	FMS	FLOW MEASURING STATION

FITTINGS

SYMBOL	ABBREV.	DESCRIPTION
		PIPING UP
		PIPING DOWN
		DIRECTION OF SLOPE
		CAPPED PIPE
		PIPE REDUCING FITTING: CONCENTRIC, ECCENTRIC
		DIRECTION OF FLOW
		UNION
		FLEXIBLE PIPE CONNECTION

VALVES

SYMBOL	ABBREV.	DESCRIPTION
	DV	DRAIN VALVE WITH HOSE CONNECTION
	BV	BALL VALVE
	BFV	BUTTERFLY VALVE
	CHV	CHECK VALVE
	GV	GATE VALVE
	GBV	GLOBE VALVE
		BALANCING VALVE / ECCENTRIC PLUG VALVE
	PRV	PRESSURE REGULATING VALVE
M		SELF CONTAINED CONTROL VALVE
CFR		CONSOLIDATED FITTING RETURN
CFS		CONSOLIDATED FITTING SUPPLY
SRV	RV	RELIEF VALVE
	SRV	SAFETY RELIEF VALVE (HYDRONIC)
	SSV	STEAM SAFETY VALVE
	TPS	TEMPERATURE/PRESSURE SAFETY VALVE

AUTOMATIC VALVES

SYMBOL	ABBREV.	DESCRIPTION
	FCV	AUTOMATIC FLOW CONTROL VALVE
A	AV	AUTOMATIC CONTROL VALVE: 2-WAY
A	AV	AUTOMATIC CONTROL VALVE: 3-WAY
A	AV	AUTOMATIC BUTTERFLY VALVE
A	AV	THREE-WAY BYPASS VALVE
S	SV	SOLENOID VALVE

EQUIPMENT

SYMBOL	ABBREV.	DESCRIPTION
	FD	FLOOR DRAIN
RP		REDUCED PRESSURE BACKFLOW PREVENTER
		PUMP
SD		PUMP SUCTION DIFFUSER
		FAN

DUCTWORK

SYMBOL	ABBREV.	DESCRIPTION
	SA	RECTANGULAR SUPPLY AIR DUCT UP
	RA	RECTANGULAR RETURN AIR DUCT UP
	EA	RECTANGULAR EXHAUST AIR UP
	OSA	RECTANGULAR OUTSIDE AIR UP
	MAS	RECTANGULAR MAKE-UP AIR DUCT UP
		RECTANGULAR SUPPLY AIR, & MAKE-UP AIR DUCT DOWN
		RECTANGULAR RETURN AIR DOWN
		RECTANGULAR EXHAUST AIR or OUTSIDE AIR DOWN
		ROUND DUCTWORK UP
		ROUND DUCTWORK DOWN
		TURN VANE ELBOW
R		STANDARD RADIUS ELBOW
		FLEXIBLE DUCT CONNECTION
12"x6"		DUCT SIZE: WIDTH x DEPTH
		INTERNALLY LINED OR DOUBLE WALL DUCTWORK
		MANUAL VOLUME DAMPER
S		DUCT SMOKE DETECTOR
F		FIRE DAMPER
C		COMBINATION FIRE/SMOKE DAMPER: HORIZONTAL BLADE
A		AUTOMATIC CONTROL DAMPER
		RECTANGULAR DUCT ANGLED CHANGE IN ELEVATION
		ROUND DUCT ANGLED CHANGE IN ELEVATION
		CONCENTRIC TRANSITION
		ECCENTRIC TRANSITION
		MITERED TEE WITH TURNING VANES
		MITERED ELBOW WITH BRANCH FITTING
		45 DEGREE LATERAL BRANCH, ROUND
		45 DEGREE ENTRY BRANCH, ROUND OR RECTANGULAR
		CONICAL BRANCH, ROUND

GENERAL

SYMBOL	DESCRIPTION
(E)	EXISTING
ø OR dia	DIAMETER
	NEW TO EXISTING POINT OF CONNECTION
	NOTE REFERENCE MARKER
1 M101 / 1 M-521	PLAN OR DETAIL NUMBER / SHEET NUMBER
	PLAN OR DETAIL REFERENCE MARKER
1 M-301	SECTION LETTER / SHEET NUMBER
	SECTION REFERENCE MARKER W/VIEW DIRECTION
AHU 12	EQUIPMENT TYPE / EQUIPMENT NUMBER
	EQUIPMENT MARKER
Room Name 101	ROOM NAME / ROOM NUMBER
	ROOM MARKER
	EXISTING SHOWN LIGHT
	NEW WORK SHOWN BOLD
	EXISTING TO BE REMOVED
—P— — —P— — —P—	PACKAGE EQUIPMENT BOUNDRY

CONTROL SCHEMATIC SYMBOLS

SYMBOL	DESCRIPTION
	PROCESS PIPING SIGNAL
	ELECTRICAL SIGNAL
T AHU-1	SPACE THERMOSTAT
T AHU-1	SPACE TEMPERATURE
H	SPACE HUMIDITY
CO_2	SPACE CARBON DIOXIDE
V	SPACE MULTIFUNCTION
T	TEMPERATURE MEASUREMENT
P	PRESSURE MEASUREMENT
H	HUMIDITY MEASUREMENT
F	FLOW MEASUREMENT S = SENSOR T = TRANSMITTER
SD	SMOKE DETECTOR
G CO_2	GAS CONCENTRATION CO CO2 NO2
R	RELAY OR SWITCH C = ELECTRIC CURRENT FS = FLOW SWITCH HP = HIGH PRESSURE LP = LOW PRESSURE
T FP	RELAY FREEZE PROTECTION
R C	ELECTRICAL CURRENT/POWER

SYMBOL	DESCRIPTION
A	ACTUATOR - ELECTRIC
A	AUTOMATIC CONTROL DAMPER
ES	EMERGENCY STOP SWITCH
AI ALARM	BAS INPUT/OUTPUT POINT AI = ANALOG INPUT AO = ANALOG OUTPUT DI = DIGITAL INPUT DO = DIGITAL OUTPUT FUNCTION DESIGNATION S/S = START/STOP
VFD CWP-2	EQUIPMENT CONTROL PANEL (W/EQUIP. INDICATED UNDERLINED) CP = CONTROL PANEL BCP = BOILER CONTROL PANEL CCP = CHILLER CONTROL PANEL FAP = FIRE ALARM PANEL MC = MOTOR CONTROLLER VFD = VARIABLE FREQUENCY DRIVE
P DP	RELAY DP = DIFFERENTIAL PRESSURE
MC	MOTOR CONTROL
F S	FLOW SWITCH
CP	CONTROL PANEL
HRC	HEAT RECOVERY COIL
HC	HEATING WATER COIL
CC	CHILLED WATER COIL

DIFFUSERS AND GRILLES

SEE SPECIFICATIONS

SYMBOL	ABBREV.	DESCRIPTION
SD-1 10"x10" 200		DIFFUSER TYPE SIZE - BLOW PATTERN (4-WAY IF NONE SHOWN) AIR VOLUME IN CUBIC FEET per MINUTE (CFM)
RG-1 12"x10" 175		GRILLE TYPE SIZE AIR VOLUME IN CUBIC FEET per MINUTE (CFM)
EG-1 12"x10" 175		GRILLE TYPE SIZE AIR VOLUME IN CUBIC FEET per MINUTE (CFM)
EG-1 6"x4" 100		GRILLE TYPE OR SIDE WALL DIFFUSER SIZE AIR VOLUME IN CUBIC FEET per MINUTE (CFM)

ABBREVIATIONS

ABBREV	ABBREVIATION
ACH	AIR CHANGES PER HOUR
AFF	ABOVE FINISHED FLOOR
AFS	AUTOMATIC FIRE SPRINKLER
AI	ANALOG INPUT
AL	ALUMINUM
ALT	ALTERNATE
AMP	AMPERE
AO	ANALOG OUTPUT
APD	AIR PRESSURE DROP
AWT	AVERAGE WATER TEMPERATURE
BAS	BUILDING AUTOMATION SYSTEM
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BTUH	BRITISH THERMAL UNITS PER HOUR
CFH	CUBIC FEET per HOUR
CFM	CUBIC FEET per MINUTE
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONT	CONTINUATION
CU FT	CUBIC FEET
D	DEPTH
(D)	DEMOLITION
DB	DRY BULB
dBa	DECIBELS ACOUSTIC
DDC	DIRECT DIGITAL CONTROL
DEMO	DEMOLITION
DI	DIGITAL INPUT
DN	DOWN
DO	DIGITAL OUTPUT
DP	DIFFERENTIAL PRESSURE
DX	DIRECT EXPANSION
(E)	EXISTING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ECM	ELECTRONICALLY COMMUTATED MOTOR
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
EG	EXHAUST GRILLE
EMS	ENERGY MANAGEMENT SYSTEM
ENT	ENTERING
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
°F	DEGREES FAHRENHEIT
FLA	FULL LOAD AMPS
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET
FT2	SQUARE FEET
FT WC	FEET WATER COLUMN
FUT	FUTURE
GALV	GALVANIZED
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GYP BD	GYPSUM WALL BOARD
H	HEIGHT
HP	HORSEPOWER
HR	HEAT RECOVERY
HSPF	HEATING SEASONAL PERFORMANCE FACTOR
HVAC	HEATING, VENTILATING, & AIR CONDITIONING
HZ	HERTZ (CYCLES PER SECOND)
IAQ	INDOOR AIR QUALITY
IN	INCHES
IN WC	INCHES WATER COLUMN
IPLV	INTEGRATED PART LOAD VALUE
IW	INDIRECT WASTE
KW	KILOWATT
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LON	LOCAL OPERATING NETWORK
LVG	LEAVING
LWT	LEAVING WATER TEMPERATURE
mA	MILLIAMPERE
MA	MIXED AIR
MAX	MAXIMUM
MBH	THOUSAND BTUs per HOUR
MCA	MINIMUM CIRCUIT AMPS
MERV	MINIMUM EFFICIANCY REPORTING VALUE
MFR	MANUFACTURER
MIN	MINIMUM
MIN EFF	MINIMUM EFFICIENCY
MOP	MAXIMUM OVERCURRENT PROTECTION
(N)	NEW
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NPLV	NON-STANDARD PART LOAD VALUE
NPSH	NET POSITIVE SUCTION HEAD
NR	NOT REQUIRED
OAT	OUTSIDE AIR TEMPERATURE
OCC	OCCUPIED
OFCI	OWNER FURNISHED/ CONTRACTOR INSTALLED
OSA	OUTSIDE AIR
PD	PRESSURE DROP
PH	PHASE
PPH	POUNDS per HOUR
PSI	POUNDS per SQUARE INCH
PSIG	POUNDS per SQUARE INCH GAUGE
RA	RETURN AIR
RAT	RETURN AIR TEMPERATURE
REQD	REQUIRED
RG	RETURN GRILLE
RH	RELATIVE HUMIDITY
RL	REFRIGERANT LIQUID
RLA	RUNNING LOAD AMPS
RS	REFRIGERANT SUCTION
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SCFM	STANDARD CUBIC FEET PER MINUTE
SD	SUPPLY DIFFUSER
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SP	STATIC PRESSURE
SS	STAINLESS STEEL
STL	STEEL
TEMP	TEMPERATURE
TDH	TOTAL DYNAMIC HEAD
TP	TOTAL PRESSURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
V	VOLT
VFD	VARIABLE FREQUENCY DRIVE
VP	VELOCITY PRESSURE
VSD	VARIABLE SPEED DRIVE
W	WATTS
WB	WET BULB
WPD	WATER PRESSURE DROP
WC	WATER COLUMN
WG	WATER GAUGE
HC	HOT WATER COIL
HP	HEAT PUMP
HR	HEAT RECOVERY EXCHANGER
HRC	HEAT RECOVERY COIL
HRU	HEAT RECOVERY UNIT
HRV	HEAT RECOVERY VENTILATOR
HUM	HUMIDIFER
HWP	HEATING WATER PUMP
HX	HEAT EXCHANGER
L	LOUVER
LEF	LABORATORY EXHAUST FAN
MUA	MAKE UP AIR UNIT
MZ	MULTI-ZONE
OAH	OUTSIDE AIR HOOD
OBD	OPPOSED BLADE DAMPER
OSAL	OUTSIDE AIR LOUVER
P	PUMP
PF	PREFILTER
PHX	POOL HEAT EXCHANGER
PTAC	PACKAGED TERMINAL AIR CONDITIONER
RF	RETURN FAN
RH	RELIEF HOOD
RTU	ROOF TOP UNIT
SA	SOUND ATTENUATOR
SF	SUPPLY FAN
SG	SUPPLY GRILLE
SHX	STEAM HEAT EXCHANGER
ST	STORAGE TANK
TP	TOWER PUMP
TU	TERMINAL UNIT
UH	UNIT HEATER
VD	VOLUME DAMPER
VP	VACUUM PUMP

GENERAL NOTES

1. THE FACILITY WILL REMAIN IN OPERATION DURING CONSTRUCTION. COORDINATE ALL SHUTDOWNS AND CONSTRUCTION ACTIVITY WITH FACILITIES STAFF.
2. SIZE AND LOCATION OF ALL PIPING AND OTHER MECHANICAL EQUIPMENT IS APPROXIMATE. CONTRACTOR SHALL SITE VERIFY THE LOCATION OF EXISTING PIPING AND EQUIPMENT AND CONSTRUCT WORK FROM FIELD DIMENSIONS. CONTRACTOR SHALL MAKE ADJUSTMENTS NECESSARY TO ACCOMMODATE MINOR DEVIATIONS AT NO COST TO OWNER.
3. FINE (LIGHT) LINE WORK INDICATES EXISTING PIPING AND OTHER MECHANICAL EQUIPMENT. BOLD (HEAVY) LINE WORK INDICATES NEW PIPING AND OTHER MECHANICAL EQUIPMENT.
4. IT IS RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE CUTTING AND PATCHING TO ALLOW THE INSTALLATION OF MATERIALS AND EQUIPMENT AS SPECIFIED AND SHOWN ON DRAWINGS.
5. DOCUMENTS HAVE BEEN PREPARED USING A 3-DIMENSIONAL COMPUTERIZED MODELING PROGRAM TO ESTABLISH EQUIPMENT AND UTILITY ARRANGEMENT, AND TO VERIFY THAT SPACE FOR EQUIPMENT IS ADEQUATE. HOWEVER, CLEARANCE IS LIMITED SOME AREAS, AND CAREFUL COORDINATION BETWEEN TRADES IS REQUIRED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FULLY COORDINATE THE WORK OF EACH TRADE, AND TO VERIFY AND ROUTING PRIOR TO THE START OF WORK WHERE WORK IS NOT PROPERLY COORDINATED. ANY INSTALLED WORK THAT MUST BE MODIFIED TO ALLOW WORK OF OTHER TRADES OR TO PROVIDE RECOMMENDED MAINTENANCE ACCESS SHALL BE PERFORMED AT NO EXPENSE TO THE OWNER.

