Addendum No.	002
Date:	November 11, 2022
Project:	City of Great Falls Civic Center Partial HVAC Renovation
Architect:	Cushing Terrell ▪ 219 2nd Ave South ▪ Great Falls, MT 59405 ▪ (406) 452-3321
To:	All Plan Holders of Record
Pages:	Eighteen (18)

Acknowledge receipt of this Addendum by inserting its number and date in the Proposal Form. Failure to do so may subject Bidder to disqualification. This Addendum forms a part of the Contract Documents. It modifies them as follows:

GENERAL

Bid Date has been changed to accommodate City Commission and City Scheduling. New **Bid Date to be Wednesday, December 21, 2022.**

DRAWINGS

SHEET A901 – FIRST FLOOR REFLECTED CEILING PLAN

1. ADD Soffit in first floor auditorium for mechanical units.
2. ADD Remove first row of soundboard.
3. ADD Install new soundboard.
4. ADD Install new cove to match existing. Cove into existing.

SHEET A902 – SECOND FLOOR REFLECTED CEILING PLAN

1. ADD Demo ACT and Grid in Chambers complete.
2. ADD Remove speakers, cameras and projector in Chambers. Reinstall.
3. ADD Add perimeter cove and lighting in Chambers. Coordinate with Elect.
4. ADD Coord with Mech for install of new HVAC ducting in Chambers.
5. ADD Demo ACT and Grid as needed for install of new HVAC ducting in Rainbow, Ryan, Maroney and Missouri Rooms specifically. Coordinate with ELECT and MECH.
6. ADD GC to coordinate ACT, Grid and Light replacement with ELECT, MECH and ARCH.

SHEET M001 – MECHANICAL SCHEDULES & LEGENDS

1. ADD Exhaust Fan Schedule with new EF 2-1.
2. ADD RTU-4 to Rooftop Unit Schedule.
3. ADD E-5 to Grilles, Registers, and Diffusers schedule.
4. EDIT note 3 on Energy Recovery Ventilator Schedule.

SHEET M012 – HVAC DEMO PLANS – 2ND FLOOR

1. DEMO bathroom ceiling exhaust fan and corresponding 4" duct. Demo large round duct.

SHEET M013 – HVAC DEMO PLANS – ROOF

1. DEMO existing RTU (serves CITY-7 computer room). See corresponding sheet notes.
2. DEMO exhaust flue on roof. See corresponding sheet notes.
3. DEMO exhaust fan. See corresponding sheet notes.

SHEET M102 – HVAC REMODEL PLANS – 2ND FLOOR

1. ADD new thermostat for City-7 computer room. See corresponding sheet note.
2. ADD new exhaust grille E-5 and route new 8" round duct to existing exhaust system.

SHEET M103 – HVAC REMODEL PLANS – ROOF

1. ADD RTU-4 and corresponding sheet notes.
2. ADD EF-2-1 and corresponding sheet notes.

SHEET M500 – TC DIAGRAMS & DETAILS

1. EDIT Control Schematic Diagram with ERV unit remote control panel and specified location.

SHEET E100 – LEGENDS

1. EDIT to show camera and speaker symbols.

SHEET E003 – ONE LINE

1. EDIT Panel A description/location.

SHEET E100 – ROOF TOP DEMOLITION PLAN

1. ADD demolition of RTU.
2. ADD demolition of EF.
3. ADD keynote 5.
4. ADD keynote 6.

SHEET E201 – SECOND FLOOR LIGHTING PLAN

1. ADD detail 5, demolition and reconnection of lighting in rooms next to Missouri Room.
2. ADD reconnection of speakers.
3. ADD demolition and reconnection of cameras.
4. EDIT switching scheme for Commission Chambers
5. ADD demo notes 5 and 6.
6. ADD sheet notes 4 and 5.
7. EDIT remaining sheet and demo notes.

SHEET E301 – FIRST FLOOR POWER PLAN

1. EDIT Homerun X-4,7 location.

SHEET E302 – SECOND FLOOR POWER PLAN

1. EDIT location of Panel X.
2. EDIT Show location of panel A in North mechanical room, stage left.
3. ADD demolition of exhaust fan in restroom, sheet note 3.

SHEET E303 – ROOF TOP POWER PLAN

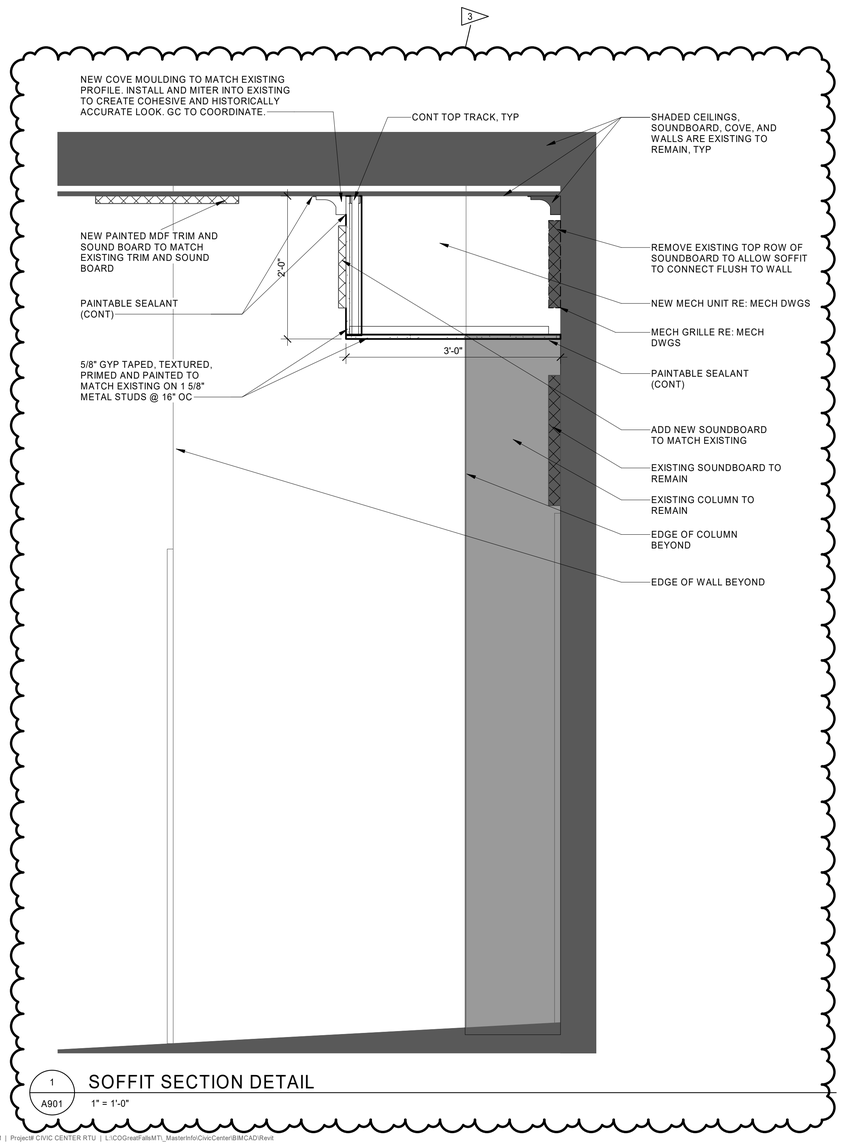
1. ADD RTU-4, breaker and circuitry as necessary.

2. ADD EF-2-1, breaker and circuitry as necessary.
3. EDIT source of power for RTU-3, now panel A.
4. EDIT keynote 1.
5. ADD keynote 7.
6. ADD keynote 8.

Prior Approvals for Electrical Lighting :

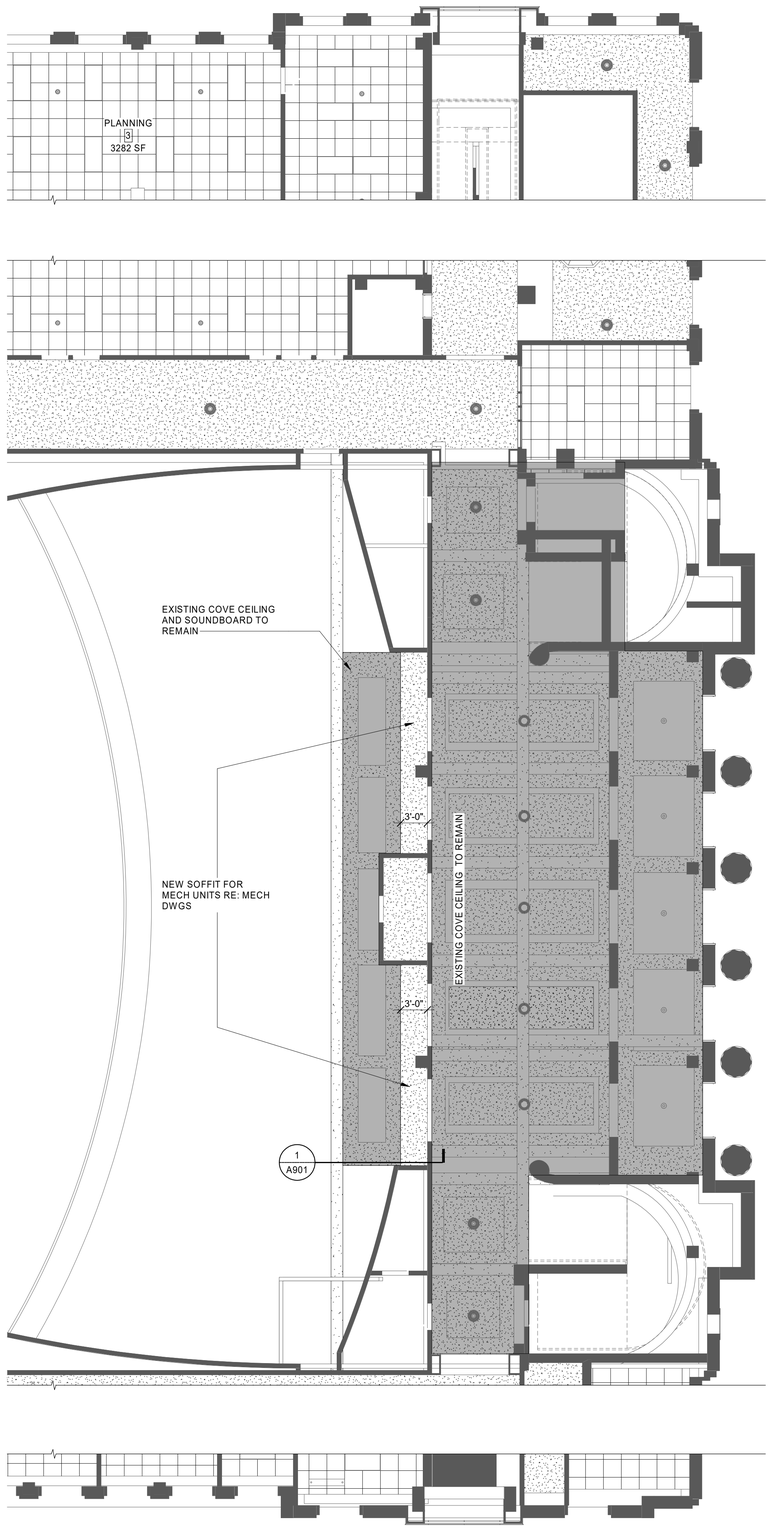
CT Lighting and Controls lighting package	APPROVED
MH Lighting package	APPROVED
MMR lighting package	APPROVED
Lumen FX lighting package	APPROVED

END OF ADDENDUM #2



1 A901 SOFFIT SECTION DETAIL

1" = 1'-0"



2 A901 FIRST FLOOR RCP RENO

1/8" = 1'-0"

1000 500 0 8 16

SCALE IN MM | SCALE IN FEET

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

NORTH REF

REFLECTED CEILING LEGEND

CEILING MATERIAL — ACT

CEILING HEIGHT — 00'-00 00/00"

ADDITIONAL NOTES — NOTES

2X2 ACOUSTICAL LAY-IN CEILING

GYPSUM BOARD CEILING - PAINT

EXPOSED STRUCTURE AND DECK - PAINT

LIGHTING - SEE ELECTRICAL

HVAC REGISTERS - SEE MECHANICAL

CEILING MATERIAL

ACT1	2X2 ACOUSTICAL LAY-IN PANEL, USG MARS OR EQUAL
EXP	EXPOSED STRUCTURE AND DECK - PAINT
GYP	GYPSUM BOARD - SKIP-TROWEL FINISH. PRIME AND PAINT.

CEILING HEIGHT

VAR	VARIES

ADDITIONAL NOTES

1. ALL CEILING INSTALLATIONS MUST MEET ASTM C636 FOR SEISMIC CATEGORY B.
2. ALL WIRE TIES ARE TO BE THREE TIGHT TURNS AROUND THEMSELVES WITHIN THREE INCHES. TWELVE-GAUGE HANGER WIRE SPACED 4 FT ON CENTER (ASTM C636 SECTION 2.3.4).
3. CEILING AREAS OF 1000 SQUARE FEET OR LESS SHALL BE EXEMPT FROM LATERAL-FORCE BRACING REQUIREMENTS. (ASTM E580 SECTION 1.6).

GENERAL NOTES

A. SHADED AREA INDICATE EXISTING TO REMAIN.
B. DASHED INDICATED TO BE REMOVED.
C. CEILING CONTRACTOR TO ENSURE INSTALLATION OF ACOUSTICAL CEILING COMPLIES WITH LOCAL SEISMIC REQUIREMENTS.
D. GC TO COORDINATE WITH MECHANICAL ON ACOUSTICAL TILE GRID REMOVAL THROUGHOUT BUILDING AS NEEDED FOR HVAC DUCT INSTALL, UNO.
E. GC TO COORDINATE REPLACEMENT OF GRID AND LIGHTS WITH MECH AND ARCH.

Cushing Terrell.
cushingterrell.com
800.757.9522

CITYGFCC_RTU
CITY OF GREAT FALLS, MT

CIVIC CENTER RTU REPLACEMENT

STATE OF MONTANA
CTA ARCHITECTS
ANTHONY D HOUTZ
2490
LICENSED ARCHITECT

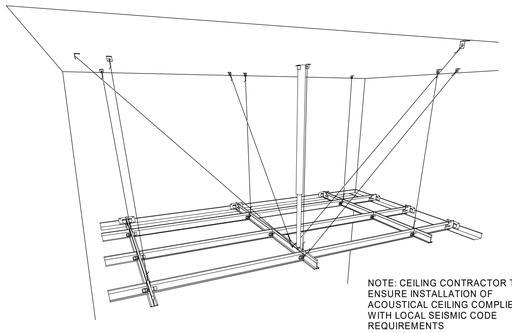
BID DOCUMENTS

10.24.2022
PROJECT# | CIVIC CENTER RTU
DESIGNED BY | A. HOUTZ, AIA
DRAWN BY | J. WATERS
REVISIONS
3 11.10.2022 ADD-02

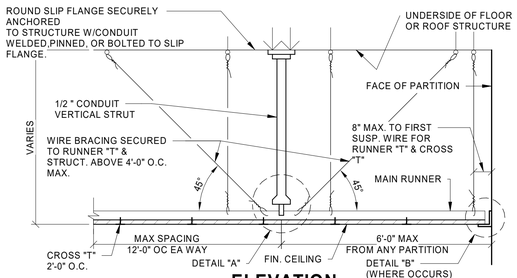
100% BID DOCUMENTS

FIRST FLOOR REFLECTED CEILING PLAN

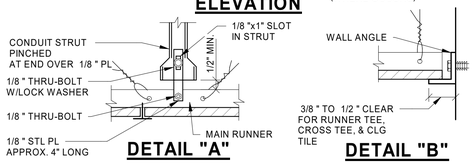
A901



NOTE: CEILING CONTRACTOR TO ENSURE INSTALLATION OF ACOUSTICAL CEILING COMPLIES WITH LOCAL SEISMIC CODE REQUIREMENTS



ELEVATION

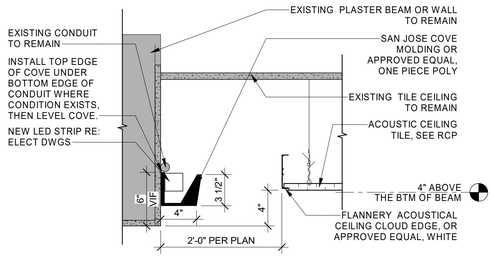


DETAIL "A"

DETAIL "B"

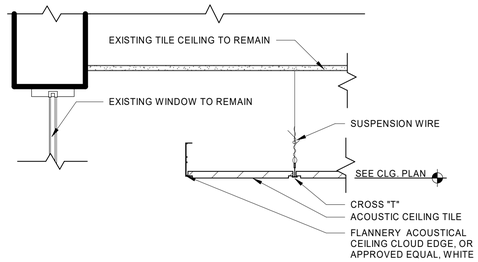
3 A902 — SEISMIC BRACING

3" = 1'-0"



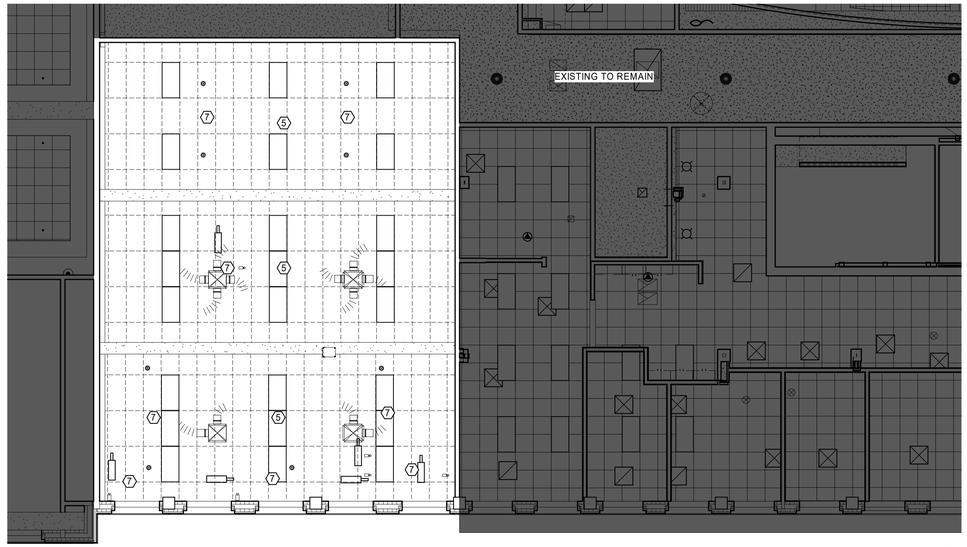
4 A902 — ACT AT BEAM OR WALL DETAIL

1 1/2" = 1'-0"



5 A902 — WINDOW TO ACT CONNECTION DETAIL

1 1/2" = 1'-0"



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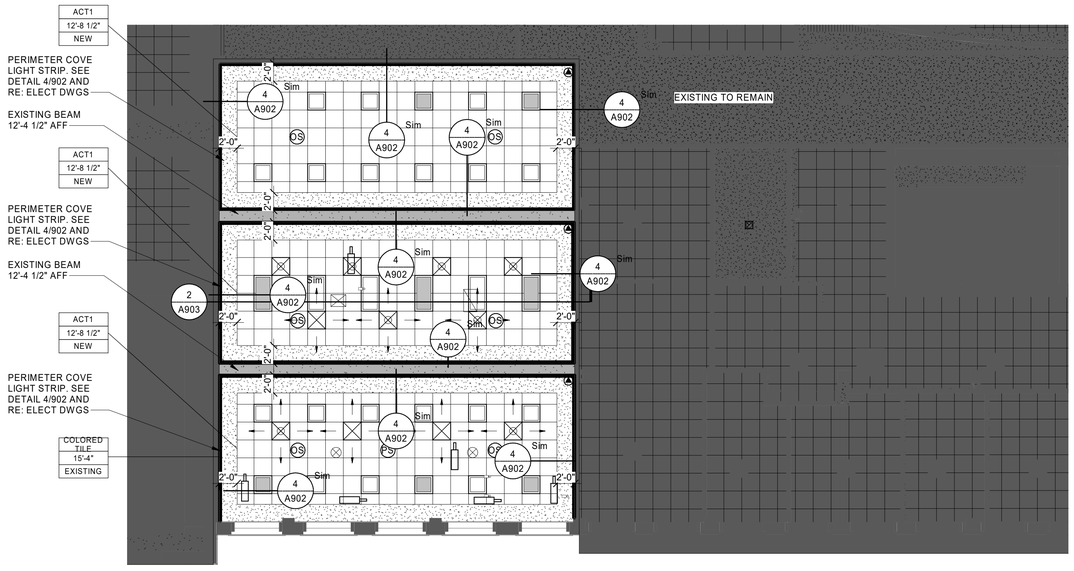
1000 500 0 8 16

SCALE IN MM | SCALE IN FEET

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

NORTH REF



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SCALE IN MM | SCALE IN FEET

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

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CEILING HEIGHT — 00'-00 00'00"

ADDITIONAL NOTES — NOTES

2X2 ACOUSTICAL LAY-IN CEILING

GYPSUM BOARD CEILING - PAINT

EXPOSED STRUCTURE AND DECK - PAINT

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HVAC REGISTERS - SEE MECHANICAL

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VAR	VARIES

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E. GC TO COORDINATE REPLACEMENT OF GRID AND LIGHTS WITH MECH AND ARCH.

3

DEMO KEYNOTES

5. DEMO EXISTING ACT AND GRD COMPLETE AND SCRAP.
6. DASHED RECTANGELS/SQUARE INDICATES AREA WHERE FLASHING WILL BE REQUIRED TO PRESERVE EXISTING ROOF WARRANTY. GC TO COORDINATE ROOF FLASHING W/ ELECT AND MECH.
7. UNINSTALL SPEAKERS, SECURITY CAMERAS AND PROJECTOR AND REINSTALL.