DEMOLITION NOTES

1. REVIEW DEMOLITION DRAWINGS FOR ITEMS TO REMAIN, TO BE RETAINED FOR RELOCATION, OR TO BE SALVAGED TO THE OWNER. REFER TO ARCHITECTURAL DOCUMENTS FOR ADDITIONAL REQUIREMENTS.
2. DEMOLISH EQUIPMENT, FIXTURES, DEVICES, PIPING, CONDUIT, FITTINGS, AND APPURTENANCES INTERIOR TO THE BUILDING THAT ARE MADE OBSOLETE BY THE NEW WORK AND/OR ARE ABANDONED AND NO LONGER IN USE.
3. PROTECT AND MAINTAIN OPERABLE EXISTING EQUIPMENT, FIXTURES, OR SYSTEMS THAT ARE INDICATED TO REMAIN, INCLUDING ELECTRICAL POWER, CONTROLS, AND RELATED SYSTEMS REQUIRED TO MAINTAIN OPERABILITY.
4. EXISTING CONDITIONS SHOWN ARE BASED ON RECORD DOCUMENTS AND LIMITED FIELD OBSERVATIONS OF ACCESSIBLE AREAS AND MAY NOT SHOW THE ENTIRE SCOPE OF DEMOLITION WORK. OMISSION OF EXISTING EQUIPMENT, FIXTURES, DEVICES, PIPING, CONDUIT, FITTINGS, AND APPURTENANCES FROM THE DEMOLITION DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO PROVIDE DEMOLITION OF SYSTEMS THAT ARE MADE OBSOLETE BY THE NEW WORK, ARE ABANDONED, OR AS OTHERWISE REQUIRED TO PERFORM THE WORK DESCRIBED HEREIN.
5. PROTECT AND MAINTAIN SERVICES TO REMAIN OPERATIONAL THAT PASS THROUGH THE AREA OF CONSTRUCTION. WHERE IT IS NOT POSSIBLE TO MAINTAIN THESE SERVICES INTACT, REPLACE, REROUTE, MODIFY, OR PROVIDE NEW AS REQUIRED TO MAINTAIN SERVICES.

EQUIPMENT ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
AC	AIR CONDITIONER
ACB	ACTIVE CHILLED BEAM
AD	AUTOMATIC DAMPER
AF	AIR CURTAIN
AHU	AIR HANDLING UNIT
AS	AIR SEPARATOR
B	BOILER
BD	BALANCING DAMPER
BDD	BACK DRAFT DAMPER
BF	BOILER FEED
BF	BOOSTER FAN
CB	CHILLED BEAM
CC	CHILLED WATER COIL
CFP	CHEMICAL FEED PUMP
CFT	CHEMICAL FEED TANK
CH	CHILLER
CP	CIRCULATING PUMP
CT	COOLING TOWER
CU	CONDENSING UNIT
CRU	CONDENSATE RETURN UNIT
CV	CONTROL VALVE
CWP	CHILLED WATER PUMP
EAL	EXHAUST AIR LOUVER
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
EH	EXHAUST HOOD
ET	EXPANSION TANK
FC	FAN COIL UNIT
FCD	FLOW CONTROL DEVICE
FD	FIRE DAMPER
FF	FINAL FILTER
FSD	FIRE SMOKE DAMPER
GF	GLYCOL FEEDER

SHEET LIST - MECHANICAL

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

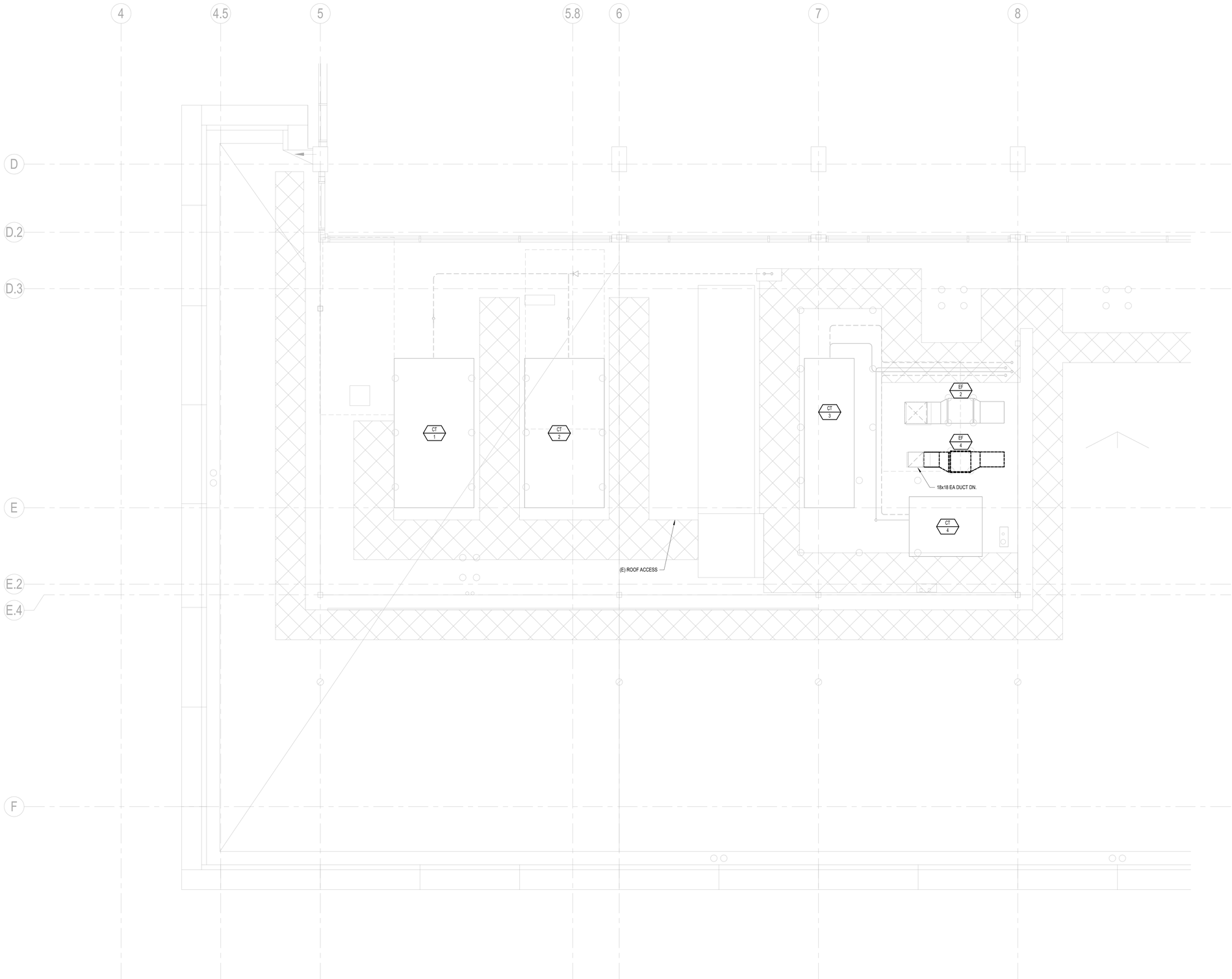
LEGEND, GENERAL NOTES, & SHEET INDEX

MARK	DATE	DESCRIPTION

DESIGNED:	SGS
DRAWN:	PZL
CHECKED:	TKO
DATE:	10.14.2022
PROJECT:	V015.23

M001

PLOTTED BY: JSH ON: 10/14/2022 12:48:20 PM



NORTH

1 **DEMOLITION PLAN - ROOF**
1/4" = 1'-0"

PLOTTED BY: PZL ON: 10/14/2022 12:49:22 PM

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

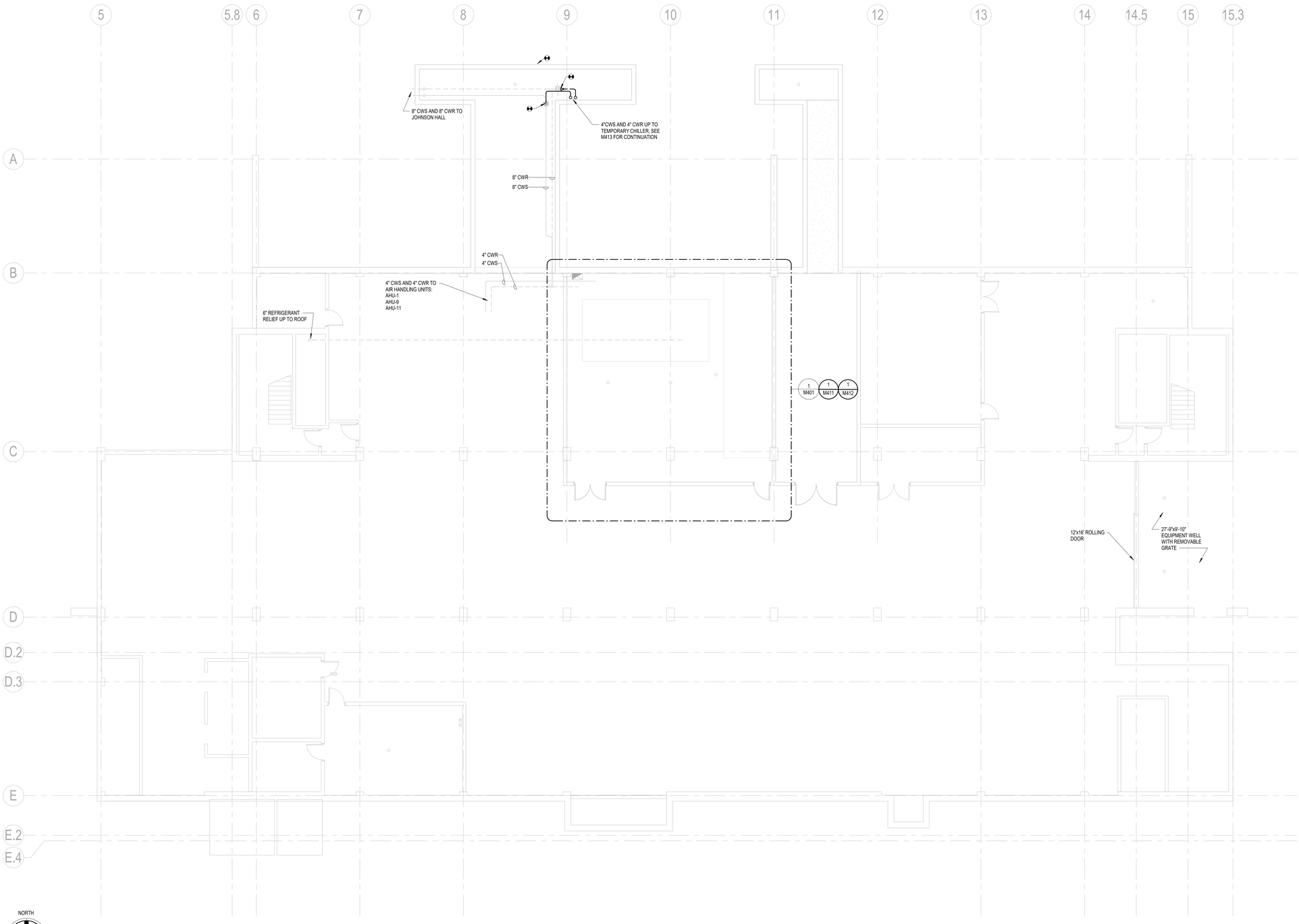
OWNER:
OREGON STATE UNIVERSITY

DEMOLITION PLAN - ROOF

MARK	DATE	DESCRIPTION

DESIGNED:	SGS
DRAWN:	PZL
CHECKED:	TKO
DATE:	10.14.2022
PROJECT:	V015.23

M103



NORTH

1 **FLOOR PLAN - BASEMENT**
1/8" = 1'-0"

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

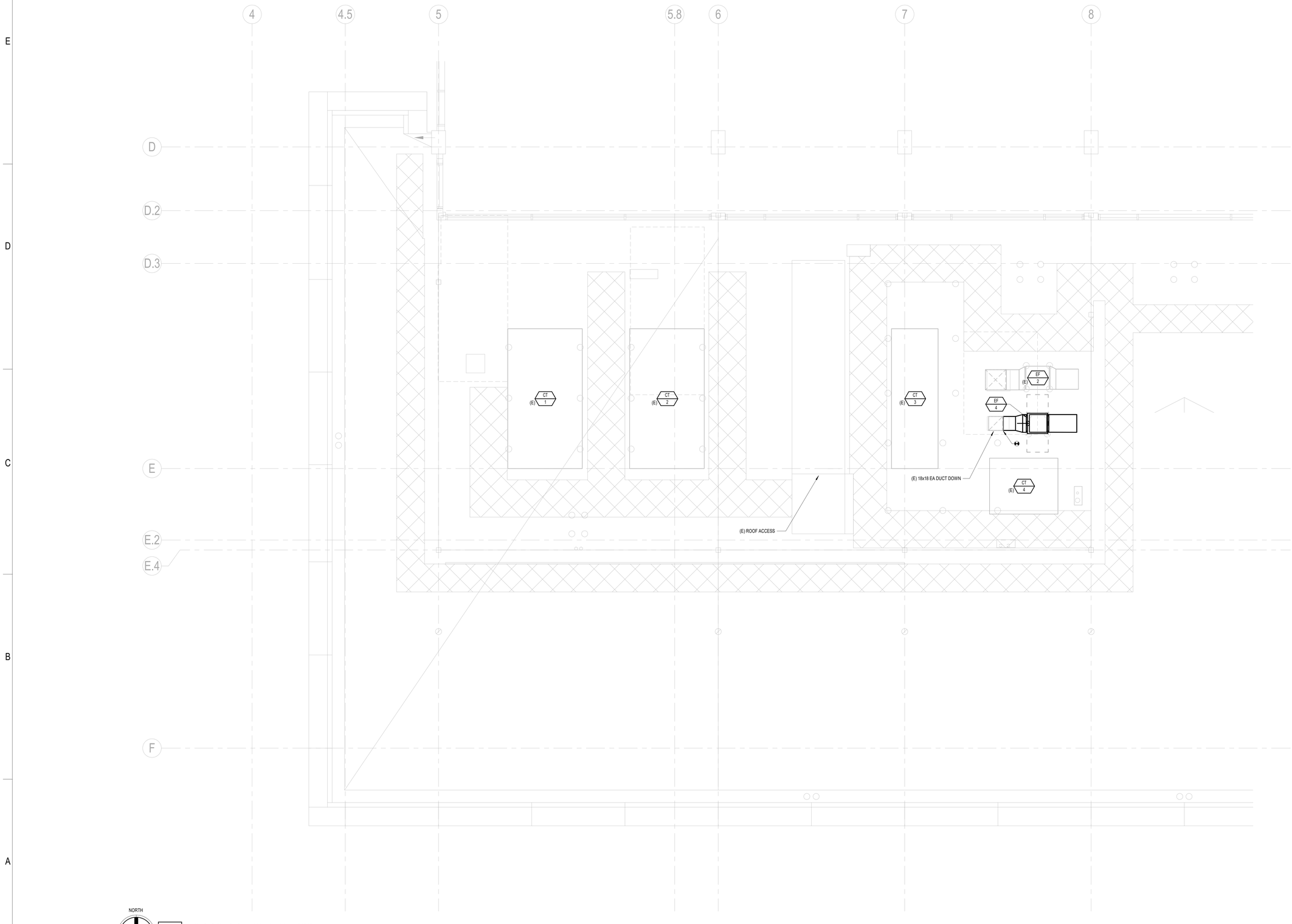
FLOOR PLAN - BASEMENT

MARK	DATE	DESCRIPTION

DESIGNED:	SGS
DRAWN:	PZL
CHECKED:	TKO
DATE:	10.14.2022
PROJECT:	V015.23

M121

PLOTTED BY: PZL ON: 10/14/2022 12:49:23 PM



NORTH

1 AIR DISTRIBUTION PLAN - ROOF
1/4" = 1'-0"

PLOTTED BY: MVA ON: 10/14/2022 12:49:23 PM

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

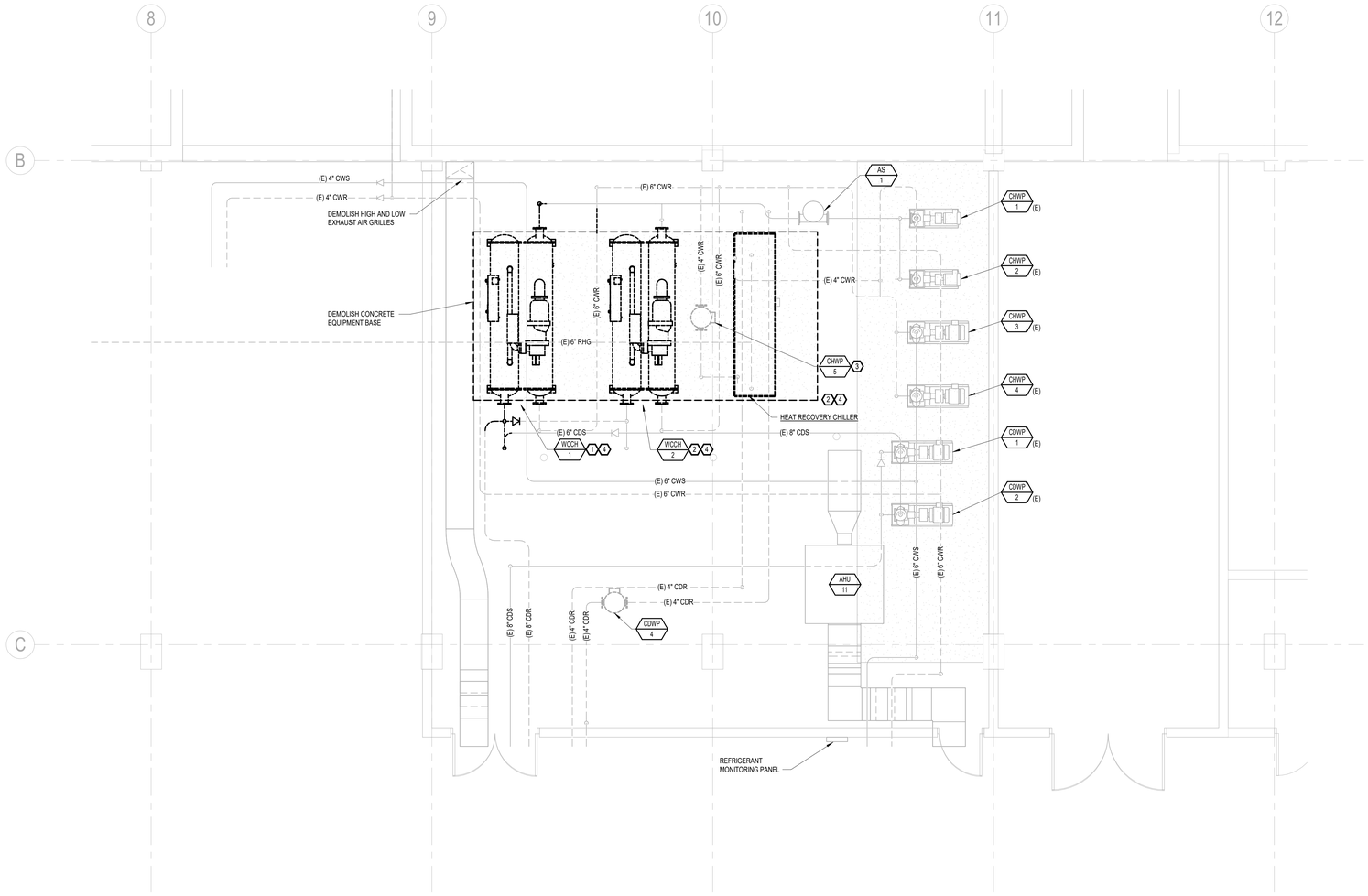
OWNER:
OREGON STATE UNIVERSITY

FLOOR PLAN - ROOF

MARK	DATE	DESCRIPTION

DESIGNED:	SGS
DRAWN:	MVA
CHECKED:	TKO
DATE:	10.14.2022
PROJECT:	V015.23

M122



NORTH

1 DEMOLITION ENLARGED PLAN - CHILLER ROOM
1/4" = 1'-0"

SHEET NOTES:

1. SEE M611 FOR EXISTING CHILLED WATER DEMOLITION DIAGRAM.

REFERENCE NOTES:

1. REMOVE EXISTING CHILLER IN ITS ENTIRETY. REMOVE CHILLED WATER AND CONDENSER WATER PIPING BACK TO NEAREST 6" PIPE AND TEMPORARILY CAP. EXISTING PIPING TO REMAIN WILL BE RECONNECTED TO NEW CHILLER.
2. REMOVE EXISTING CHILLER IN ITS ENTIRETY. REMOVE CHILLED WATER AND CONDENSER WATER PIPING BACK TO NEAREST OVERHEAD ISOLATION VALVE AND CAP.
3. CONTRACTOR OPTION. REMOVE EXISTING PUMP AS PART OF PHASE 1 WORK OR ABANDOND IN PLACE AND REMOVE LATER IN PHASE 2 WORK.
4. REMOVE REFRIGERANT RELIEF PIPING FROM CHILLERS TO OVERHEAD MAIN AND CAP. EXISTING MAIN TO REMAIN FOR RECONNECTION TO NEW CHILLER REGRIGERANT RELIEF PIPING.

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

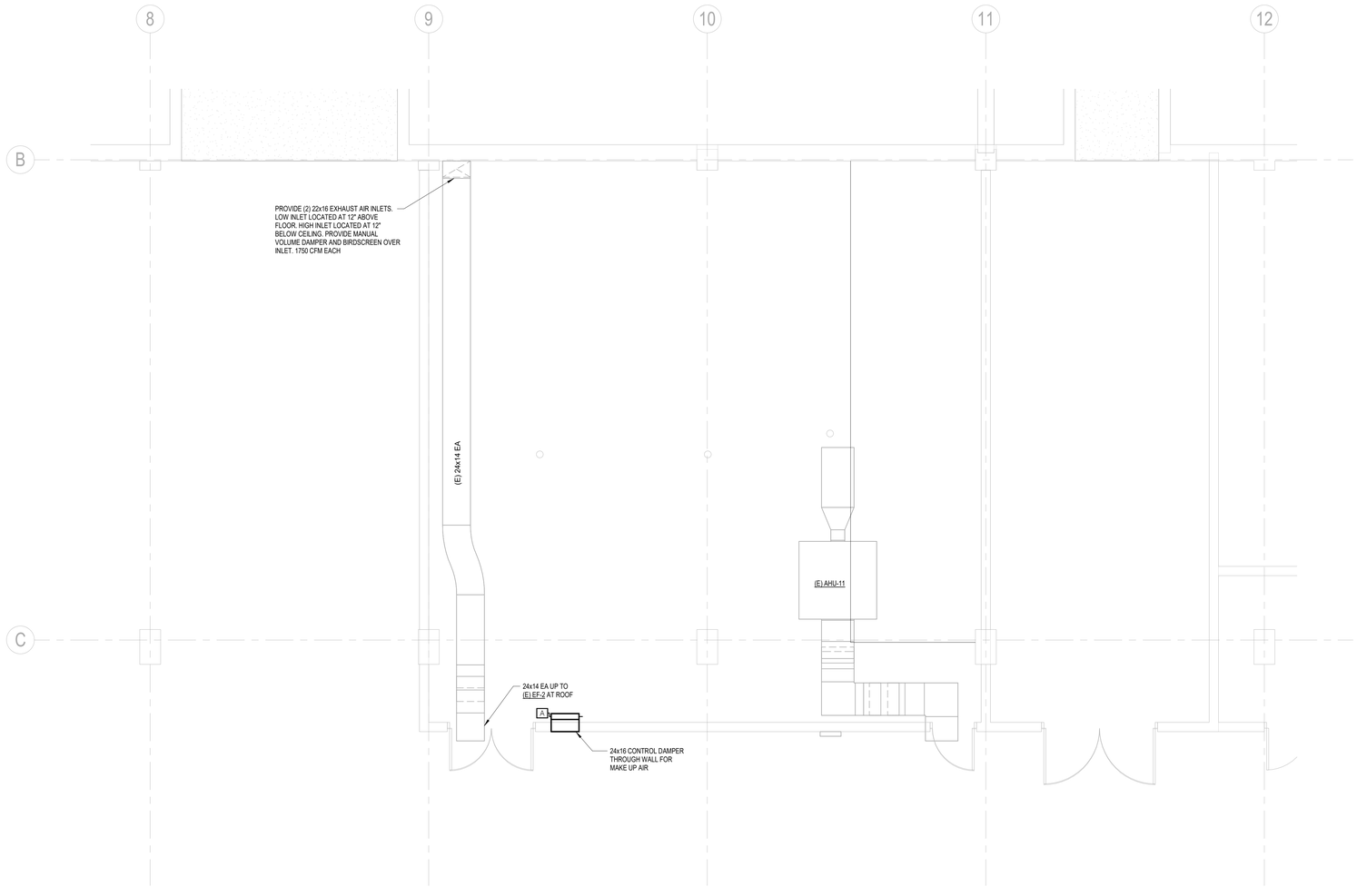
DEMOLITION ENLARGED PLAN - CHILLER ROOM

MARK	DATE	DESCRIPTION

DESIGNED:	SGS
DRAWN:	PZL
CHECKED:	TKO
DATE:	10.14.2022
PROJECT:	V015.23

M

PLOTTED BY: JSH ON: 10/14/2022 12:49:24 PM



NORTH

1 AIR DISTRIBUTION ENLARGED PLANS - CHILER ROOM
1/4" = 1'-0"

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

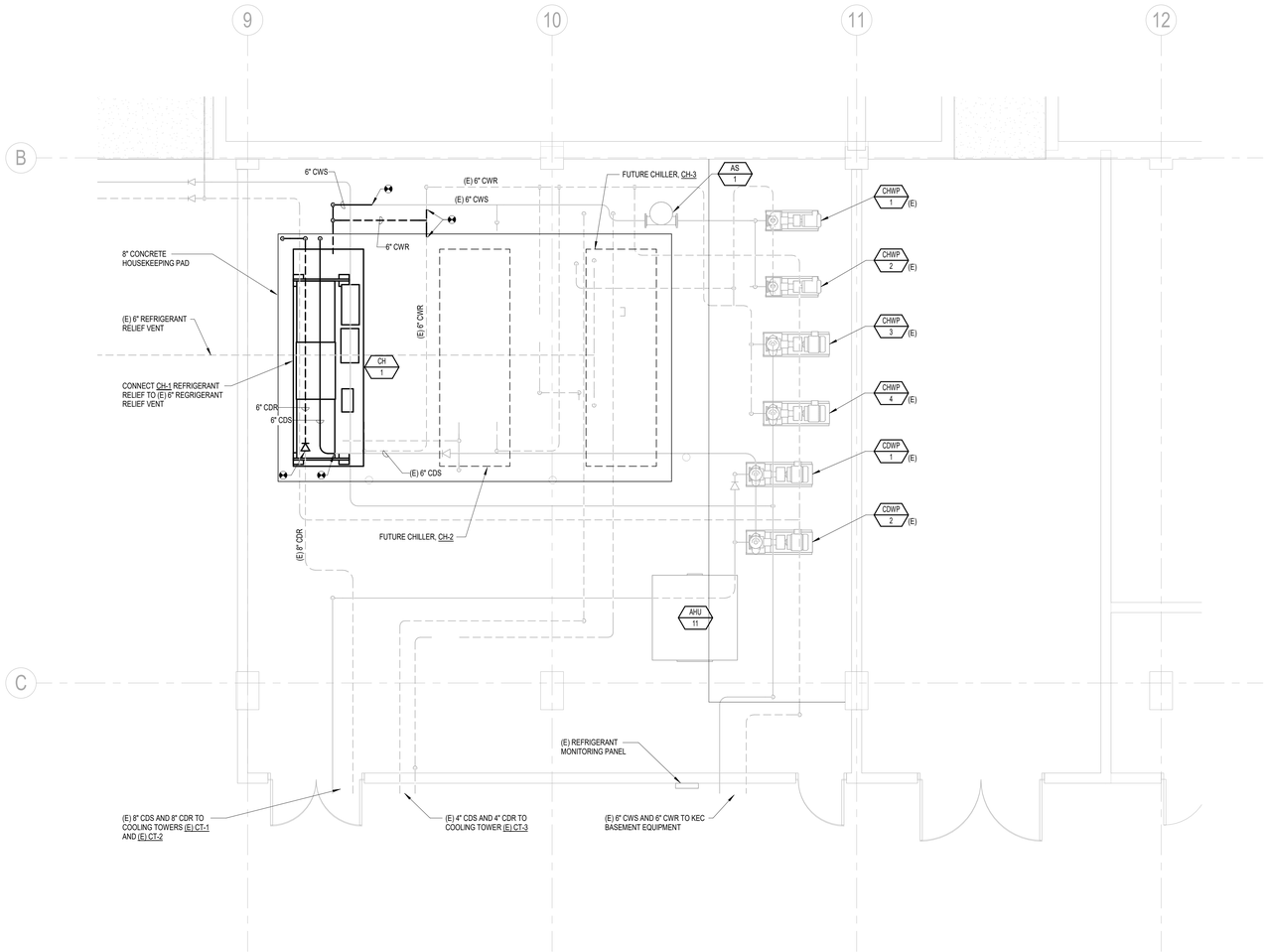
AIR DISTRIBUTION ENLARGED PLANS - CHILER ROOM