Cushing Terrell.

cushingterrell.com

800.757.9522

CIVIC CENTER RTU REPLACEMENT

CITYGFCC_RTU

CITY OF GREAT FALLS, MT

STATE OF MONTANA — CTA ARCHITECTS — ANTHONY D HOUTZ 24/00 — LICENSED ARCHITECT

BID DOCUMENTS

10.24.2022
PROJECT# | CIVIC CENTER RTU
DESIGNED BY | A. HOUTZ, AIA
DRAWN BY | J. WATERS
REVISIONS
3 11.10.2022 ADD-02

100% BID DOCUMENTS

SECOND FLOOR REFLECTED CEILING PLAN

A902

DX REFRIGERATION EVAPORATOR COIL SCHEDULE

TAG	ACU-1
ELEVATION (FT)	3600
ACTUAL AIRFLOW (CFM)	3350
ENTERING DRY BULB (F)	80.0
ENTERING WET BULB (F)	65.0
LEAVING DRY BULB (F)	56.9
LEAVING WET BULB (F)	55.5
TOTAL CAPACITY (MBH)	92.6
APD (IN H2O)	0.892
FACE VELOCITY (FT/MIN)	572
ACTUAL COIL FACE AREA (SQ FT)	5.86
RIGGING WEIGHT (LB)	109
LIQUID TEMP ENTERING TXV (F)	115.0
SATURATED SUCTION TEMP (F)	49.3
SUCTION SUPERHEAT (F)	8.0
SENSIBLE CAPACITY (MBH)	74.7
SYSTEM TYPE	R-410A
ASSOCIATED CONDENSING UNIT	C-2
NOTES	1

NOTES:
1) DUAL CIRCUIT COIL, FULLY INTERTWINED

ELECTRIC DUCT HEATER SCHEDULE

PLAN CODE	MFGR	MODEL	DUTY	SIZE (W" x H")	ACFM	EAT / LAT (DEG F)	CAPACITY (KW)	FLA	MAX AIR PRESS. DROP (" W.C.)	POWER V-Ph-Hz	NOTES
EDH-2-1	GREENHECK	IDHE	VENTILATION AIR	14x12	900	35 / 70.2	11.5	32	0.05	208-3-60	1, 2, 3, 4, 5
EDH-2-2	GREENHECK	IDHE	VENTILATION AIR	14x12	900	35 / 70.2	11.5	32	0.05	208-3-60	1, 2, 3, 4, 5

NOTES:
1) WITH UNIT MOUNTED DISCONNECT, SINGLE POINT EL. CONNECTION 2) WITH DUCT TEMP. SENSOR, SCR MODULATION, & INTEGRAL DISCHARGE TEMPERATURE CONTROL
3) WITH AIR PROVING SWITCH 4) WITH AUTO RESET PRIMARY HIGH LIMIT, AND MANUAL RESET SECONDARY HIGH LIMIT 5)PERFORMANCE AT 3500' ELEVATION

GRILLES, REGISTERS AND DIFFUSERS SCHEDULE

PLAN CODE	MFGR	MODEL	FACE SIZE HEIGHT	FACE SIZE WIDTH	FACE SIZE Ø	NECK SIZE HEIGHT	NECK SIZE WIDTH	NECK SIZE Ø	MAX CFM	NOISE CRITERIA (NC)	TOTAL PRESSURE (IN WC)	STYLE	# OF SLOTS	SLOT WIDTH "	MATERIAL	FINISH	NOTES
S-1	PRICE	JET SLOT	-	60	-	-	-	-	675	17	0.07	SURFACE	2	3	STEEL	SEE NOTE 4	1
S-2	PRICE	JET SLOT	-	60	-	-	-	-	780	20	0.095	SURFACE	2	3	STEEL	SEE NOTE 4	1
S-3	PRICE	LBP	8	38	-	6	36	-	600	31	0.09	SURFACE	-	-	STEEL	WHITE	3
S-4	PRICE	SMD	24	24	-	12	12	12	310	-	0.036	LAY-IN	-	-	STEEL	WHITE	5
S-5	PRICE	SMD	24	24	-	12	12	12	310	-	0.036	LAY-IN	-	-	STEEL	WHITE	6
S-6	PRICE	SMCD	24	24	-	6	6	8	90	-	0.04	LAY-IN	-	-	STEEL	WHITE	
R-1	PRICE	80	8	32	-	6	30	-	600	-	0.02	SURFACE	-	-	STEEL	WHITE	
R-2	PRICE	80	24	24	-	20	20	-	1,310	-	0.02	SURFACE	-	-	STEEL	SEE NOTE 4	
E-1	PRICE	530	24	24	-	8	8	-	120	-	0.06	LAY-IN	-	-	STEEL	WHITE	
E-2	PRICE	530	24	24	-	8	8	-	160	-	0.06	SURFACE	-	-	STEEL	WHITE	
E-3	PRICE	80	24	24	-	22	22	-	640	-	0.045	LAY-IN	-	-	STEEL	WHITE	
E-4	PRICE	JET SLOT	-	60	-	-	-	-	780	20	0.09	SURFACE	2	3	STEEL	SEE NOTE 4	2
E-5	PRICE	80	10	10	-	8	8	-	200	-	0.04	SURFACE	-	-	STEEL	WHITE	

NOTES:
1) LINEAR SLOT DIFFUSER WITH INTEGRAL PLENUM, JET SLOT DIFFUSER WITH PATTERN CONTROL. 2) LINEAR JET SLOT RETURN GRILLE WITH INTEGRAL PLENUM. 3) CORE 27C, 30 DEG DEFLECTION
4) FIELD MATCH EXISTING PAINT 5) 4-WAY THROW 6) 1-WAY THROW.

2

CONDENSING UNIT SCHEDULE

PLAN CODE	MFGR	MODEL	TOTAL CAPACITY (MBH)	AMBIENT TEMP (DEG F)	NO. COMPRESSORS / STAGES	NO. CONDENSER FANS	EER	POWER (V-Ph-Hz)	MCA	MOP	REFRIGERANT	SERVES	NOTES
C-2	TRANE	TTA090	91	95	1	1	12.5	208-3-60	38	60	R 410A	ACU-1 GIBSON RM	1,2,3

NOTES:
1) ELECTROMECHANICAL CONTROLS. 2) WITH 24 V CONTROL TRANSFORMER, AND ANTI-SHORT CYCLE TIMER .
3) WITH PHASE LOSS / REVERSAL MONITOR. WITH EXTERNAL HIGH AND LOW PRESSURE CUTOUT DEVICES, WITH EVAPORATOR DEFROST CONTROL.

VRV SYSTEM INDOOR UNIT SCHEDULE

PLAN CODE	MFGR	MODEL	CONFIG.	NOMINAL SIZE (IN)	HEAT PUMP PLANT	COOLING PERFORMANCE EAC DB/RH (°F/%RH)	COOLING PERFORMANCE TOTAL CAPACITY (BTU/HR)	COOLING PERFORMANCE SENSIBLE CAPACITY (BTU/HR)	HEATING PERFORMANCE EAT (°F)	HEATING PERFORMANCE CAPACITY (BTU/HR)	FAN DATA AIRFLOW (CFM)	FAN DATA ESP (IN. W.C.)	FAN DATA SOUND POWER (DBA)	FAN DATA POWER	FAN DATA FAN MOTOR WATTS	FAN DATA UNIT MCA (AMPS)	NOTES
IU-2-1	DAIKIN	FXZQ09	CEILING CASSETTE	24 x 24	ACCU-2	75/50	8,000	5,909	70	10,574	317	-	26-33	208-1-60	50	0.3	1, 2
IU-2-2	DAIKIN	FXZQ18	CEILING CASSETTE	24 x 24	ACCU-2	75/50	14,728	11,471	70	20,121	511	-	33-43	208-1-60	50	0.6	1, 2
IU-2-3	DAIKIN	FXZQ18	CEILING CASSETTE	24 x 24	ACCU-2	75/50	14,728	11,471	70	20,121	511	-	33-43	208-1-60	50	0.6	1, 2
IU-2-4	DAIKIN	FXZQ09	CEILING CASSETTE	24 x 24	ACCU-2	75/50	8,000	5,909	70	10,574	317	-	26-33	208-1-60	50	0.3	1, 2
IU-2-5	DAIKIN	FXAQ12	WALL MOUNTED	11 x 31 x 9	ACCU-2	75/50	10,000	7,792	70	13,499	290	-	26-33	208-1-60	-	0.4	1, 2, 3
IU-2-6	DAIKIN	FXAQ18	WALL MOUNTED	11 x 41 x 9	ACCU-2	75/50	14,000	11,722	70	19,999	500	-	37 - 43	208-1-60	-	0.4	1, 2, 3
IU-2-7	DAIKIN	FXSQ18	CONCEALED DUCTED	10 x 40 x 32	ACCU-2	75/50	14,000	12,206	70	20,131	600	0.6	29 - 34	208-1-60	230	1.6	1, 2
IU-2-8	DAIKIN	FXSQ54	CONCEALED DUCTED	10 x 61 x 32	ACCU-2	75/50	45,000	34,635	70	60,051	1377	0.56	43	208-1-60	350	3.3	1, 2
IU-2-9	DAIKIN	FXSQ54	CONCEALED DUCTED	10 x 61 x 32	ACCU-2	75/50	45,000	34,635	70	60,051	1377	0.56	43	208-1-60	350	3.3	1, 2

NOTES:
1) WITH UNIT POWERED CONDENSATE PUMP 2) BTU / HR PERFORMANCE INDICATED IS ADJUSTED FOR OUTDOOR UNIT CONNECTIVITY AS IN OUTDOOR UNIT SCHEDULE. 3) WITH FACTORY DISCONNECT

AIR SOURCE VARIABLE REFRIGERANT FLOW (VRF) HEAT PUMP OUTDOOR UNIT SCHEDULE

PLAN CODE	MFGR	MODEL	NOMINAL TONS	REFRIGERANT	POWER (V-Ph-HZ)	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	MCA	MOCP	WEIGHT (LBS)	EER	NOTES
ACCU-2 OVERALL	DAIKIN	REYQ240XATJA	20	R410A	--	186.2	130.8	--	--		11.6	1,2,3,4,5
ACCU-2 MODULE A	DAIKIN	REYQ120XATJA	--	--	208-3-60	--	--	43.0	50	727	--	
ACCU-2 MODULE B	DAIKIN	REYQ120XATJA	--	--	208-3-60	--	--	43.0	50	727	--	

NOTES
1. SYSTEM IS SPECIFICALLY DESIGNED VARIABLE REFRIGERANT VOLUME SYSTEM WITH HEAT RECOVERY CAPACITY. SYSTEM SHALL BE CAPABLE OF SIMULTANEOUS HEATING AND COOLING, WITH HEATING OR COOLING AVAILABLE ANY ZONE ANYTIME.
2. CAPACITIES BASED ON 95.0 F SUMMER OUTDOOR AMBIENT AND -20.0 WINTER OUTDOOR AMBIENT AND INDOOR UNIT PERFORMANCE PER INDOOR UNIT SCHEDULE.
3. PERFORMANCE BASED ON INDOOR UNIT CONNECTIVITY OF 87.9%
4. PROVIDE WITH ITOUCH CENTRALIZED SYSTEM CONTROLLER
5. ALL REFRIGERANT PIPING SHALL BE SIZED BY MANUFACTURER'S SPECIFIC PROGRAM. REFRIGERANT PIPING DIAGRAM, SIZING, LENGTH, SHALL BE INCLUDED IN SUBMITTAL.