MARK	DATE	DESCRIPTION

DESIGNED:	SGS
DRAWN:	MVA
CHECKED:	TKO
DATE:	10.14.2022
PROJECT:	V015.23

M411

PLOTTED BY: MVA ON: 10/14/2022 12:49:25 PM



NORTH

1 **MECHANICAL PIPING ENLARGED PLANS - CHILER ROOM**
1/4" = 1'-0"

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

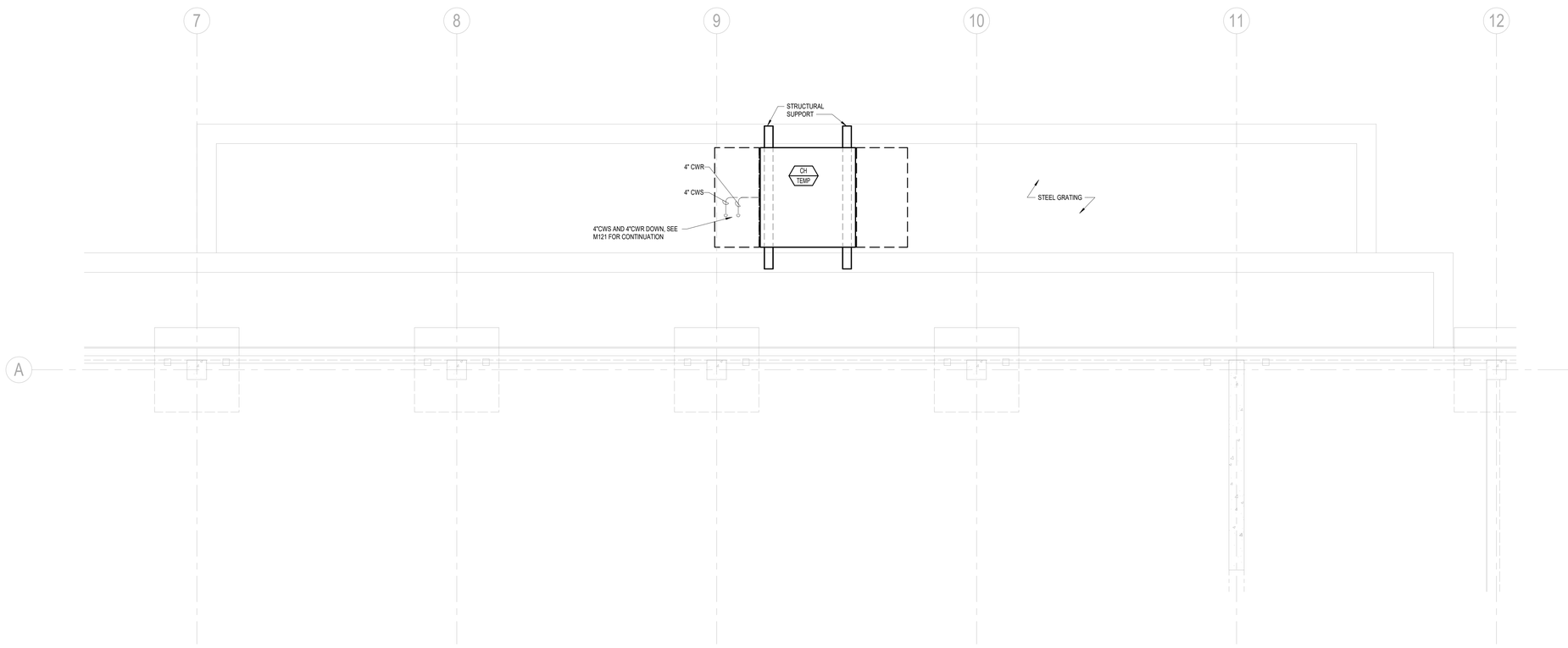
MECHANICAL PIPING ENLARGED PLANS - CHILLER ROOM

MARK	DATE	DESCRIPTION

DESIGNED:	SGS
DRAWN:	MVA
CHECKED:	TKO
DATE:	10.14.2022
PROJECT:	V015.23

M412

PLOTTED BY: MVA ON: 10/14/2022 12:49:26 PM



NORTH

1 **FIRST FLOOR MECHANICAL ENLARGED PLAN**
1/4" = 1'-0"

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

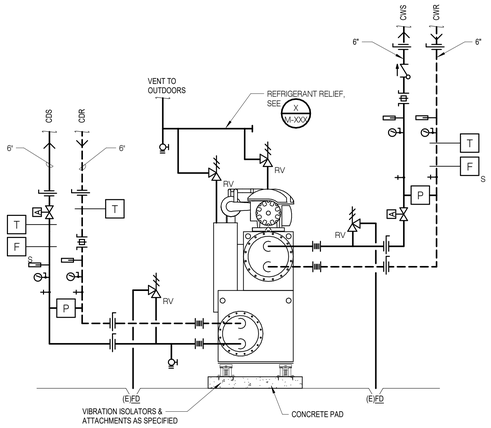
MECHANICAL PIPING ENLARGED PLANS - FIRST LEVEL

MARK	DATE	DESCRIPTION

DESIGNED:	SGS
DRAWN:	MVA
CHECKED:	TKO
DATE:	10.14.2022
PROJECT:	V015.23

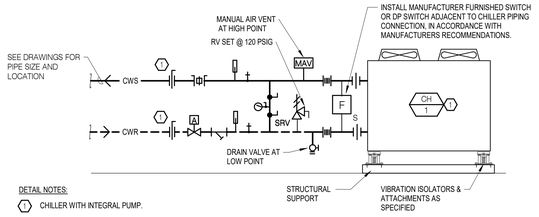
M413

PLOTTED BY: MVA ON: 10/14/2022 12:49:26 PM



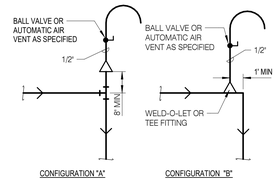
1 WATER - COOLED CHILLER

NOT TO SCALE



2 AIR - COOLED CHILLER

NOT TO SCALE



4 MANUAL AIR VENT

NOT TO SCALE

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

MECHANICAL DETAILS

MARK	DATE	DESCRIPTION

DESIGNED:	SGS
DRAWN:	MVA
CHECKED:	TKO
DATE:	10.14.2022
PROJECT:	V015.23

M501

PLOTTED BY MVA ON: 10/14/2022 12:49:27 PM

WATER COOLED CHILLER

(1)MAXIMUM CIRCUIT AMPACITY
(2)MAXIMUM OVERCURRENT PROTECTION

TAG	MANUFACTURER	MODEL	NOMINAL CAPACITY (TONS)	COMPRESSOR		EVAPORATOR						CONDENSER					PERFORMANCE		OPERATING WEIGHT (LBS)	ELECTRICAL				REMARKS
				QTY	TYPE	MAX FLOW (GPM)	DESIGN FLOW (GPM)	MIN FLOW (GPM)	EWT (°F)	LWT (°F)	MAX PD (FT) (4)	MAX FLOW (GPM)	MIN FLOW (GPM)	EWT (°F)	LWT (°F)	MAX PD (FT)	NPLV	KW/TON		VOLTS	PHASE	MCA (1)	MOP (2)	
CH-1	DAIKIN	WME092CSCSNA	600	0		0	0	0	0.0	0.0	0.0	0	0	0.0	0.0	0.0			15,300	460	3	587	1,000	

AIR COOLED CHILLER

(1) IPLV PERFORMANCE BASED ON AHRI 550/590
(2) ENERGY EFFICIENCY RATIO AT DESIGN CONDITIONS
(3) MINIMUM CIRCUIT AMPERAGE
(4) MAXIMUM OVERCURRENT PROTECTION

TAG	MANUFACTURER	MODEL	OUTDOOR AMBIENT (°F)	NOMINAL CAPACITY (TONS)	COMPRESSOR		EVAPORATOR		DESIGN FLOW (GPM)	EVAPORATOR		PERFORMANCE		OPERATING WEIGHT (LBS)	AMBIENT SOUND (dbA)	ELECTRICAL					REMARKS
					QTY	TYPE	EWT (°F)	LWT (°F)		MIN FLOW (GPM)	MAX PD (FT)	IPLV (1)	EER (2)			VOLTS	PHASE	FLA	MCA (3)	MOP (4)	
CH - TEMP	CARRIER	30RAP060	95	60	1	SCROLL	56	44	0	68	5	0	10.3	2595	0	460	3	0	138	150	

EXHAUST FAN

(1)MOTOR STARTER & VFDS FURNISHED BY DIV. 23, INSTALLED BY DIV 26. ECM MOTORS FURNISHED & INSTALLED BY 23.
(2)MS - MOTOR STARTER, VFD - VARIABLE FREQUENCY DRIVE, ECM MOTOR CONTROLLER, CR - CONTROL RELAY

TAG	MANUFACTURER	MODEL	TYPE	PERFORMANCE				WHEEL			SOUND LEVEL (SONES)	MOTOR			(1) (2) MOTOR CONTROL	REMARKS
				AIRFLOW (CFM)	TSP (IN)	SPEED (RPM)	POWER (BHP)	TYPE	BLADE	DIAMETER (IN)		VOLTS	PHASE	HP		
EF-4	GREENHECK	BSQ-160HP	INLINE	3500	2	0	0				0	460	3	3	VFD	

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

SCHEDULES

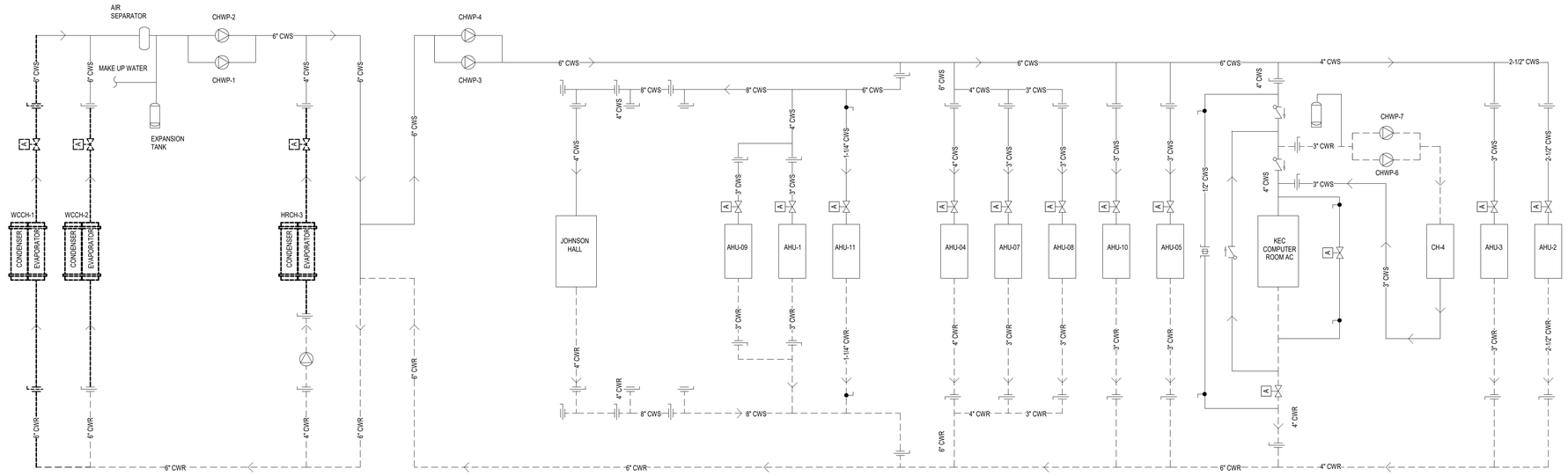
MARK	DATE	DESCRIPTION

DESIGNED: SGS
DRAWN: MVA
CHECKED: TKO

DATE: 10.14.2022
PROJECT: V015.23

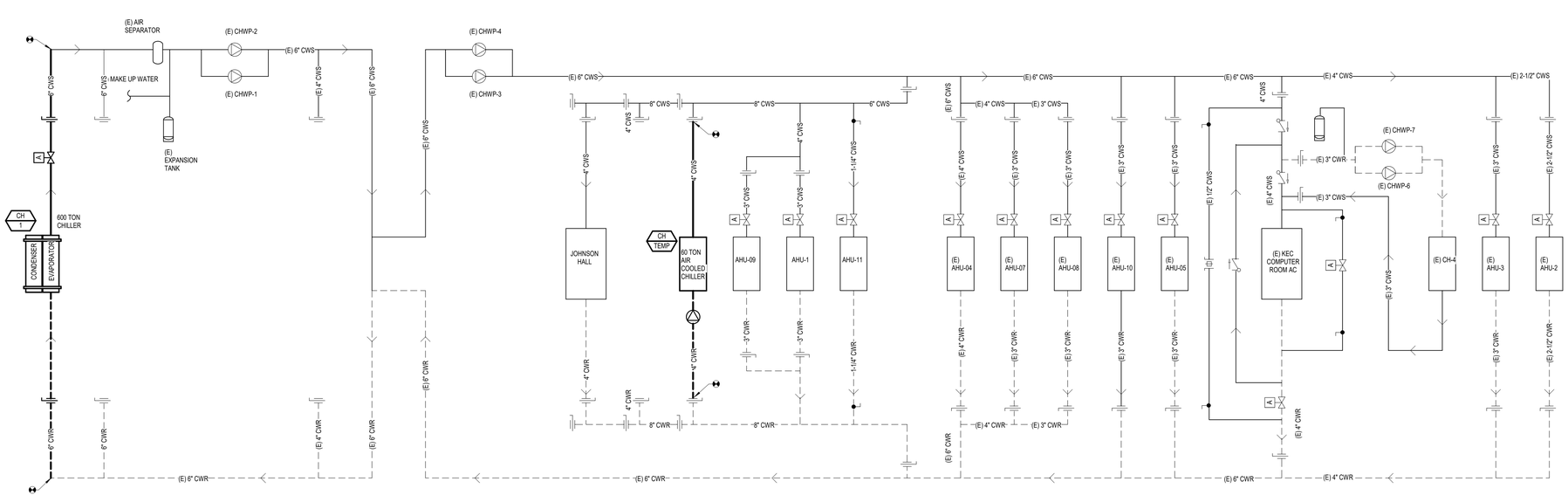
M601

PLOTTED BY: MVA ON: 10/14/2022 12:49:28 PM



1 PHASE 1 - CHILLED WATER DEMOLITION

NOT TO SCALE



2 PHASE 1 CHILLED WATER

NOT TO SCALE

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

MECHANICAL DIAGRAMS

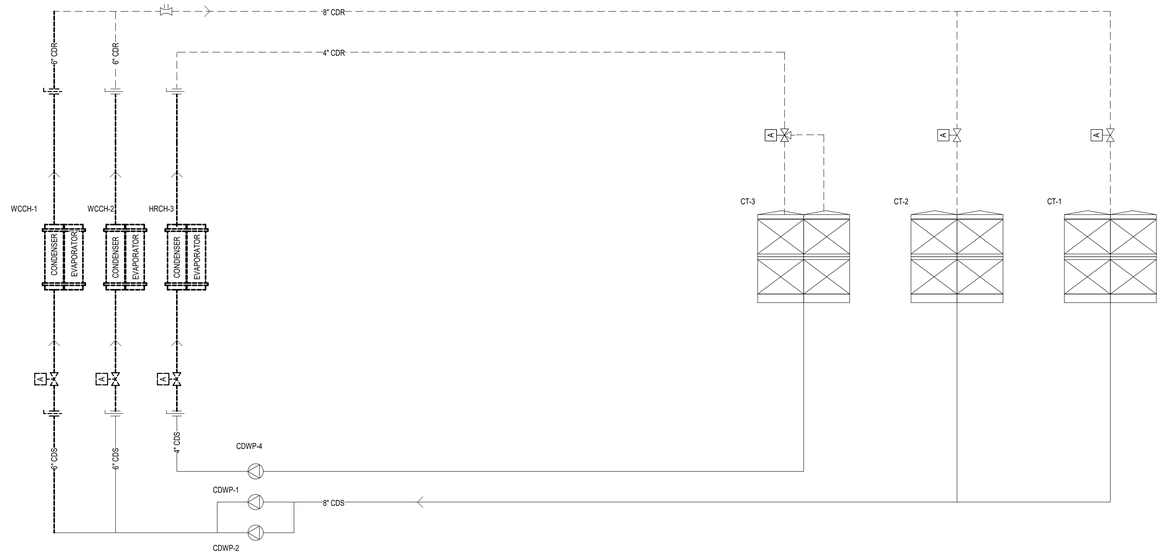
MARK	DATE	DESCRIPTION

DESIGNED: SGS
DRAWN: MVA
CHECKED: TKO

DATE: 10.14.2022
PROJECT: V015.23

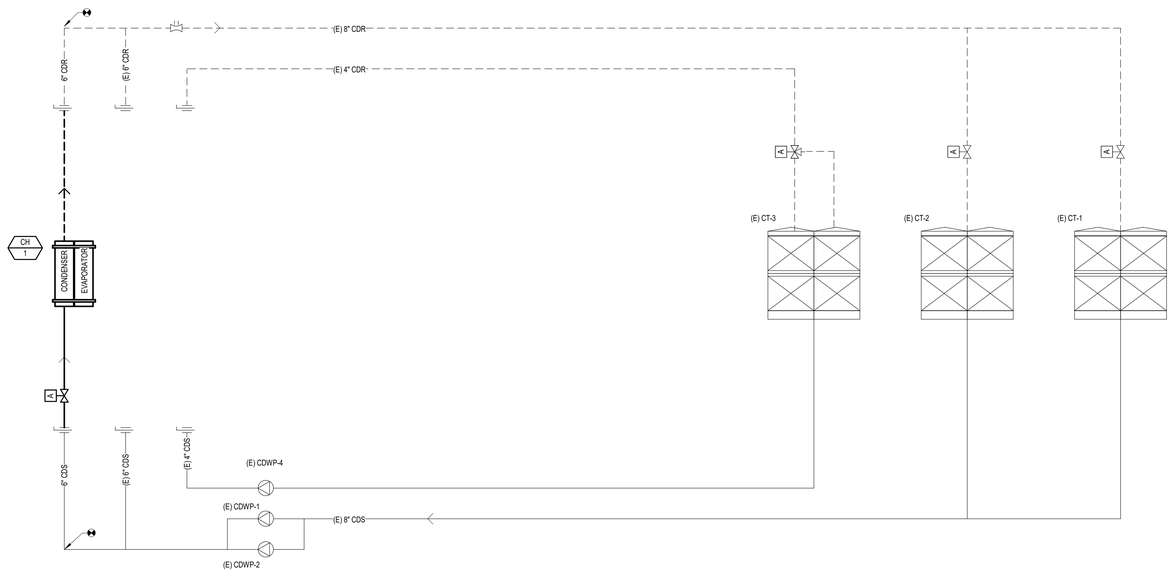
M611

PLOTTED BY: MVA ON: 10/14/2022 12:49:28 PM



1 **PHASE 1 - CONDENSER WATER DEMOLOITION**

NOT TO SCALE



2 **PHASE 1 CONDENSER WATER**

NOT TO SCALE

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

MECHANICAL DIAGRAMS

MARK	DATE	DESCRIPTION

DESIGNED:	SGS
DRAWN:	MVA
CHECKED:	TKO
DATE:	10.14.2022
PROJECT:	V015.23

M612

PLOTTED BY MVA ON: 10/14/2022 12:49:29 PM

ELECTRICAL LEGEND

RACEWAYS, BOXES, AND CONDUCTORS

- CONCEALED RACEWAY AND CONDUCTORS. NUMBER OF SLASHES INDICATES NUMBER OF CONDUCTORS IF MORE THAN TWO. SIZE OTHER THAN 12 AWG AS NOTED. (APPLIES TO ALL WIRING SYMBOLS)
- UNDERGROUND OR UNDERFLOOR RACEWAY
- HOMERUN
- OHD — OVERHEAD POWER LINE
- SPLICE
- GROUND CONNECTION
- CONDUIT UP
- CONDUIT DOWN
- JUNCTION BOX
- JUNCTION BOX FLUSH WITH FLOOR OR AT GRADE
- CONDUIT STUB
- CT — CABLE TRAY

ELECTRICAL EQUIPMENT - PLANS

- T — DISTRIBUTION TRANSFORMER
- ELECTRICAL EQUIPMENT AS NOTED ON DRAWINGS
- SURFACE-MOUNTED PANELBOARD (120/208V)
- SURFACE-MOUNTED PANELBOARD (277/480V)
- RECESSED PANELBOARD (120/208V)
- RECESSED PANELBOARD (277/480V)
- SURFACE-MOUNTED CABINET, TYPE AS NOTED
- PB — PULL BOX, SIZE AS NOTED OR AS REQUIRED
- GROUNDING BUSBAR

ONE-LINE DIAGRAM

- T — SERVICE TRANSFORMER, PAD-MOUNTED
- T — SERVICE TRANSFORMER, WITH VAULT
- T — DISTRIBUTION TRANSFORMER
- ELECTRICAL EQUIPMENT AS NOTED
- LV -1 / 208V / 225A / 3PH 4W — PANELBOARD WITH CHARACTERISTICS AS NOTED. WHERE NO CHARACTERISTICS NOTED, SEE PANEL SCHEDULES.
- PB — PULL BOX, DIMENSIONS AS NOTED OR AS REQUIRED
- G — GENERATOR
- AUTOMATIC TRANSFER SWITCH
- PHOTOVOLTAIC INVERTER
- 200A / 3P — CIRCUIT BREAKER WITH CHARACTERISTICS AS NOTED
- G 200A / 3P — CIRCUIT BREAKER WITH INTEGRAL GROUND FAULT PROTECTION
- 200A / 3P — SWITCH WITH CHARACTERISTICS AS NOTED
- 200AS / 200AF / 3P — FUSED SWITCH WITH CHARACTERISTICS AS NOTED. AS = SWITCH RATING, AF = FUSE RATING.
- 200A — NON-FUSED DISCONNECT WITH CHARACTERISTICS AS NOTED.
- 200AS / 200AF — FUSED DISCONNECT WITH CHARACTERISTICS AS NOTED. AS = SWITCH RATING, AF = FUSE RATING.
- MAGNETIC STARTER
- COMBINATION DISCONNECT AND MAGNETIC STARTER
- SPD — SURGE PROTECTIVE DEVICE
- M — MOTOR CONNECTION
- EQUIPMENT CONNECTION
- M — ELECTRIC METER, TYPE AS NOTED
- CURRENT TRANSFORMER
- 3000B — FEEDER TAG. SEE FEEDER SCHEDULE.
- E / 121 — FEEDER CONTINUATION CALLOUT. SEE CALLOUT ON DRAWING IDENTIFIED WITH THE SAME LETTER TAG.

WIRING DEVICES

- PUSH BUTTON STATION
- L6-30R — SPECIAL PURPOSE RECEPTACLE WITH NEMA CONFIGURATION AS NOTED.
- SIMPLEX RECEPTACLE
- DUPLEX RECEPTACLE
- QUADPLEX RECEPTACLE
- FB1 — FLUSH FLOOR BOX. REFER TO SPECIFICATIONS AND SCHEDULES FOR DEVICE QUANTITIES AND TYPES.
- PT1 — FLUSH POKE-THROUGH FLOOR BOX. REFER TO SPECIFICATIONS AND SCHEDULES FOR DEVICE QUANTITIES AND TYPES.
- SPLIT-WIRED RECEPTACLE WITH HALF SWITCHED CONTROL VIA MANUAL CONTROL, OCCUPANCY SENSING CONTROL, OR TIME BASED CONTROL. REFER TO SPECIFICATIONS AND DRAWINGS.
- RECEPTACLE WITH FULL SWITCHED CONTROL VIA MANUAL CONTROL, OCCUPANCY SENSING CONTROL, OR TIME BASED CONTROL. REFER TO SPECIFICATIONS AND DRAWINGS.
- FB1 — FLUSH FLOOR BOX WITH SWITCHED CONTROL VIA MANUAL CONTROL, OCCUPANCY SENSING CONTROL, OR TIME BASED CONTROL. REFER TO SPECIFICATIONS AND DRAWINGS.
- PT1 — FLUSH POKE-THROUGH FLOOR BOX WITH SWITCHED CONTROL VIA MANUAL CONTROL, OCCUPANCY SENSING CONTROL, OR TIME BASED CONTROL. REFER TO SPECIFICATIONS AND DRAWINGS.
- SURFACE MOUNTED RACEWAY WITH DUPLEX RECEPTACLES
- A — LETTER DESIGNATOR(S) INDICATE ADDITIONAL RECEPTACLE CHARACTERISTICS (APPLIES TO ALL RECEPTACLE AND FLOOR BOX TYPES):
  - A = INTEGRAL AFCI
  - B = INTEGRAL WITH USB OUTLET(S)
  - C = SUPPLIED POWER VIA CRITICAL BRANCH (NEC 517)
  - E = SUPPLIED POWER VIA LIFE SAFETY BRANCH (NEC 517)
  - G = INTEGRAL GFCI
  - IG = SUPPLIED POWER VIA AN ISOLATED GRD SYSTEM
  - P = INTEGRAL SURGE PROTECTIVE DEVICE
  - S = SUPPLIED POWER VIA OPTIONAL STANDBY BRANCH (NEC 702)
  - U = SUPPLIED POWER VIA A UPS
  - WP = WEATHERPROOF AND INTEGRAL GFCI
- +48" — INDICATES RECEPTACLE ROUGH-IN HEIGHT FROM AFF TO CL OF RECEPTACLE WHEN NOT AT STANDARD MOUNTING HEIGHT.
- 2P1:12 — INDICATES PANELBOARD AND BRANCH CIRCUIT NUMBER SERVING RECEPTACLE.
- 12 — INDICATES BRANCH CIRCUIT NUMBER SERVING RECEPTACLE. REFER TO SHEET NOTES AND REFERENCE NOTES FOR SOURCE.

LIGHTING

- $ a / 3 — WALL SWITCH WITH CHARACTERISTICS AS NOTED. a = ZONE CONTROLLED, K = KEYED SWITCH, P = WITH INTEGRAL PILOT LIGHT, 3 = THREE-WAY, 4 = FOUR-WAY, OS = COMBINATION OCCUPANCY SENSOR AND WALL SWITCH, D = MANUAL DIMMER, T = DIGITAL TIMER SWITCH.
- WSa — DIGITAL WALL SWITCH. SEE WALL SWITCH SCHEDULE. a = ZONE(S) CONTROLLED.
- PP E,a — DIGITAL POWER PACK CONCEALED IN CEILING WITH CHARACTERISTICS AS NOTED. E = EMERGENCY, D = DIMMING (0-10VDC), a = ZONE CONTROLLED.
- OSA — CEILING-MOUNTED OCCUPANCY SENSOR. A = SPECIAL TYPE (SEE OCCUPANCY SENSOR SCHEDULE).
- WSA — WALL-MOUNTED OCCUPANCY SENSOR. A = SPECIAL TYPE (SEE OCCUPANCY SENSOR SCHEDULE).
- PEA — CEILING-MOUNTED PHOTOELECTRIC CELL LIGHT LEVEL SENSOR. A = SPECIAL TYPE (SEE OCCUPANCY SENSOR SCHEDULE).
- WPA — WALL-MOUNTED PHOTOELECTRIC CELL LIGHT LEVEL SENSOR. A = SPECIAL TYPE (SEE OCCUPANCY SENSOR SCHEDULE).
- R — RELAY
- CEILING SURFACE-MOUNTED LUMINAIRE
- RECESSED LUMINAIRE
- LINEAR CEILING SURFACE-MOUNTED LUMINAIRE
- LINEAR SUSPENDED LUMINAIRE
- LINEAR WALL-MOUNTED LUMINAIRE
- LINEAR UNDER CABINET-MOUNTED LUMINAIRE
- SURFACE WALL-MOUNTED LUMINAIRE
- RECESSED WALL-MOUNTED LUMINAIRE
- ROUND SUSPENDED LUMINAIRE
- CEILING SURFACE-MOUNTED LUMINAIRE
- CEILING SURFACE-MOUNTED ASYMMETRIC LUMINAIRE
- CEILING RECESSED LUMINAIRE
- RECESSED ASYMMETRIC DOWNLIGHT
- POLE-MOUNTED LUMINAIRE
- POST TOP LUMINAIRE
- ILLUMINATED BOLLARD
- TRACK LIGHTING, NUMBER AND TYPE OF HEADS AS SHOWN
- WALL MOUNTED EXIT SIGN, SHADING INDICATES FACES
- CEILING MOUNTED EXIT SIGN, SHADING INDICATES FACES
- CEILING MOUNTED EXIT SIGN WITH INTEGRAL EMERGENCY LIGHTS AND BATTERY PACK
- SURFACE-MOUNTED EMERGENCY LIGHT WITH INTEGRAL BATTERY PACK
- SHADING INDICATES LUMINAIRE PROVIDES ILLUMINATION FOR EMERGENCY EGRESS. SHADING VARIES WITH EACH LUMINAIRE TYPE.
- A1 / B / 4N-CW1A.7 / 7 — A1: LUMINAIRE TYPE IDENTIFIER. SEE LUMINAIRE SCHEDULE. B: CONTROL ZONE IDENTIFIER. 4N-CW1A.7: INDICATES PANELBOARD AND BRANCH CIRCUIT NUMBER SERVING LUMINAIRE. 7: INDICATES BRANCH CIRCUIT NUMBER SERVING LUMINAIRE. REFER TO SHEET NOTES OR REFERENCE NOTES FOR SOURCE PANELBOARD.