ENERGY RECOVERY VENTILATOR SCHEDULE

PLAN CODE	MFGR	MODEL	CFM SUPPLY	CFM EXHAUST	MIN ESP (IN WC) SUPPLY	MIN ESP (IN WC) EXHAUST	WINTER DESIGN (DB / WB, °F) OUTSIDE AIR	WINTER DESIGN (DB / WB, °F) RETURN AIR	WINTER DESIGN (DB / WB, °F) SUPPLY	WINTER DESIGN (DB / WB, °F) EXHAUST	SUMMER DESIGN (DB / WB, °F) OUTSIDE AIR	SUMMER DESIGN (DB / WB, °F) RETURN AIR	SUMMER DESIGN (DB / WB, °F) SUPPLY	SUMMER DESIGN (DB / WB, °F) EXHAUST	MOTOR (HP) SUPPLY	MOTOR (HP) EXHAUST	POWER V / PH / HZ	UNIT WEIGHT (LBS)	NOTES
ERV-2-1	GREENHECK	ECV-10-VG-PM	900	900	0.65	0.57	-15.4 / -16.2	72 / 57.5	40 / 33.6	17.1 / 17.1	92.7 / 64.5	75 / 65	81.5 / 62.4	86.2 / 64.1	3/4	3/4	208-1-60	420	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
ERV-2-2	GREENHECK	ECV-10-VG-PM	900	900	0.65	0.57	-15.4 / -16.2	72 / 57.5	40 / 33.6	17.1 / 17.1	92.7 / 64.5	75 / 65	81.5 / 62.4	86.2 / 64.1	3/4	3/4	208-1-60	420	1, 2, 3, 4, 5, 6, 7, 8, 9, 10

NOTES:
1) SINGLE POINT POWER CONNECTION, WITH UNFUSED DISCONNECT, 8.6 AMPS MCA, 15.0 AMP MOCP. 2) DIRECT DRIVE ECM MOTORS WITH MANUAL SPEED DIALS FOR BALANCING. 3) WITH INTERNAL CONTROLS FOR SHEET M500 SEQUENCE & TERMINAL STRIP FOR ENABLE / DISABLE
4) WITH FACTORY MOUNTED AND WIRED LOW VOLTAGE MOTORIZED OUTDOOR AIR AND EXHAUST AIR DAMPERS SPRING RETURN NORMALLY CLOSED. 5) REMOTE PANEL FOR FIELD MOUNTING WITH HAND / OFF / AUTO REMOTE STATUS DISPLAY.
6) WITH OPTIONAL TIMED EXHAUST FROST CONTROL 7) WITH 2" MERV 8 PLEATED FILTERS 8) WITH FACTORY WIRED SUPPLY AND EXHAUST FAN MOTOR STARTERS 9) FURNISH WITH ROOF CURB MINIMUM 20" TALL
10) WITH BOTTOM FRESH AIR OUTLET AND BOTTOM EXHAUST AIR INLET

2

HVAC ABBREVIATIONS

%	PERCENT
ACFM	ACTUAL CFM
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMP	AMPERE (AMP, AMPS)
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APD	AIR PRESSURE DROP
APPROX	APPROXIMATE
BHP	BRAKE HORSEPOWER, BOILER HORSEPOWER
BOD	BOTTOM OF DUCT
BTU	BRITISH THERMAL UNIT
C	COMMON
CFM	CUBIC FEET PER MINUTE
COD	CENTER OF DUCT
CU FT	CUBIC FEET
CU IN	CUBIC INCH
DB	DECIBEL
DBT	DRY-BULB TEMPERATURE
DIA	DIAMETER
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
EDR	EQUIVALENT DIRECT RADIATION
EWT	ENTERING WATER TEMPERATURE
EXP	EXPANSION
F	FAHRENHEIT
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FOOT OR FEET
GA	GAGE OR GUAGE
GAL	GALLONS
GC	GENERAL CONTRACTOR
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HD	HEAD
HGT	HEIGHT
HP	HORSEPOWER
HZ	FREQUENCY
ID	INSIDE DIAMETER
KW	KILOWATT
KWH	KILOWATT HOUR
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LF	LINEAR FEET
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	BTU PER HOUR (THOUSAND)
MC	MECHANICAL CONTRACTOR
MIN	MINIMUM
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO	NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OD	OUTSIDE DIAMETER
PD	PRESSURE DROP
PH	PHASE (ELECTRICAL)
PSI	POUNDS PER SQUARE INCH
PSIA	PSI ABSOLUTE
PSIG	PSI GAUGE
R/O	RUN OUT
RA	RETURN AIR
RH	RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SCFM	CFM, STANDARD CONDITIONS
SH	SENSIBLE HEAT
SP	STATIC PRESSURE
SP VOL	SPECIFIC VOLUME
SPEC	SPECIFICATION
STD	STANDARD
SUCT	SUCTION
T STAT	THERMOSTAT
TC	TEMPERATURE CONTROL
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TOD	TOP OF DUCT
TONS	TONS OF REFRIGERATION
V	VOLT
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
W/	WITH
WPD	WATER PRESSURE DROP

MECHANICAL LEGEND

SYMBOL	DESCRIPTION
D	DRAIN
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
RS	REFRIGERANT SUCTION LINE
RL	REFRIGERANT LIQUID LINE
HG	REFRIGERANT HOT GAS LINE
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL VENT
DFS	DRY FLUID SUPPLY
DFR	DRY FLUID RETURN
LPS	LOW PRESSURE STEAM SUPPLY
COND	STEAM CONDENSATE RETURN
	GATE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	GLOBE VALVE
	TRIPLE DUTY VALVE
	SWING CHECK VALVE
	STRAINER
	FLEX CONNECTOR
	HOSE END DRAIN VALVE
	PRESSURE REDUCING VALVE
	SAFETY RELIEF VALVE
	UNION
	MOTORIZED T.C. VALVE / 2-WAY
	MOTORIZED T.C. VALVE / 3-WAY
	ECCENTRIC PLUG BALANCING VALVE
	VALVE IN RISER
	TEE UP
	TEE DOWN
	ELBOW UP
	ELBOW DOWN
	PIPE SIZE CHANGE
	MANUAL FLOW BALANCING VALVE (CIRCUIT SETTER)
	AUTOMATIC FLOW BALANCING VALVE
	PIPE GUIDE
	PIPE ANCHOR
	PRESSURE / TEMP. TEST PLUG
T	DIAL THERMOMETER
P	PRESSURE GAUGE W/ SNUBBER

SYMBOL	DESCRIPTION
T	THERMOSTAT/TEMPERATURE SENSOR
T_R	REVERSE ACTING THERMOSTAT
T	THERMOSTAT/TEMPERATURE SENSOR W/ GUARD
H	HUMIDISTAT
CO	CARBON MONOXIDE SENSOR
CO_2	CARBON DIOXIDE SENSOR
NO_2	NITROGEN DIOXIDE SENSOR
	ACOUSTICALLY LINED SHEET METAL DUCT
	MANUAL BALANCING DAMPER
	FLEX CONNECTOR
AD	ACCESS DOORS
FD	FIRE DAMPER
F/SD	FIRE/SMOKE DAMPER
M	MOTORIZED DAMPER
	TURNING VANE ELBOW
	45° LOW-LOSS TAKE-OFF FITTING W/ DAMPER & FLEX DUCT
	45° LOW-LOSS TAKE-OFF FITTING W/ DAMPER & RIGID ROUND DUCT
	RECTANGULAR/ROUND DUCT WITH 45° HIGH EFFICIENCY TAKE-OFF
	SUPPLY DIFFUSER W/ FLEX DUCT, THROW PATTERN SHOWN ON PLANS
	LAY-IN SUPPLY DIFFUSER W/ FLEX DUCT, THROW PATTERN SHOWN ON PLANS
	RETURN GRILLE
	EXHAUST GRILLE
	CONNECT NEW WORK TO EXISTING
	CONNECT NEW WORK TO EXISTING
C	COMMON
(E)	EXISTING
(R)	RELOCATE / RELOCATED

EXHAUST FAN SCHEDULE

PLAN CODE	SERVICE	MFR	MODEL	TYPE	CFM	ESP (IN. W.C.)	RPM	DRIVE	MOTOR (HP)	BRAKE HP	POWER VOLT	POWER PH	POWER FREQ	WEIGHT (LBS)	NOTES
EF-2-1	GENERAL EXHAUST	GREENHECK	G-140-VG	DOWNBLAST	1,600	0.56	1187	DIRECT	1/2	0.31	120	1	60	55	1,2,3,4,5,6

NOTES:
1) FANS SELECTED AT 3600 FEET ABOVE SEA LEVEL
2) FACTORY WIRED NEMA DISCONNECT IN MOTOR HOUSING PROTECTED FROM WEATHER.
3) ECM MOTOR, SPEED CONTROL POTENTIOMETER MOUNTED ON THE MOTOR.
4) WITH GRAVITY BACKDRAFT DAMPER.
5) WITH ROOF CURB, 24" HEIGHT
6) WITH TORK E103B (OR SIMILAR) 1-CHANNEL ELECTRONIC SPST TIMER W/ ASTRONOMICAL TIME CLOCK.