FIRE ALARM

- F — MANUAL PULL STATION
- F — STROBE
- F / FS — HORN, SPEAKER
- F / FS — COMBINATION HORN/STROBE, COMBINATION SPEAKER/STROBE
- SPRINKLER BELL, CHIME
- F / T — FLOW SWITCH, TAMPER SWITCH
- D — PHOTOELECTRIC SMOKE DETECTOR, DUCT DETECTOR
- COMBINATION FIXED TEMPERATURE AND RATE-OF-RISE HEAT DETECTOR
- S — FIRE/SMOKE DAMPER, SMOKE DAMPER
- DH — MAGNETIC DOOR HOLDER AND RELEASING DEVICE
- FACP — FIRE ALARM CONTROL PANEL
- FAAP — FIRE ALARM ANNUNCIATOR PANEL
- NAC — NOTIFICATION APPLIANCE CIRCUIT EXTENDER
- FSCP — FIRE SUPPRESSION CONTROL PANEL

SECURITY AND ACCESS CONTROL

- CEILING-MOUNTED SECURITY CAMERA
- CEILING-MOUNTED 360° VIEW ANGLE SECURITY CAMERA
- WALL-MOUNTED SECURITY CAMERA
- WALL-MOUNTED 360° VIEW ANGLE SECURITY CAMERA
- MULTI-DIRECTIONAL SECURITY CAMERA
- MAGNETIC DOOR POSITION SENSOR
- WP — SECURITY SYSTEM OUTDOOR SIREN WITH TAMPER WIREGUARD
- SECURITY SYSTEM OUTDOOR SIREN
- CORNER SECURITY SYSTEM MOTION SENSOR
- CEILING MOUNTED SECURITY SYSTEM MOTION
- KP — SECURITY SYSTEM KEYPAD
- REX — REQUEST TO EXIT SENSOR
- GB — GLASS BREAKAGE SENSOR
- CR — CARD READER
- EL — ELECTRIC LOCK

TELECOMMUNICATIONS

- TELECOMMUNICATIONS OUTLET, CONDUIT AND BACKBOX ONLY REFER TO SPECIFICATIONS.
- WIRELESS ACCESS POINT, CEILING MOUNTED WIRELESS ACCESS POINT
- FB1 — TELECOMMUNICATIONS OUTLET WITHIN COMBINES SERVICE FLUSH FLOOR BOX. REFER TO SPECIFICATIONS AND SCHEDULES FOR DEVICE QUANTITIES AND TYPES.
- TD — COAXIAL CABLE OUTLET, COMBINATION COAXIAL AND DATA OUTLET

NURSE CALL

- SINGLE BED STATION
- NURSE ASSIST BUTTON
- NURSE CALL STATION. B = BED COMMUNICATION OUTLET, CB = CODE BLUE, D = DUTY STATION, E = EMERGENCY STATION, NA = NURSE ASSIST ANNUNCIATOR, N = NURSE LOCATOR STATION, M = PATIENT MONITORING OUTLET, S = STAFF STATION, U = UTILITY STATION
- DOME LIGHT (CEILING AND WALL MOUNTED)
- ZONE DOME LIGHT (CEILING AND WALL MOUNTED)
- NCM — NURSE CALL MASTER STATION

GENERAL

- AHU / 1 — MECHANICAL EQUIPMENT DESIGNATOR, SEE SCHEDULES.
- E1A-1 — LAB EQUIPMENT DESIGNATOR, SEE SCHEDULES.
- 1 — REFERENCE NOTE MARKER
- 2 / E-121 — 2 / E-601 — PLAN OR DETAIL NUMBER / SHEET NUMBER
- EXISTING WORK SHOWN LIGHT
- NEW WORK SHOWN BOLD
- EXISTING TO BE REMOVED (APPLIES TO DEMOLITION PLANS ONLY)

ABBREVIATIONS

(#)	DESIGNATES QUANTITY	LV	LOW VOLTAGE
A	AMPERE (AMP)	LSI	LSI ELECTRONIC TRIP UNIT
AC	ALTERNATING CURRENT	LSIG	LSIG ELECTRONIC TRIP UNIT
AFC	AVAILABLE FAULT CURRENT	LTG	LIGHTING
AFF	ABOVE FINISHED FLOOR	MCA	MINIMUM CIRCUIT AMPACITY
AFG	ABOVE FINISHED GRADE	MCB	MAIN CIRCUIT BREAKER
AL	ALUMINUM	MCC	MOTOR CONTROL CENTER
ARCH	ARCHITECT/ARCHITECTURAL	MDF	MAIN DISTRIBUTION FRAME
ATS	AUTOMATIC TRANSFER SWITCH	MDS	MAIN DISTRIBUTION SWITCHBOARD
AWG	AMERICAN WIRE GAUGE	MDP	MAIN DISTRIBUTION PANELBOARD
BLDG	BUILDING	MECH	MECHANICAL
BOCT	BOTTOM OF CABLE TRAY	MLO	MAIN LUG ONLY
BSC	BIOLOGICAL SAFETY CABINET	MTS	MAIN TRANSFER SWITCH
C	CONDUIT	MVA	MEGAVOLT-AMPERE
CENT	CENTRIFUGE	MW	MEGAWATT
CKT	CIRCUIT	(N)	NEW
CL	CENTERLINE	(NL)	NEW LOCATION
CLG	CEILING	NA	NOT APPLICABLE
CRI	COLOR RENDERING INDEX	NIC	NOT IN CONTRACT
CU	COPPER	PA	PUBLIC ADDRESS
DC	DIRECT CURRENT	PE	PHOTOELECTRIC CELL
DF	DRINKING FOUNTAIN	PF	POWER FACTOR
DW	DISHWASHER	PNL	PANELBOARD
(E)	EXISTING	PV	PHOTOVOLTAIC
ECR	ENVIRONMENTAL CONTROL ROOM	PVC	POLYVINYL CHLORIDE
ELEC	ELECTRICAL	PWR	POWER
EMERG	EMERGENCY	(R)	REMOVE
EMT	ELECTRICAL METALLIC TUBING	(RL)	RELOCATE
FA	FIRE ALARM	REFL	REFLECTOR
FH	FUME HOOD	SCCR	SHORT CIRCUIT CURRENT RATING
FLA	FULL LOAD AMPS	SDP	SUB-DISTRIBUTION PANELBOARD
FTL	FEED-THROUGH LUGS	SWBD	SWITCHBOARD
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TR	TAMPER RESISTANT
GFP	GROUND FAULT PROTECTION	TTB	TELEPHONE TERMINAL BOARD
GND	GROUND	TV	TELEVISION
HP	HORSEPOWER	TYP	TYPICAL
IDF	INTERMEDIATE DISTRIBUTION FRAME	UC	UNDER CABINET
INC	INCUBATOR	UG	UNDERGROUND
K	KELVIN	UON	UNLESS OTHERWISE NOTED
KW	KILOWATT	UPS	UNINTERRUPTIBLE POWER SUPPLY
KWH	KILOWATT-HOUR	V	VOLTAGE
KV	KILOVOLT	VA	VOLT-AMPERE
KVA	KILOVOLT-AMPERE	VP	VAPOR PROOF
KVAR	KILOVOLT-AMPERE REACTIVE	W	WATT
LED	LIGHT EMITTING DIODE	WP	WEATHERPROOF
LM	LUMENS	XFMR	TRANSFORMER

SHEET LIST - ELECTRICAL

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

LEGEND, GENERAL NOTES, & SHEET INDEX

MARK	DATE	DESCRIPTION

DESIGNED:	JSG
DRAWN:	AJV
CHECKED:	MBR
DATE:	10.14.2022
PROJECT:	V015.23

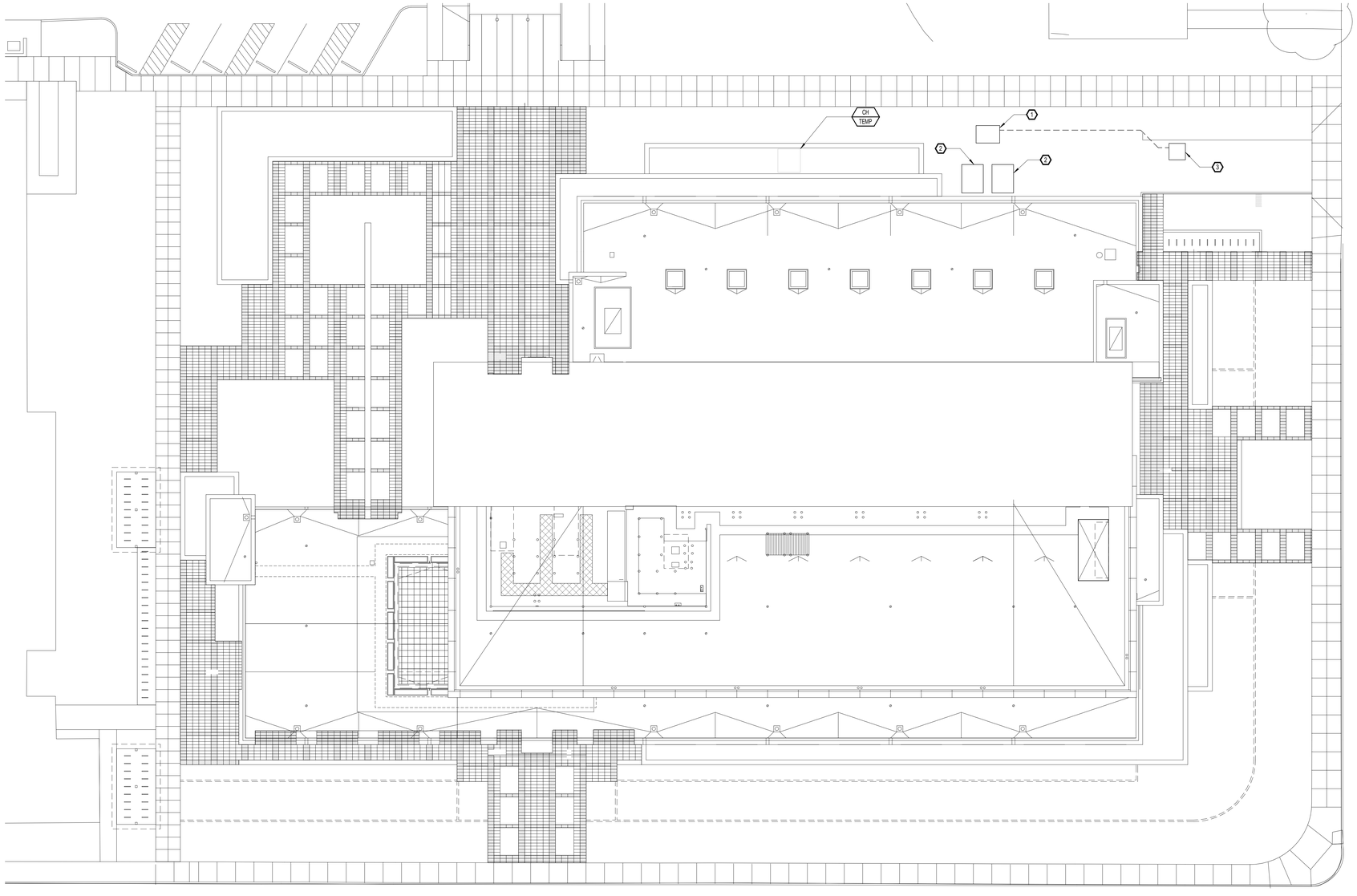
E001

PLOTTED BY: AJV ON: 10/14/2022 12:49:09 PM

SYSTEMS WEST
ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

REFERENCE NOTES:

1. EXISTING 25KV UTILITY SECTIONALIZING VAULT
2. EXISTING 25KV UTILITY TRANSFORMER
3. EXISTING 25KV UTILITY PULL VAULT



NORTH

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

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

ELECTRICAL SITE PLAN

MARK	DATE	DESCRIPTION

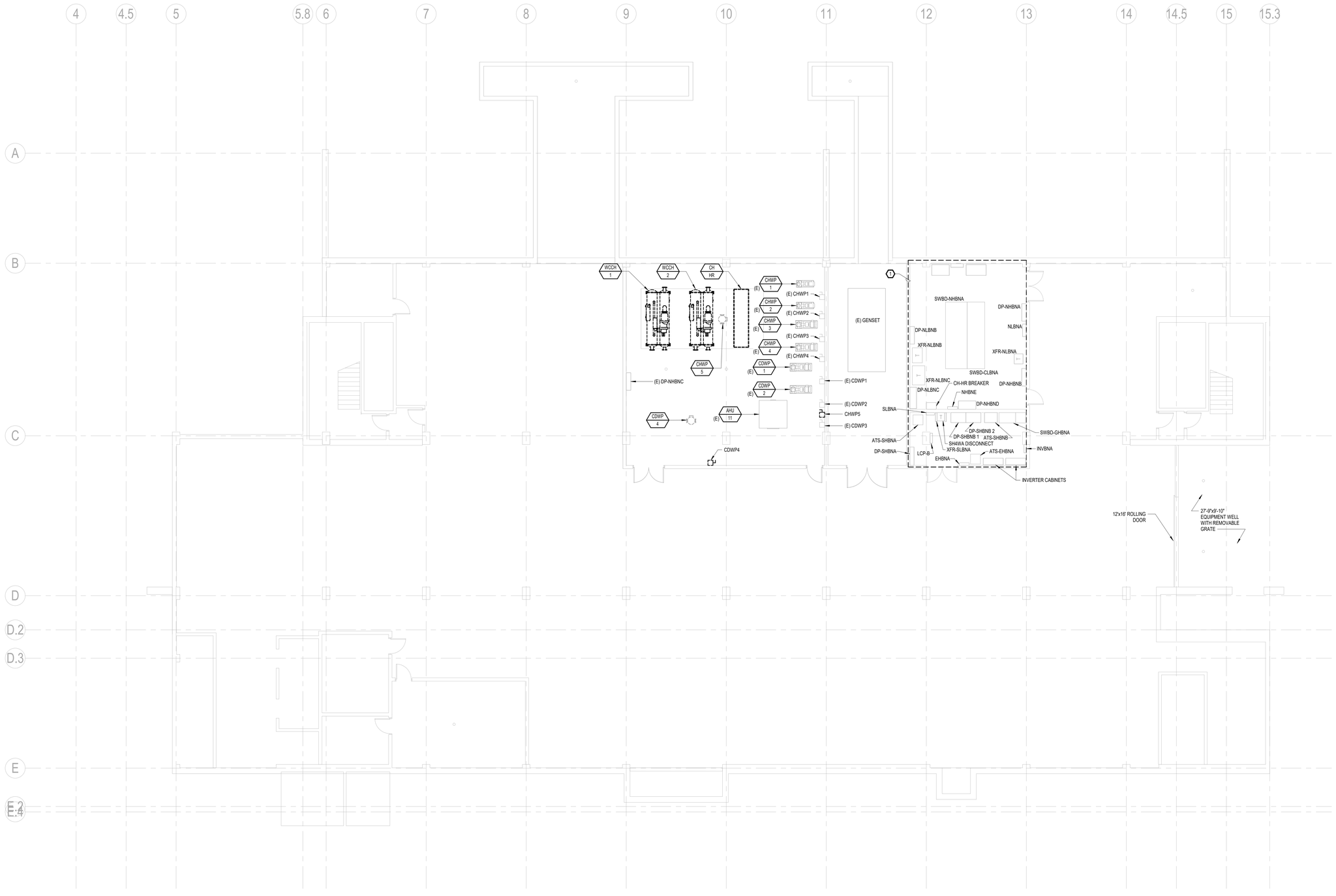
DESIGNED:	JSG
DRAWN:	AJV
CHECKED:	MBR
DATE:	10.14.2022
PROJECT:	V015.23

E100

PLOTTED BY: AJV ON: 10/14/2022 12:49:10 PM

REFERENCE NOTES:

1 ELECTRICAL EQUIPMENT WITHIN THIS AREA IS EXISTING



NORTH

1 **DEMOLITION PLAN - BASEMENT**

1/8" = 1'-0"

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

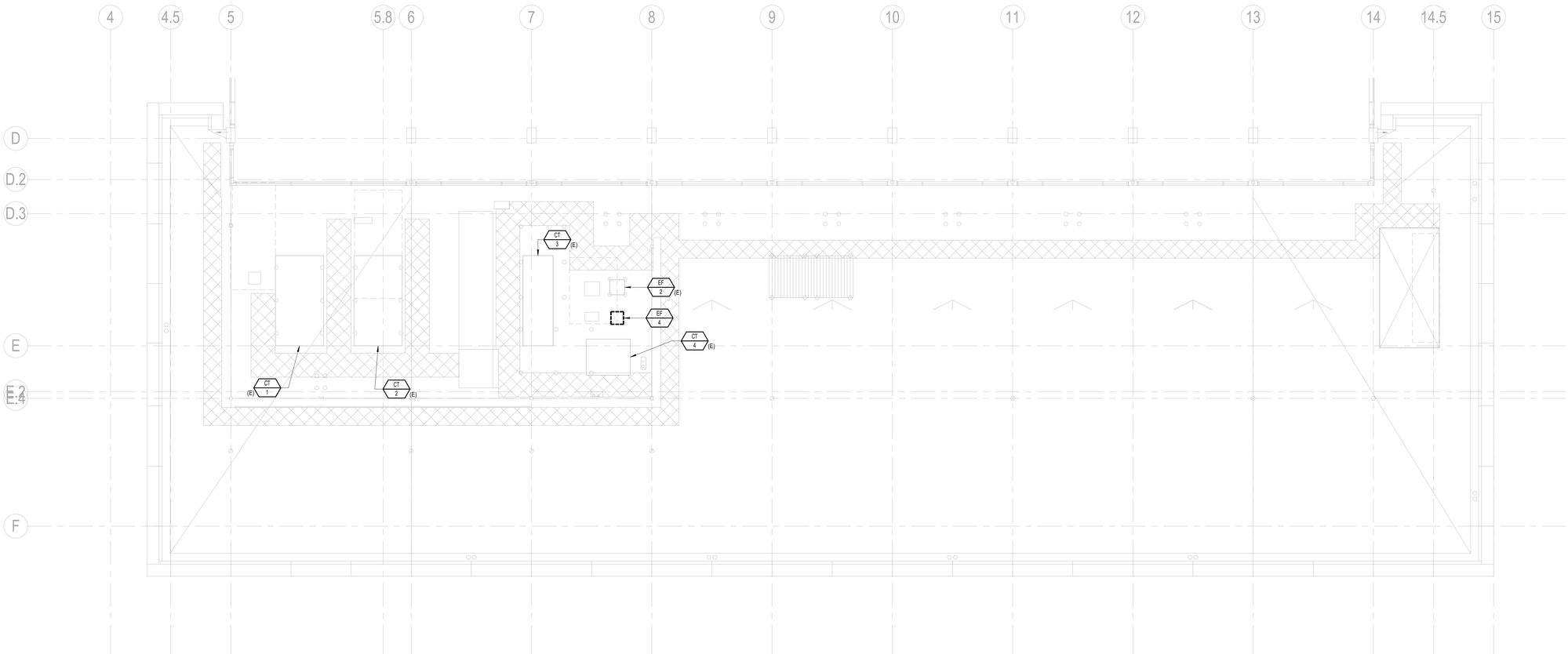
DEMOLITION PLAN - BASEMENT

MARK	DATE	DESCRIPTION

DESIGNED:	JSG
DRAWN:	AJV
CHECKED:	MBR
DATE:	10.14.2022
PROJECT:	V015.23

E101

PLOTTED BY: AJV ON: 10/14/2022 12:49:12 PM



NORTH

1 **DEMOLITION PLAN - ROOF**
1/8" = 1'-0"

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

DEMOLITION PLAN - ROOF

MARK	DATE	DESCRIPTION

DESIGNED:	JSG
DRAWN:	AJV
CHECKED:	MBR
DATE:	10.14.2022
PROJECT:	V015.23

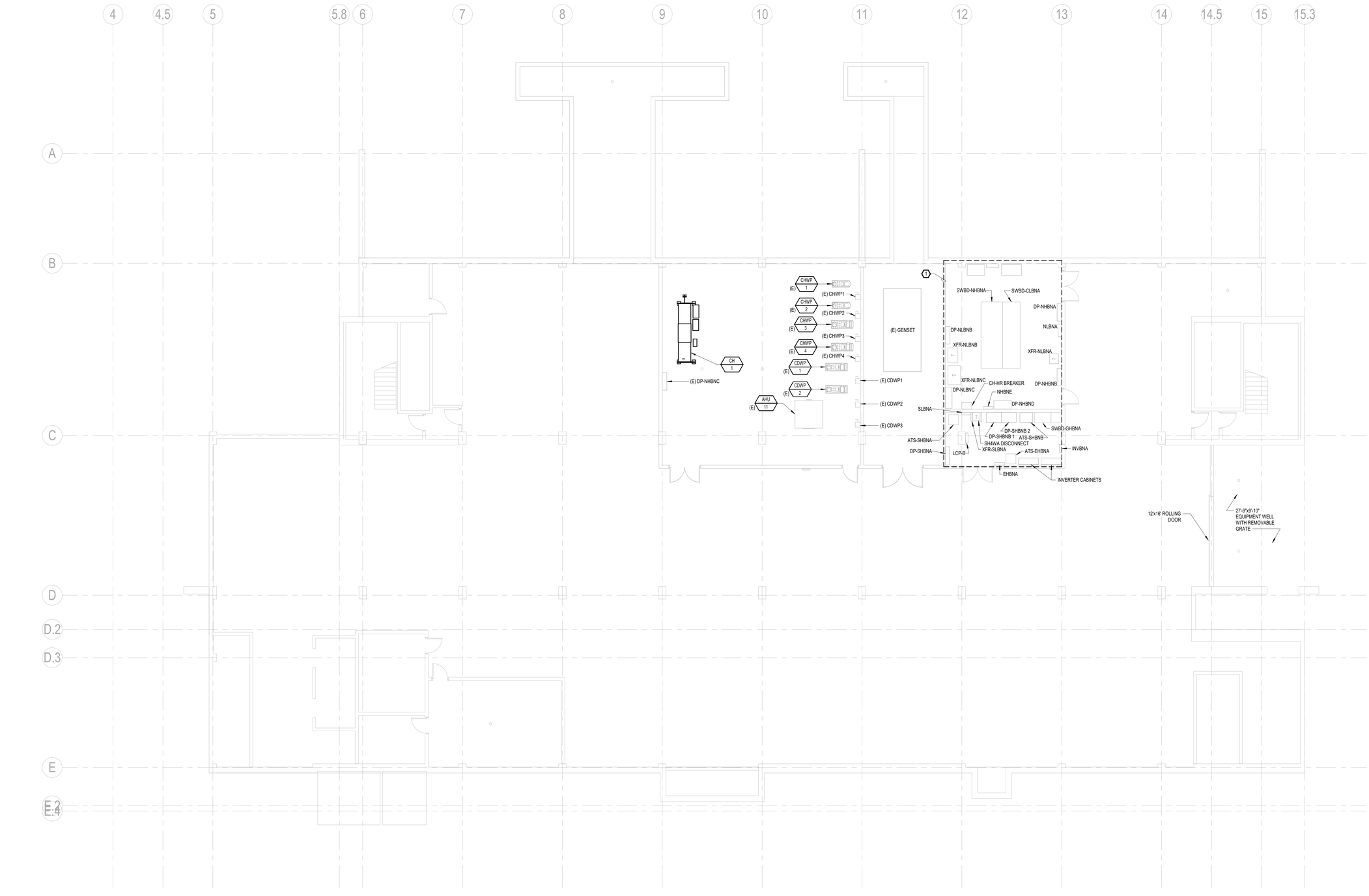
E102

PLOTTED BY: AJV ON: 10/14/2022 12:49:12 PM

REFERENCE NOTES:

1 ELECTRICAL EQUIPMENT WITHIN THIS AREA IS EXISTING

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com



Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

POWER DISTRIBUTION - BASEMENT

MARK	DATE	DESCRIPTION

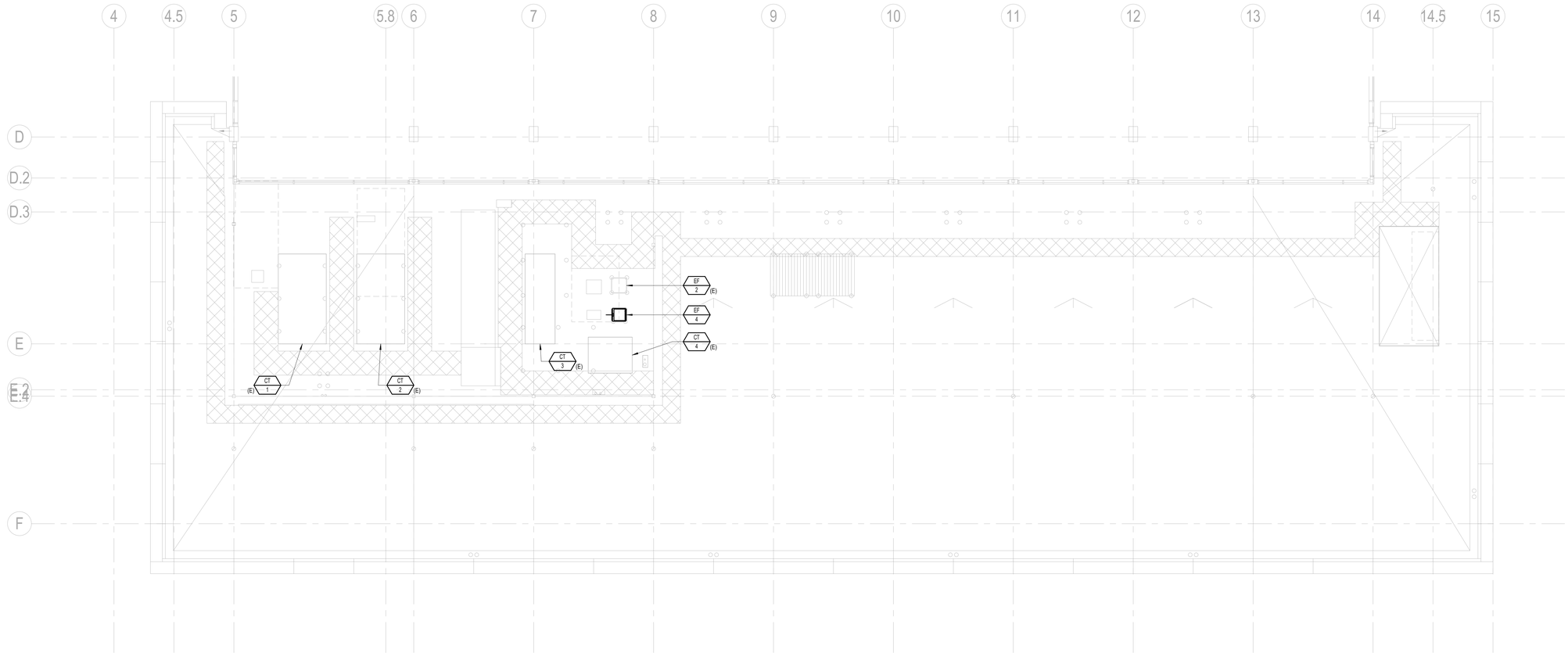
DESIGNED:	JSG
DRAWN:	AJV
CHECKED:	MBR
DATE:	10.14.2022
PROJECT:	V015.23

E121

NORTH

1 **POWER DISTRIBUTION - BASEMENT**
1/8" = 1'-0"

PLOTTED BY: AJV ON: 10/14/2022 12:49:13 PM



NORTH

1 **POWER DISTRIBUTION - ROOF**
1/8" = 1'-0"

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

POWER DISTRIBUTION - ROOF

MARK	DATE	DESCRIPTION

DESIGNED:	JSG
DRAWN:	AJV
CHECKED:	MBR
DATE:	10.14.2022
PROJECT:	V015.23

E122

PLOTTED BY: AJV ON: 10/14/2022 12:49:14 PM

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

TAG	DESCRIPTION	VOLTAGE	PHASE	HP	KW	FLA	FEEDER DESCRIPTION	CIRCUIT BREAKER (AMPS/POLES)	PANEL IDENTIFICATION	STARTER DIVISION	DISCONNECT DIVISION	VFD DIVISION	NOTES
CH-1	CHILLER	480	3		488	587.0	SEE ONE-LINE DIAGRAM	800/3		NA	DIV 26	NA	
CH-TEMP	TEMPORARY CHILLER	480	3		114	137.1	SEE ONE-LINE DIAGRAM	150/3		NA	DIV 23	NA	
EF-4	EXHASUT FAN	480	3	3		4.8	(3) 12 AWG CU, (1) 12 AWG GND. IN 3/4" C.	15/3		NA	DIV 23	DIV 23	