ROOFTOP UNIT SCHEDULE

PLAN CODE	RTU-1	RTU-2	RTU-3	RTU-4
MANUFACTURER	TRANE	TRANE	TRANE	TRANE
MODEL	TSJ102	TSJ102	TSJ102	TSC036G3R0A
LOCATION	MISSOURI RM	MISSOURI RM	COMMISSIONERS CHAMBER	CITY-7
NOMINAL TONNAGE	8.5	8.5	8.5	3
TYPE	PACKAGED DX COOLING	PACKAGED DX COOLING	PACKAGED DX COOLING	PACKAGED DX COOLING
UNIT VOLTAGE	208-230 / 3 / 60	208-230 / 3 / 60	208-230 / 3 / 60	208-230 / 3 / 60
UNIT MCA / MOP (AMPS)	48 / 60	48 / 60	121 / 125	20 / 30
UNIT EER / SEER	11.2 / 14.8	11.2 / 14.8	11.2 / 14.8	12 / 14
VENTILATION AIR (CFM)	NONE	NONE	875	NONE
SUPPLY FAN SECTION				
TYPE	DIRECT DRIVE	DIRECT DRIVE	DIRECT DRIVE	DIRECT DRIVE
ACFM @ SITE ALTITUDE	4000	4000	3400	1200
FAN RPM	1370	1370	1238	1100
ESP / TSP (INCHES W.C.)	0.75 / 1.02	0.75 / 1.02	0.75 / 0.95	1" ESP
HORSEPOWER (BRAKE / NAMEPLATE)	1.65 / 3.1	1.65 / 3.1	1.21 / 3.1	0.57 / 0.75
ECONOMIZER	100% ECONOMIZER W/ BAROMETRIC RELIEF	100% ECONOMIZER W/ BAROMETRIC RELIEF	100% ECONOMIZER W/ BAROMETRIC RELIEF	100% ECONOMIZER W/ POWERED EXHAUST
HEATING	NONE	NONE		NONE
SYSTEM TYPE / # STAGES	-	-	ELECTRIC HEAT / 2 STAGES	-
EAT / LAT (°F)	-	-	40 / 73.3	-
ACFM @ SITE ALTITUDE	-	-	3400	-
COOLING				
SYSTEM TYPE	PACKAGED DX COOLING	PACKAGED DX COOLING	PACKAGED DX COOLING	PACKAGED DX COOLING
COMPRESSOR TYPE / QTY	SCROLL / 2	SCROLL / 2	SCROLL / 2	SCROLL / 1
CAPACITY CONTROL	SEE NOTE 2	SEE NOTE 2	SEE NOTE 2	ON / OFF
ACFM @ SITE ALTITUDE	4000	4000	3400	1200
EAT DB / WB (°F)	73 / 60.5	73 / 60.5	82 / 62.4	80 / 62
UNIT LAT DB / WB (°F)	54.3 / 52.2	54.3 / 52.2	56.57 / 52.65	55.97 / 52.73
NET CAPACITY (TOTAL / SENS, MBH)	95.6 / 85.4	95.6 / 85.4	90.86 / 76.38	33.09 / 33.0
AMBIENT AIR TEMP.	95	95	95	95
REFRIGERANT	R410A	R410A	R410A	R410A
PRE-FILTER SECTION				
MERV RATING / EFFICIENCY	MERV 8 / 30%	MERV 8 / 30%	MERV 8 / 30%	MERV 8 / 30%
TYPE	2" THICK PLEATED	2" THICK PLEATED	2" THICK PLEATED	2" THICK PLEATED
UNIT WEIGHT, OPERATING (LBS)	1079	1079	1130	431
NOTES	1,2,3,4,5,6,7,10	1,2,3,4,5,6,7,10	1,2,3,4,5,6,8,9,10	1,3,5,8,10,11

NOTES:
1) WITH UNFUSED DISCONNECT
2) WITH TWO UNEQUAL SIZED ON/OFF SCROLL COMPRESSORS
3) WITH HAIL GUARDS
4) WITH PHASE LOSS/REVERSAL, OVER/ UNDER/ BROWN OUT PROTECTION, AND PHASE UNBALANCE PROTECTION
5) WITH ROOF CURB, 24" HEIGHT
6) WITH HINGED ACCESS DOORS
7) WITH SEVEN DAY PROGRAMMABLE THERMOSTAT, WITH REMOTE TEMPERATURE SENSOR FOR FIELD INSTALL
8) WITH SEVEN DAY PROGRAMMABLE THERMOSTAT
9) WITH WALL MOUNT CO2 SENSOR & DEMAND BASED VENTILATION SEQUENCE
10) WITH BACNET BMS INTEGRATION CARD FOR CONNECTION TO FUTURE BMS
11) WITH POWERED EXHAUST FAN

2

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10.24.2022
PROJECT# | CITYGFCC_RTU
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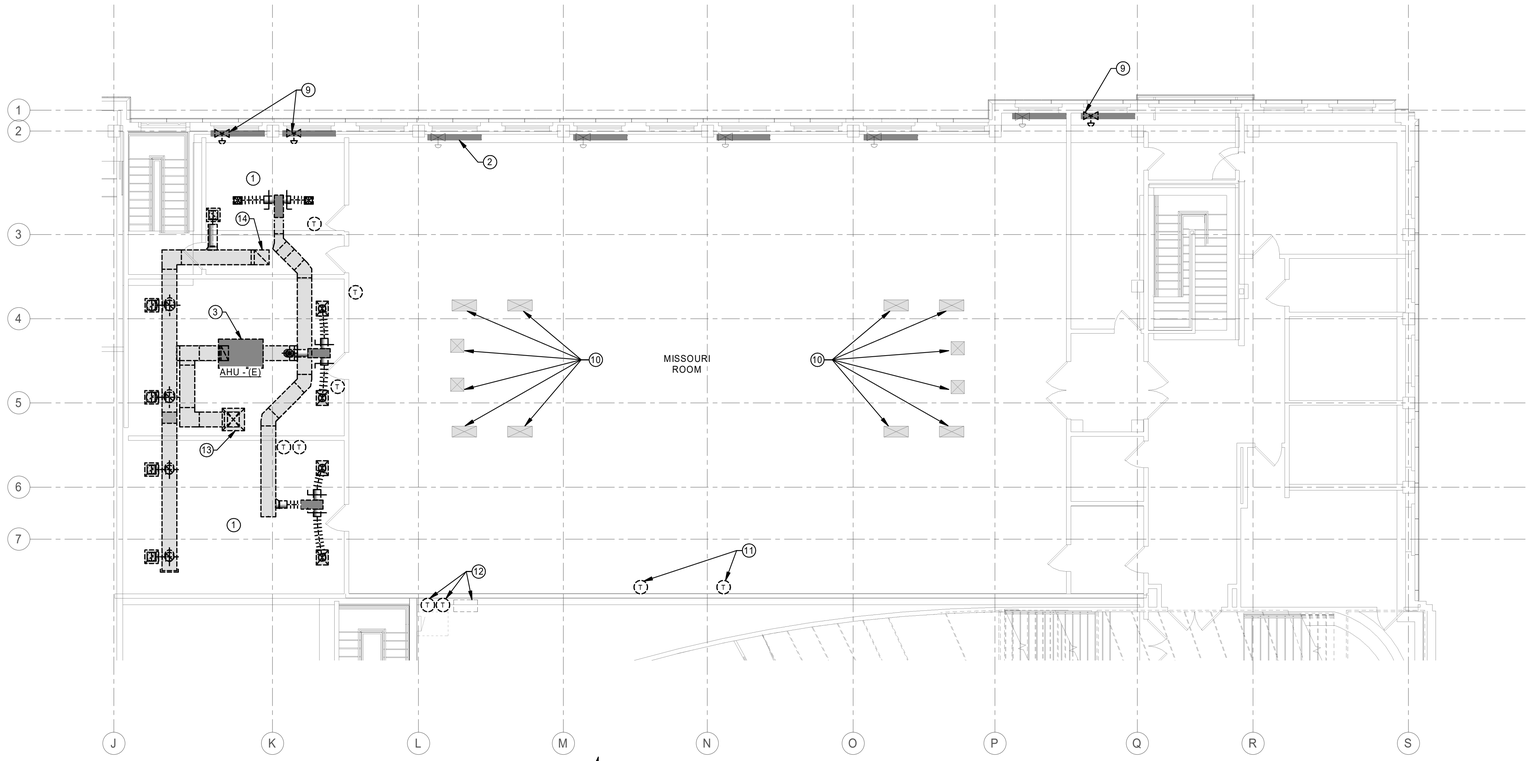
DRAWN BY | BLAKE
REVISIONS
2 11.07.2022 Addendum 2

MECHANICAL SCHEDULES & LEGENDS

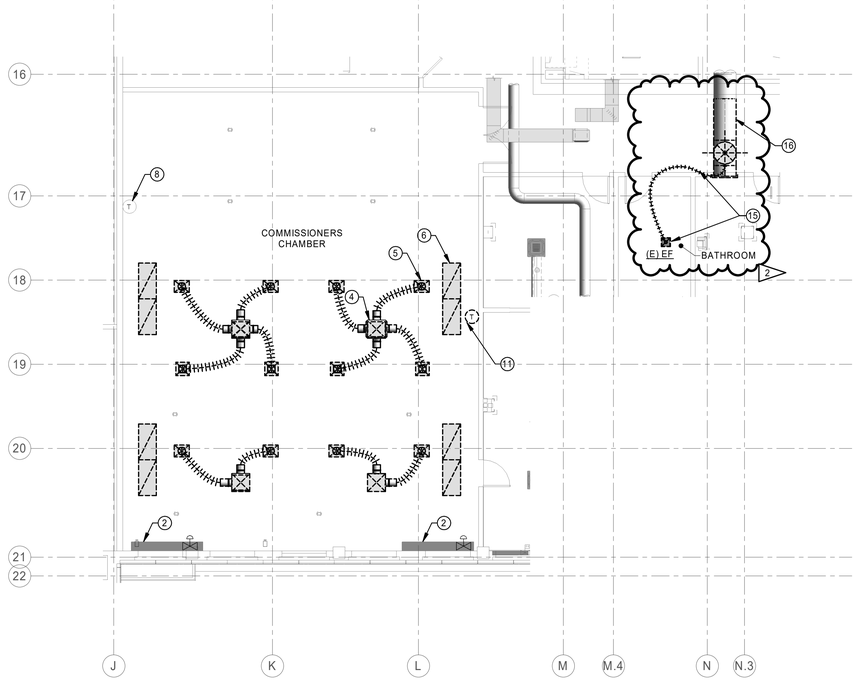
M001



1 M012 HVAC DEMO PLAN - 2ND FLOOR - NORTH

1/8" = 1'-0"

NORTH REF



2 M012 HVAC DEMO PLAN - 2ND FLOOR - SOUTH

1/8" = 1'-0"

NORTH REF

DEMO SHEET NOTES

1. REMOVE EXISTING CEILING SUPPLY AND RETURN REGISTERS AND ASSOCIATED DUCTWORK COMPLETE. COORDINATE CEILING PATCH AND REPAIR WITH GC.
2. EXISTING STEAM HEATING UNIT TO REMAIN, TYPICAL.
3. REMOVE CEILING HUNG AHU AND ALL ASSOCIATED PIPING AND ACCESSORIES. DEMO EXISTING DUCTWORK COMPLETE.
4. REMOVE EXISTING SUPPLY AND CONCENTRIC RETURN DUCT DROP COMPLETE, TYPICAL.
5. REMOVE EXISTING SUPPLY DIFFUSER, TYPICAL.
6. REMOVE EXISTING OPEN EGGCRATE RETURN GRILLE, TYPICAL.
7. NOT USED.
8. EXISTING HEATING T-STAT TO REMAIN.
9. REMOVE EXISTING PNEUMATIC MOTORIZED STEAM CONTROL VALVE.
10. EXISTING SUPPLY AIR GRILLES TO REMAIN. EXISTING CONCEALED SUPPLY DUCTWORK BETWEEN CEILING AND ROOF TO REMAIN. EXISTING RETURN AIR PATH TO BE MAINTAINED.
11. REMOVE EXISTING REMOTE TEMPERATURE SENSORS.
12. REMOVE EXISTING TIME CLOCK, THERMOSTATS, AND EXISTING PNEUMATIC AHU CONTROL PANEL. REMOVE ALL UNUSED PNEUMATIC CONTROL DEVICES, PLUG PNEUMATIC SUPPLY LINES AIRTIGHT.
13. REMOVE OA DUCT UP TO ROOFTOP LOUVERED PENTHOUSE.
14. REMOVE RELIEF DAMPER AND DUCT UP TO ROOF GOOSENECK.
15. REMOVE BATHROOM CEILING EXHAUST FAN AND 4" DUCT TO ROOF.
16. DEMO LARGE ROUND DUCT TO NORTH WALL.

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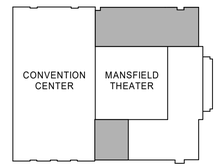
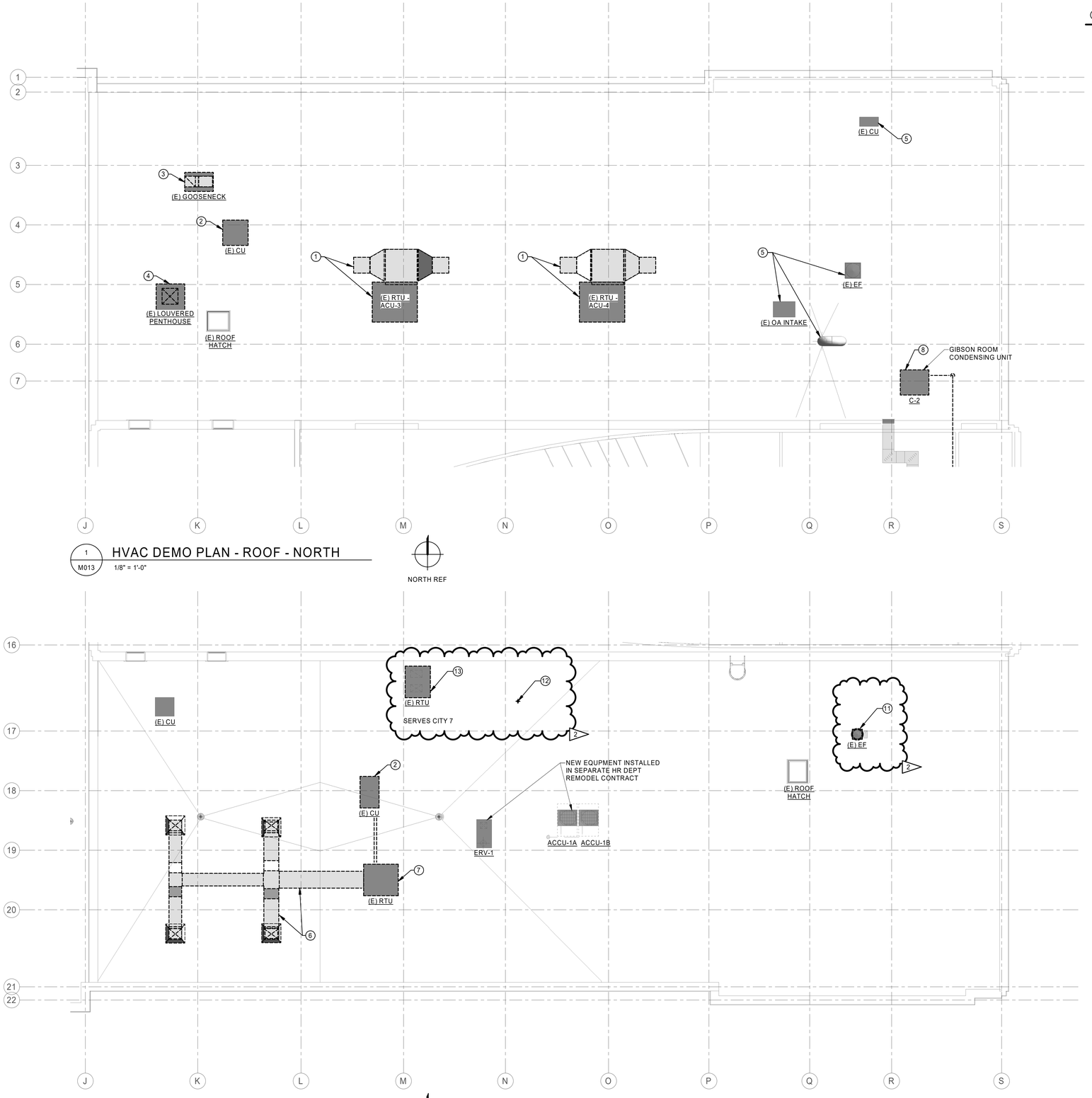
DRAWN BY | BLAKE
REVISIONS
1 11.04.2022 REV1



KEYPLAN

HVAC DEMO PLANS - 2ND FLOOR

M012



1 M013 HVAC DEMO PLAN - ROOF - NORTH
1/8" = 1'-0"

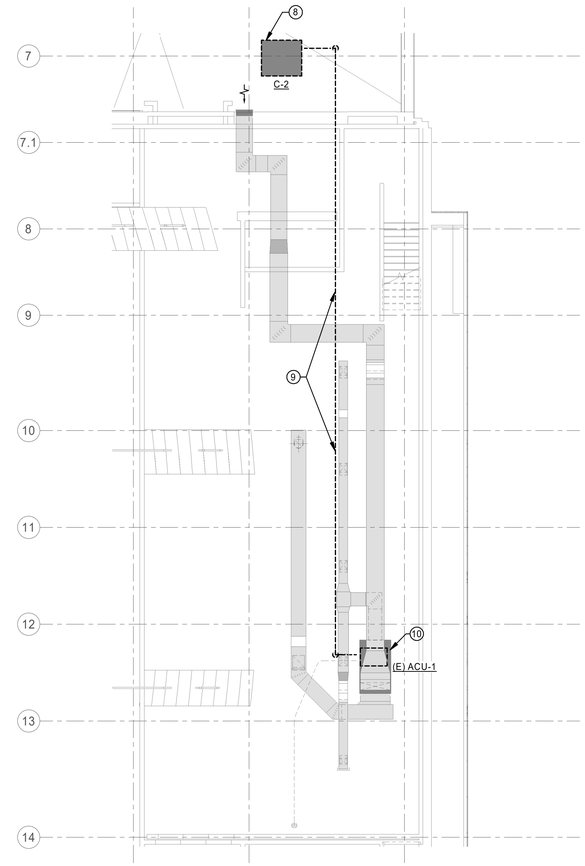
NORTH REF

2 M013 HVAC DEMO PLAN - ROOF - SOUTH
1/8" = 1'-0"

NORTH REF

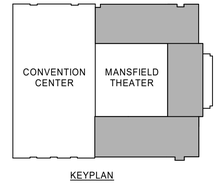
DEMO SHEET NOTES

1. REMOVE EXISTING ROOFTOP UNITS ACU-3 AND ACU-4, ASSOCIATED DUCTS, CONTROLS, PIPING, CURB AND SUPPORTS COMPLETE. PREPARE SUPPLY AND RETURN DUCT AT THE ROOF DECK LEVEL AND BELOW FOR RE-USE WITH NEW RTU'S PER REMODEL PLAN.
2. REMOVE EXISTING CONDENSING UNIT, CONTROLS, PIPING, AND CURB AND SUPPORTS COMPLETE. COORDINATE ROOF PATCH AND REPAIR WITH GC.
3. REMOVE EXISTING GOOSENECK.RE-USE EXISTING ROOF PENETRATION FOR NEW ERV 2-1.
4. REMOVE EXISTING LOUVER PENTHOUSE AND ASSOCIATED DUCTS, CONTROLS, CURB, AND SUPPORTS COMPLETE. COORDINATE ROOF PATCH AND REPAIR WITH GC.
5. EXISTING EQUIPMENT TO REMAIN.
6. REMOVE EXISTING OUTDOOR DUCTS COMPLETELY. PREPARE FOUR ROOF OPENINGS FOR NEW DUCTS PER REMODEL PLAN.
7. REMOVE EXISTING COOLING FAN UNIT COMPLETE. COORDINATE ROOF PATCH AND REPAIR WITH GC.
8. REMOVE EXISTING CONDENSING UNIT AND BASE CURB. REMOVE EXISTING REFRIGERANT PIPING.
9. REMOVE EXISTING REFRIGERANT PIPING, PREP FOR NEW REFRIGERANT PIPING IN SAME LOCATION FOR NEW R410A CONDENSING UNIT.
10. REMOVE EXISTING AIR HANDLER EVAPORATOR COIL, PREP UNIT FOR NEW COIL INSTALLATION.
11. REMOVE EXISTING EXHAUST FAN. PREP CURB AND DUCTS FOR NEW EXHAUST FAN.
12. REMOVE EXHAUST FLUE VENT COMPLETELY. COORDINATE ROOF PATCH AND REPAIR WITH GC.
13. REMOVE EXISTING 3-TON COOLING ONLY RTU. PREP CURB AND DUCTS FOR NEW UNIT.



4 M013 HVAC DEMO PLAN - GIBSON ROOM AHU
1/8" = 1'-0"

NORTH REF



KEYPLAN

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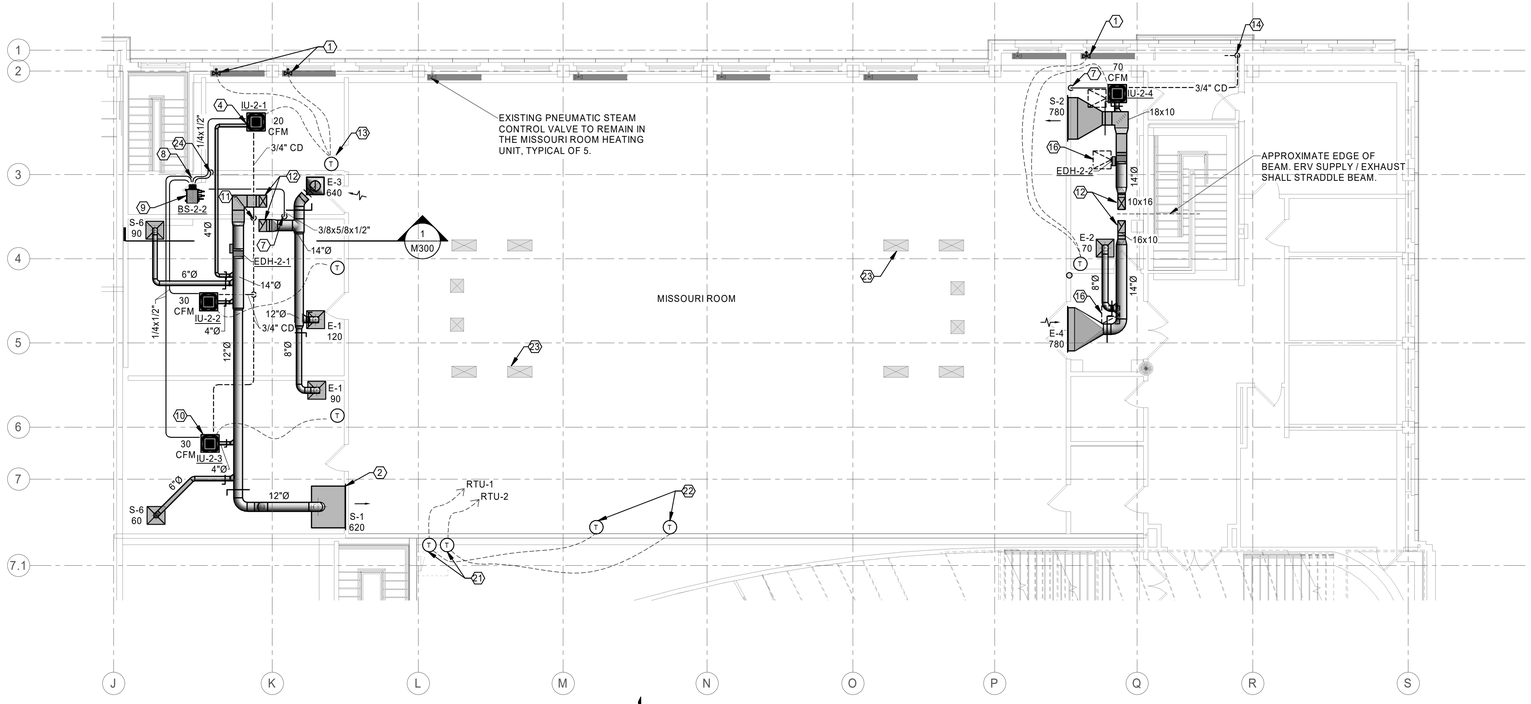
HVAC DEMO PLANS - ROOF