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

SCHEDULES

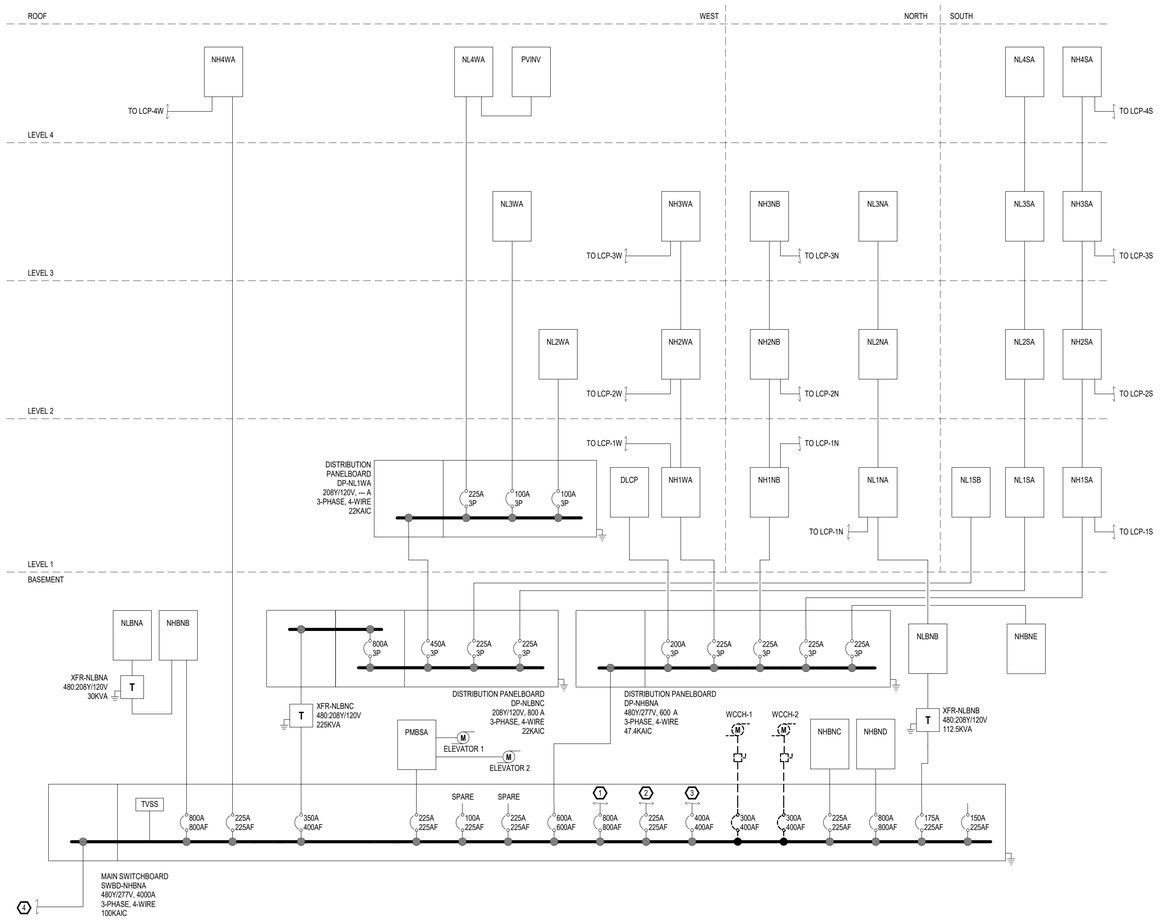
MARK	DATE	DESCRIPTION

DESIGNED: JSG
DRAWN: AJV
CHECKED: MBR

DATE: 10.14.2022
PROJECT: V015.23

E601

PLOTTED BY: AJV ON: 10/14/2022 12:49:14 PM



1 ONE-LINE DIAGRAM - 480/277 SYSTEM DEMO

NOT TO SCALE

REFERENCE NOTES:

1. TO ATS-SHBNB
2. TO ATS-EHBNA
3. TO ATS-SHBNA
4. TO (E) UTILITY

FEEDER SCHEDULE
COPPER, 3-PHASE, 3-WIRE PLUS GROUND

FEEDER TAG	NOMINAL RATING (A)	CONDUIT (NOMINAL DIAMETER, INCHES)	PHASE CONDUCTORS (AWG OR KCMIL)	GROUND CONDUCTOR (AWG OR KCMIL)
20A	20	0.75	(3) 12	12
25A	25	0.75	(3) 10	10
30A	30	0.75	(3) 10	10
35A	35	1	(3) 8	10
40A	40	1	(3) 8	10
50A	50	1	(3) 6	10
60A	60	1	(3) 6	10
70A	70	1	(3) 4	8
80A	80	1.25	(3) 3	8
90A	90	1.25	(3) 3	8
100A	100	1.25	(3) 3	8
110A	110	1.5	(3) 2	8
125A	125	1.5	(3) 1	6
150A	150	1.5	(3) 1/0	6
175A	175	2	(3) 2/0	6
200A	200	2	(3) 3/0	6
225A	225	2	(3) 4/0	4
250A	250	2.5	(3) 250	4
300A	300	3	(3) 350	4
350A	350	3	(3) 400	3
400A	400	(2) 2.5	(6) 3/0	(2) 3
450A	450	(2) 2.5	(6) 4/0	(2) 2
500A	500	(2) 3	(6) 250	(2) 2
600A	600	(2) 3	(6) 350	(2) 1
800A	800	(3) 3	(9) 300	(3) 1/0
1000A	1000	(3) 3.5	(9) 400	(3) 2/0
1200A	1200	(4) 3	(12) 350	(4) 3/0
1600A	1600	(5) 3.5	(15) 400	(5) 4/0
2000A	2000	(6) 3.5	(18) 400	(6) 250
2500A	2500	(7) 3.5	(21) 500	(7) 350
3000A	3000	(8) 3.5	(24) 500	(8) 400

FEEDER SCHEDULE
COPPER, 3-PHASE, 4-WIRE PLUS GROUND

FEEDER TAG	NOMINAL RATING (A)	CONDUIT (NOMINAL DIAMETER, INCHES)	PHASE & NEUTRAL CONDUCTORS (AWG OR KCMIL)	GROUND CONDUCTOR (AWG OR KCMIL)
20B	20	0.75	(4) 12	12
25B	25	0.75	(4) 10	10
30B	30	0.75	(4) 10	10
35B	35	1	(4) 8	10
40B	40	1	(4) 8	10
50B	50	1.25	(4) 6	8
60B	60	1.25	(4) 6	8
70B	70	1.25	(4) 4	8
80B	80	1.25	(4) 3	8
90B	90	1.5	(4) 3	8
100B	100	1.5	(4) 3	8
110B	110	1.5	(4) 2	6
125B	125	1.5	(4) 1	6
150B	150	2	(4) 1/0	6
175B	175	2	(4) 2/0	6
200B	200	2..5	(4) 3/0	6
225B	225	2.5	(4) 4/0	4
250B	250	3	(4) 250	4
300B	300	3.5	(4) 350	2
350B	350	3.5	(4) 500	1
400B	400	(2) 2.5	(8) 3/0	(2) 2
450B	450	(2) 2.5	(8) 4/0	(2) 2
500B	500	(2) 3	(8) 250	(2) 1
600B	600	(2) 3.5	(8) 350	(2) 1
800B	800	(3) 3.5	(12) 300	(3) 1/0
1000B	1000	(3) 4	(12) 500	(3) 2/0
1200B	1200	(4) 4	(16) 400	(4) 3/0
1600B	1600	(5) 4	(20) 500	(5) 4/0
2000B	2000	(6) 4	(24) 500	(6) 250
2500B	2500	(8) 4	(32) 500	(8) 350
3000B	3000	(9) 4	(36) 500	(9) 400

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

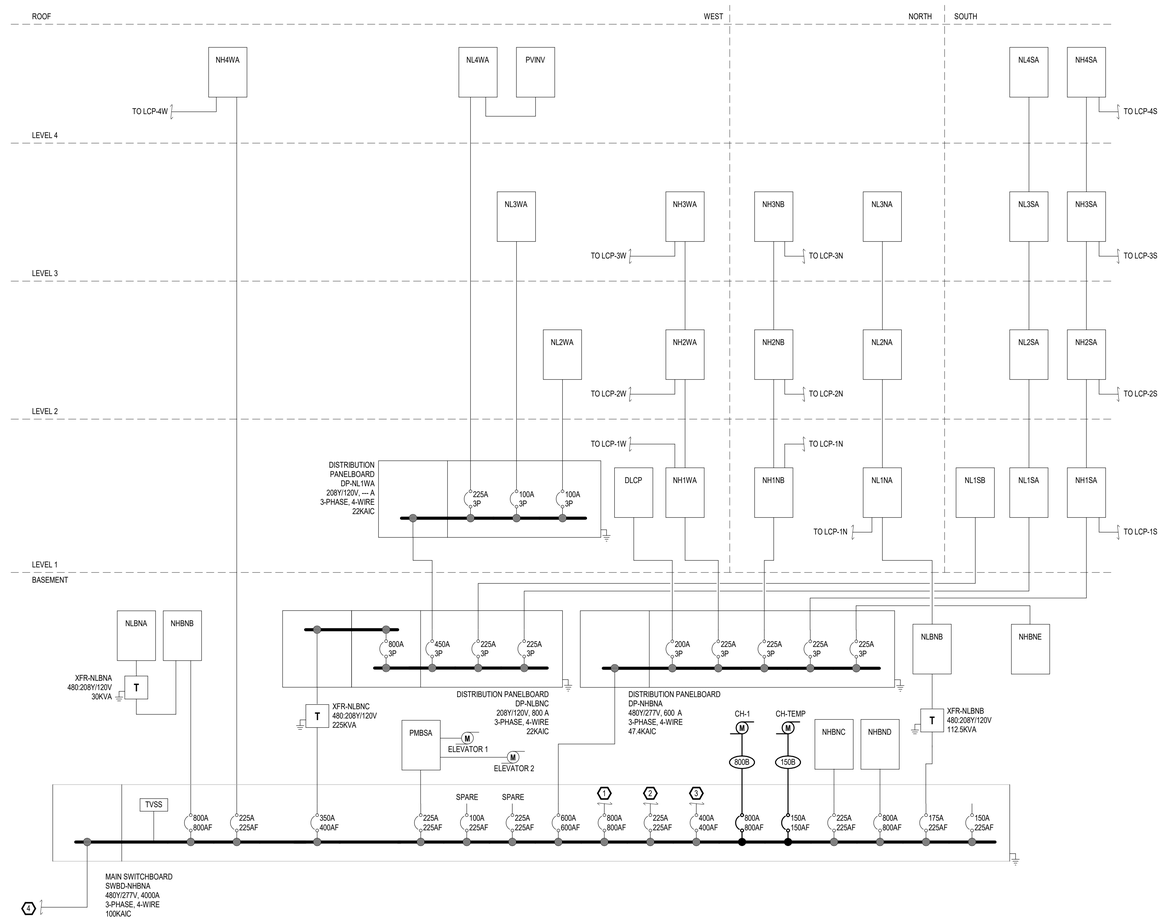
ONE-LINE DIAGRAMS

MARK	DATE	DESCRIPTION

DESIGNED: JSG
DRAWN: AJV
CHECKED: MBR
DATE: 10.14.2022
PROJECT: V015.23

E611

PLOTTED BY: AJV ON: 10/14/2022 12:49:17 PM



1 ONE-LINE DIAGRAM - 480/277 SYSTEM NEW

NOT TO SCALE

REFERENCE NOTES:

1. TO ATS-SHBNB
2. TO ATS-EHBNA
3. TO ATS-SHBNA
4. TO (E) UTILITY

FEEDER SCHEDULE
COPPER, 3-PHASE, 3-WIRE PLUS GROUND

FEEDER TAG	NOMINAL RATING (A)	CONDUIT (NOMINAL DIAMETER, INCHES)	PHASE CONDUCTORS (AWG OR KCMIL)	GROUND CONDUCTOR (AWG OR KCMIL)
20A	20	0.75	(3) 12	12
25A	25	0.75	(3) 10	10
30A	30	0.75	(3) 10	10
35A	35	1	(3) 8	10
40A	40	1	(3) 8	10
50A	50	1	(3) 6	10
60A	60	1	(3) 6	10
70A	70	1	(3) 4	8
80A	80	1.25	(3) 3	8
90A	90	1.25	(3) 3	8
100A	100	1.25	(3) 3	8
110A	110	1.5	(3) 2	8
125A	125	1.5	(3) 1	6
150A	150	1.5	(3) 1/0	6
175A	175	2	(3) 2/0	6
200A	200	2	(3) 3/0	6
225A	225	2	(3) 4/0	4
250A	250	2.5	(3) 250	4
300A	300	3	(3) 350	4
350A	350	3	(3) 400	3
400A	400	(2) 2.5	(6) 3/0	(2) 3
450A	450	(2) 2.5	(6) 4/0	(2) 2
500A	500	(2) 3	(6) 250	(2) 2
600A	600	(2) 3	(6) 350	(2) 1
800A	800	(3) 3	(9) 300	(3) 1/0
1000A	1000	(3) 3.5	(9) 400	(3) 2/0
1200A	1200	(4) 3	(12) 350	(4) 3/0
1600A	1600	(5) 3.5	(15) 400	(5) 4/0
2000A	2000	(6) 3.5	(18) 400	(6) 250
2500A	2500	(7) 3.5	(21) 500	(7) 350
3000A	3000	(8) 3.5	(24) 500	(8) 400

FEEDER SCHEDULE
COPPER, 3-PHASE, 4-WIRE PLUS GROUND

FEEDER TAG	NOMINAL RATING (A)	CONDUIT (NOMINAL DIAMETER, INCHES)	PHASE & NEUTRAL CONDUCTORS (AWG OR KCMIL)	GROUND CONDUCTOR (AWG OR KCMIL)
20B	20	0.75	(4) 12	12
25B	25	0.75	(4) 10	10
30B	30	0.75	(4) 10	10
35B	35	1	(4) 8	10
40B	40	1	(4) 8	10
50B	50	1.25	(4) 6	8
60B	60	1.25	(4) 6	8
70B	70	1.25	(4) 4	8
80B	80	1.25	(4) 3	8
90B	90	1.5	(4) 3	8
100B	100	1.5	(4) 3	8
110B	110	1.5	(4) 2	6
125B	125	1.5	(4) 1	6
150B	150	2	(4) 1/0	6
175B	175	2	(4) 2/0	6
200B	200	2..5	(4) 3/0	6
225B	225	2.5	(4) 4/0	4
250B	250	3	(4) 250	4
300B	300	3.5	(4) 350	2
350B	350	3.5	(4) 500	1
400B	400	(2) 2.5	(8) 3/0	(2) 2
450B	450	(2) 2.5	(8) 4/0	(2) 2
500B	500	(2) 3	(8) 250	(2) 1
600B	600	(2) 3.5	(8) 350	(2) 1
800B	800	(3) 3.5	(12) 300	(3) 1/0
1000B	1000	(3) 4	(12) 500	(3) 2/0
1200B	1200	(4) 4	(16) 400	(4) 3/0
1600B	1600	(5) 4	(20) 500	(5) 4/0
2000B	2000	(6) 4	(24) 500	(6) 250
2500B	2500	(8) 4	(32) 500	(8) 350
3000B	3000	(9) 4	(36) 500	(9) 400

SYSTEMS WEST ENGINEERS
725 A Street
Springfield, OR 97477
541.342.7210
systemswestengineers.com

Not For Construction

OSU KEC DUP DESIGN - PHASE 1

KELLEY ENGINEERING BUILDING
2500 NW MONROE AVE.
CORVALLIS, OR 97331

OWNER:
OREGON STATE UNIVERSITY

ONE-LINE DIAGRAMS

MARK	DATE	DESCRIPTION

DESIGNED: JSG
DRAWN: AJV
CHECKED: MBR
DATE: 10.14.2022
PROJECT: V015.23

E612

PLOTTED BY AJV ON: 10/14/2022 12:49:19 PM