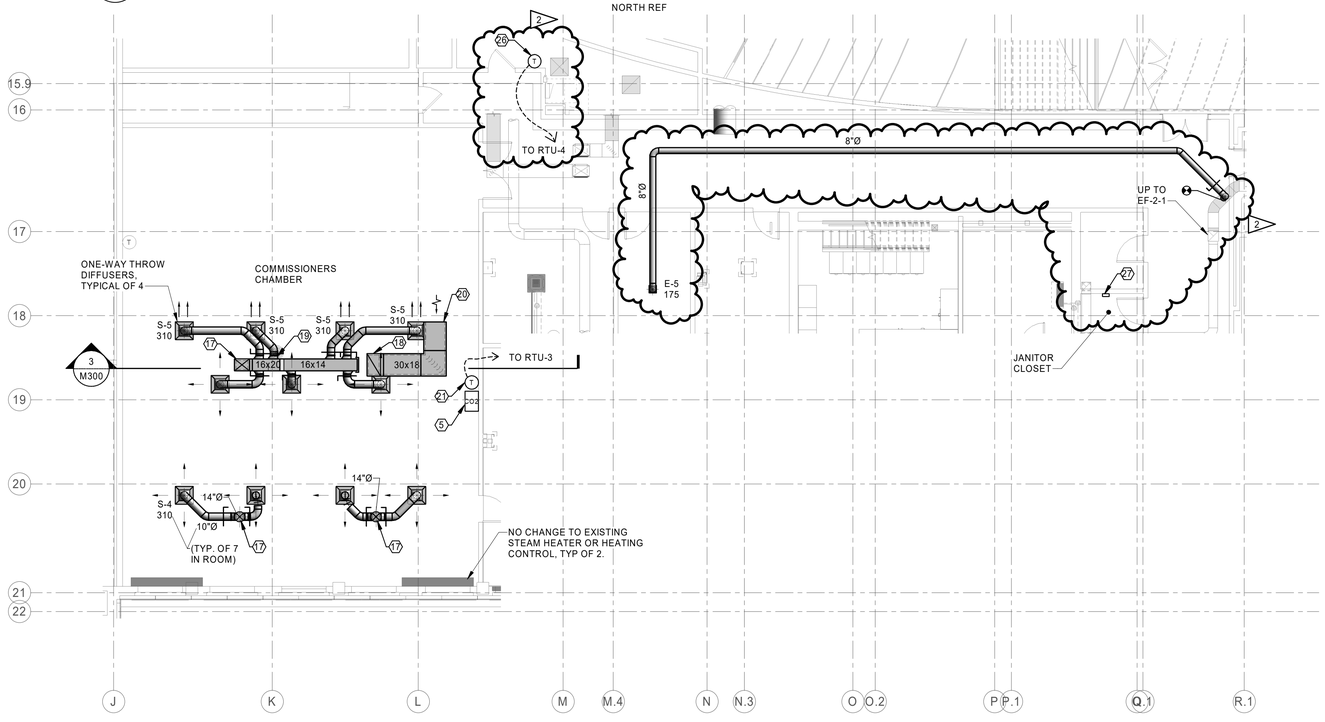
M013



1 M102 HVAC REMODEL PLAN - 2ND FLOOR - NORTH

1/8" = 1'-0"

NORTH REF



2 M102 HVAC REMODEL PLAN - 2ND FLOOR - SOUTH

1/8" = 1'-0"

NORTH REF

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SHEET NOTES

1. EXISTING STEAM HEAT CONVECTOR TO REMAIN. REPLACE EXISTING PNEUMATIC STEAM CONTROL VALVE WITH NEW 24 VOLT TWO-POSITION MOTORIZED VALVE. VALVE FURNISHED BY TC, INSTALLED BY MC. SEE CONTROLS DIAGRAMS / SEQUENCE OF OPERATION ON M500.
2. SUPPLY AND EXHAUST LINEAR SLOT REGISTERS MOUNTED HIGH ON SIDE WALL ABOVE 11' WOOD TRIM. TYPICAL OF 3.
3. NOT USED.
4. INSTALL CASSETTE STYLE VRV INDOOR FAN UNIT, SEE DETAIL 2/M400. DUCT FRESH AIR TO CEILING CASSETTE AND BALANCE TO CFM'S INDICATED, TYPICAL OF 4.
5. CO2 SENSOR FURNISH BY MC, INSTALL BY TC, SEE M500 SEQUENCE.
6. NOT USED.
7. REFRIGERANT PIPING UP FROM BASEMENT PLENUM.
8. REFRIGERANT PIPING TO EACH INDOOR UNIT, SEE REFRIGERANT PIPING DIAGRAM 1/M400 FOR ADDITIONAL DETAILS.
9. INSTALL BRANCH SELECTOR BOX ABOVE CEILING. SEE DETAIL 3/M400.
10. LIFT CONDENSATE WITH INTEGRAL PUMP AT UNIT, SEE DETAIL 9/M400. SEE INDOOR UNIT SCHEDULE FOR UNITS THAT REQUIRE CONDENSATE PUMP.
11. ROUTE 3/4" CONDENSATE DRAIN PIPE TO WALL AND DOWN TO 1ST FLOOR PLENUM, TYPICAL OF 3 UNITS. SEE 1/M101 PIPING PLANS FOR CONTINUATION OF CONDENSATE PIPING.
12. NEW 16x10" SUPPLY AND EXHAUST UP THROUGH ROOF. CONNECT LONG STRAIGHT SECTION OF DUCT MINIMUM OF 5x THE DUCT WIDTH FROM SUPPLY FAN OUTLET BEFORE ELBOW TO THE HORIZONTAL.
13. NEW VRV WIRED WALL CONTROLLER BRC1E73 WIRED WALL CONTROLLER, OR EQUAL, TYPICAL.
14. CONDENSATE DRAIN ROUTED ABOVE PASSAGE CEILING AND DOWN FAR ROOM CORNER TO SINK TAILPIECE.
15. NOT USED.
16. NEW ACCESS HATCH BY GC IN NEW CEILING. COORDINATE FINAL LOCATION FOR BEST HVAC EQ. ACCESS, TYPICAL.
17. NEW SUPPLY AIR DROP IN EXISTING ROOF OPENING.
18. NEW RETURN DUCT DROP IN EXISTING ROOF OPENING. LINE DUCT WITH ACOUSTICAL DUCT LINER WHEN SHOWN ON PLAN. DUCT DIMENSION INDICATED IS CLEAR TO INSIDE OF LINER.
19. HIGH EFFICIENCY TAKE OFF IN HORIZONTAL, SEE DUCT SECTION 3/M300.
20. LEAVE RETURN DUCT OPEN BUT HIDDEN ABOVE NEW FLOATING "CLOUD" TYPE CEILING.
21. NEW THERMOSTAT, FURNISH BY MC, INSTALL BY TC.
22. NEW REMOTE ROOM SENSOR FURNISH BY MC, INSTALL BY TC.
23. RE-USE EXISTING SUPPLY DIFFUSERS, TYPICAL. LEAVE EXISTING PROPORTIONING AS IS, BALANCE SYSTEM AIRFLOW AT THE FAN.
24. REFRIGERANT PIPING DOWN TO IU-2-5 ON FIRST FLOOR. SEE 1/M101 FOR CONTINUATION.
25. CONNECT TO EXISTING EXHAUST DUCT. RUN NEW DUCT ABOVE EXISTING PLASTER CEILING SPACE ACCESSIBLE FROM ROOF HATCH LADDER.
26. NEW THERMOSTAT IN CITY-7 COMPUTER ROOM.
27. MC TO PROVIDE TORK E103B (OR SIMILAR) 1-CHANNEL ELECTRONIC SPST TIMER W/ ASTRONOMICAL TIME CLOCK FOR EF-2-1 CONTROLS. COORDINATE IDEAL LOCATION OF TIMER CLOCK WITH EC.

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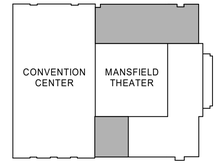
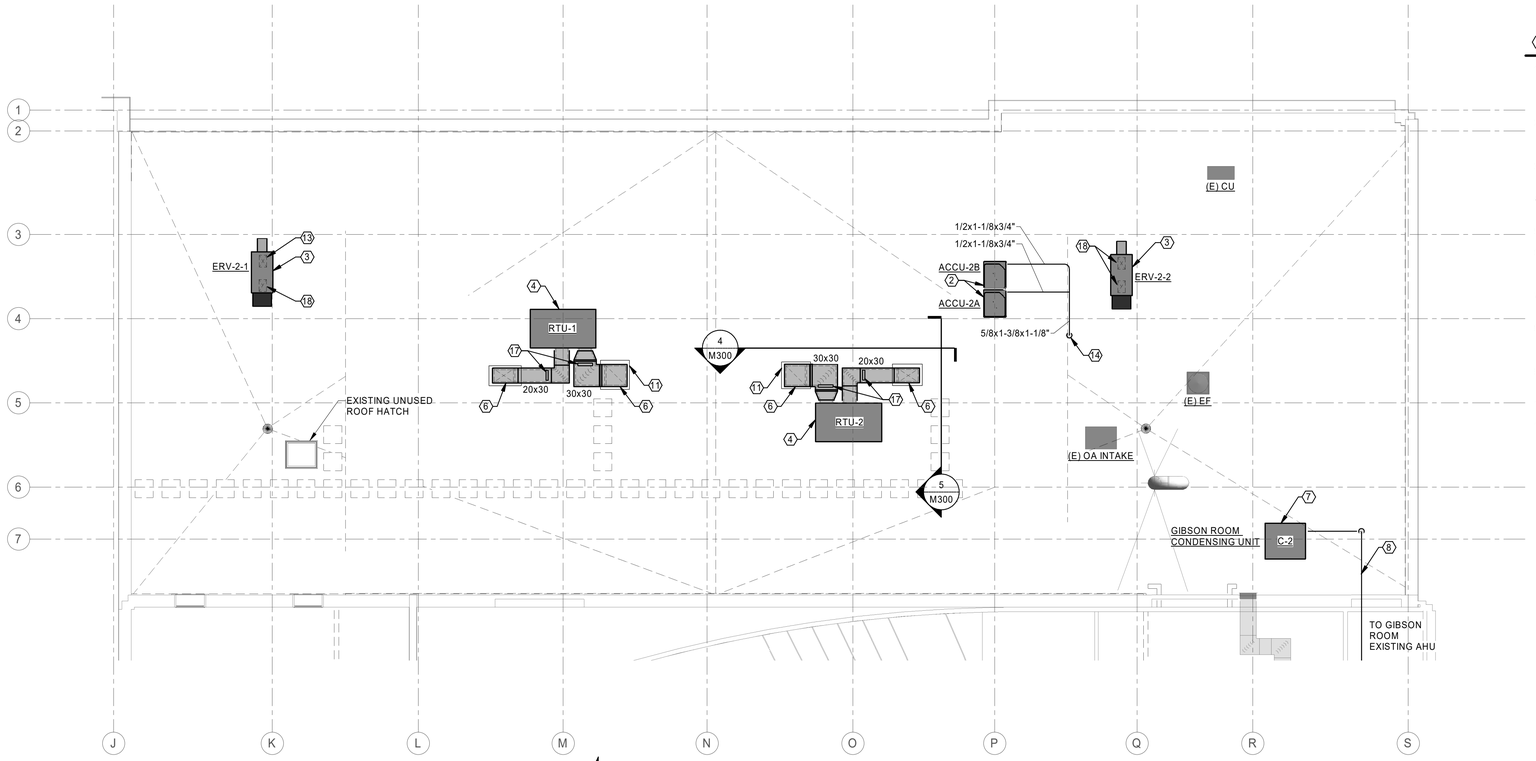


KEYPLAN

HVAC REMODEL PLANS - 2ND FLOOR

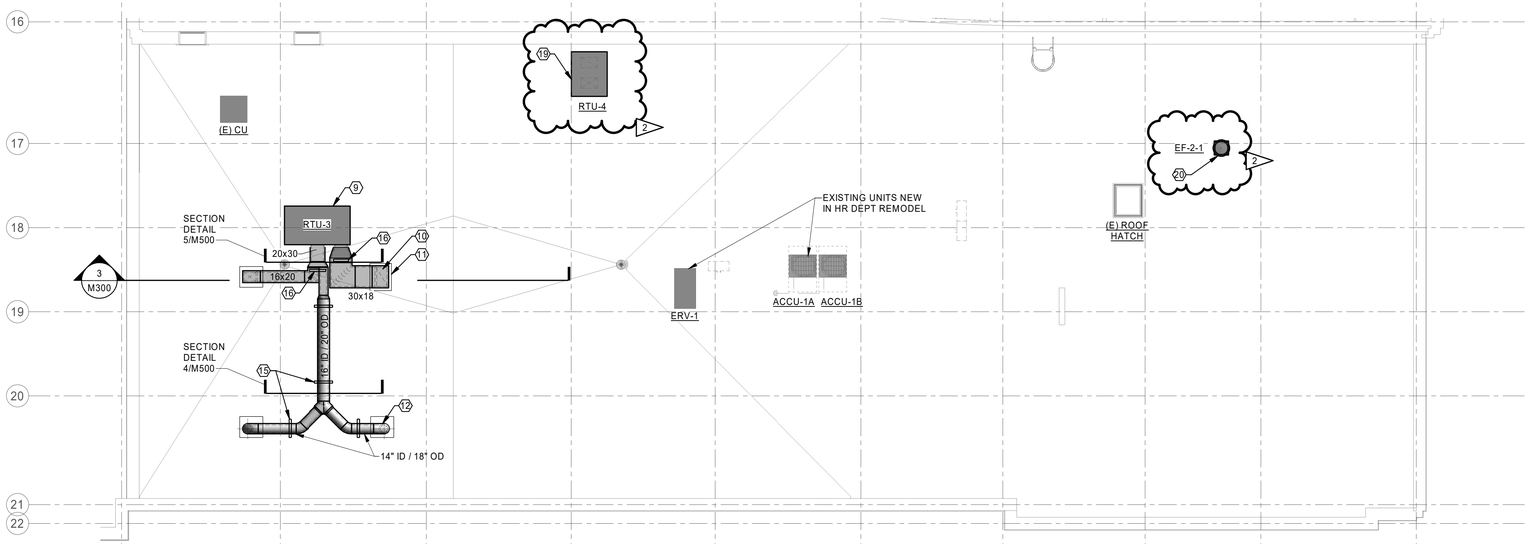
M102



1 M103 HVAC REMODEL PLAN - ROOF - NORTH

1/8" = 1'-0"

NORTH REF



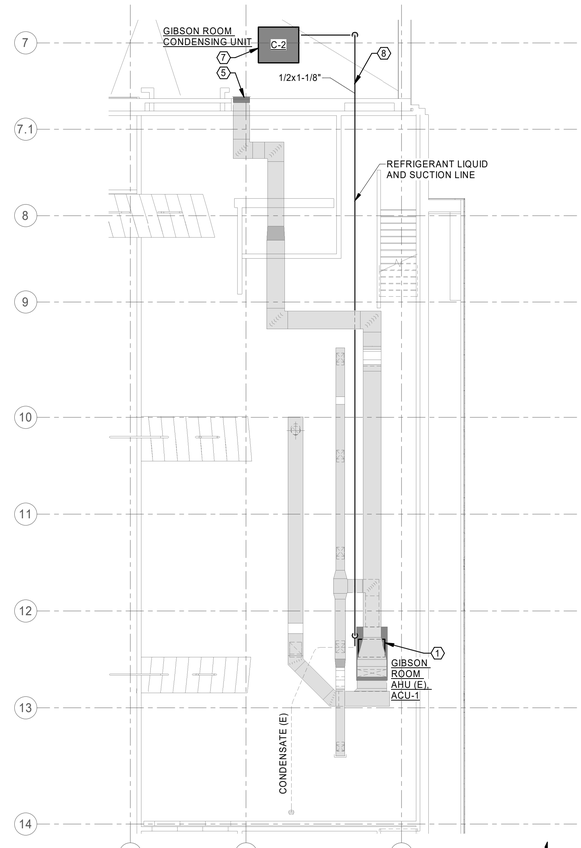
2 M103 HVAC REMODEL PLAN - ROOF - SOUTH

1/8" = 1'-0"

NORTH REF

SHEET NOTES

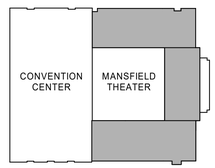
1. REMOVE EXISTING R-22 EVAP. COIL AND REPLACE WITH NEW SIZE MATCHED R-410A COIL. PROVIDE ALL NEW REFRIGERANTE PIPE ASSEMBLY AND ACCESSORIES, SEE REFER PIPING DIAGRAM 10/M400.
2. NEW AIRSOURCE VRV CENTRAL HEAT PUMP OUTDOOR UNIT. INSTALL ON ELEVATED CURB PER MFR INSTALLATION INSTRUCTIONS.
3. NEW ENERGY RECOVERY VENTILATOR ON ROOF CURB. SEE DETAIL 5/M400 & 7/M400.
4. NEW COOLING ONLY ROOFTOP UNIT, SEE DETAIL 7/M400 FOR CURB INSTALLATION.
5. EXISTING GIBSON ROOM AIR INTAKE LOUVER REMAINS.
6. REUSE EXISTING SA AND RA ROOF PENETRATIONS AND CONNECT TO EXISTING SA AND RA DUCTS AT OR JUST BELOW THE ROOF DECK. SEE DUCT SECTIONS 4,5/M300.
7. NEW CONDENSING UNIT ON NEW BASE CURB. SEE DETAIL 5/M400.
8. NEW REFRIGERANT LIQUID AND SUCTION LINES. INSULATE PER SPECS. FOLLOW ROUTE OF REMOVED PIPING. SEE REGRIGERANT PIPING DIAGRAM 10/M400.
9. NEW DX COOL / ELECTRIC HEAT ROOFTOP UNIT. SEE DETAIL 7/M400 FOR CURB INSTALLATION.
10. RETURN DOWN THRU EXISTING ROOF OPENING.
11. NEW FRAMED "DOGHOUSE" LOCATION. DOGHOUSE BY GC FOR WEATHERPROOFING OF DUCT THRU ROOF, TYPICAL. SEE SECTION 3/M300.
12. SUPPLY DUCT DOWN THRU EXISTING ROOF OPENING TYPICAL OF 3.
13. REUSE EXISTING ROOF OPENING FROM DEMOLISHED GOOSENECK.
14. NEW PIPE PENETRATIONS DOWN THROUGH ROOF. SEE DETAIL 6/M400 FOR INSTALLATION DETAILS.
15. FABRICATE EXTERIOR DUCT AND SUPPORT SYSTEM PER DETAIL 4/M500, AT FOUR LOCATIONS, TYP.
16. FABRICATE EXTERIOR DUCT AND SUPPORT SYSTEM PER DETAIL 5/M500, PROVIDE UNDER DUCT.
17. BUILD EXTERIOR DUCT AS DRAWN IN DETAIL 5/M500. PROVIDE PEDESTAL SUPPORT SIMILAR TO DETAIL 5/M500.
18. NEW DUCT PENETRATION FOR 16x10 DUCT THRU CONCRETE ROOF DECK. FIELD VERIFY NEW PENETRATION IS THRU DECK ONLY, DO NOT DRILL OR CUT ANY CONCRETE BEAMS OR RIBS ON UNDERSIDE OF ROOF DECK. CONCRETE RIBS RUN NORTH TO SOUTH, ARE 16" ON CENTER, 4" THICK, WITH 12" OF CLEAR SPACE INBETWEEN.
19. NEW ROOFTOP UNIT SERVING CITY-7 COMPUTER ROOM. MOUNT ON EXISTING CURB. CONNECT TO EXISTING SUPPLY / RETURN DUCTS. COORDINATE PATCH AND REPAIR OF ROOF AND FLASHING WITH GC.
20. NEW EXHAUST FAN. MOUNT ON EXISTING CURB. COORDINATE PATCH AND REPAIR OF ROOF AND FLASHING WITH GC.



4 M103 HVAC REMODEL PLAN - GIBSON ROOM AHU

1/8" = 1'-0"

NORTH REF



KEYPLAN

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10.24.2022
PROJECT# | CITYGFCC_RTU
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DRAWN BY | BLAKE
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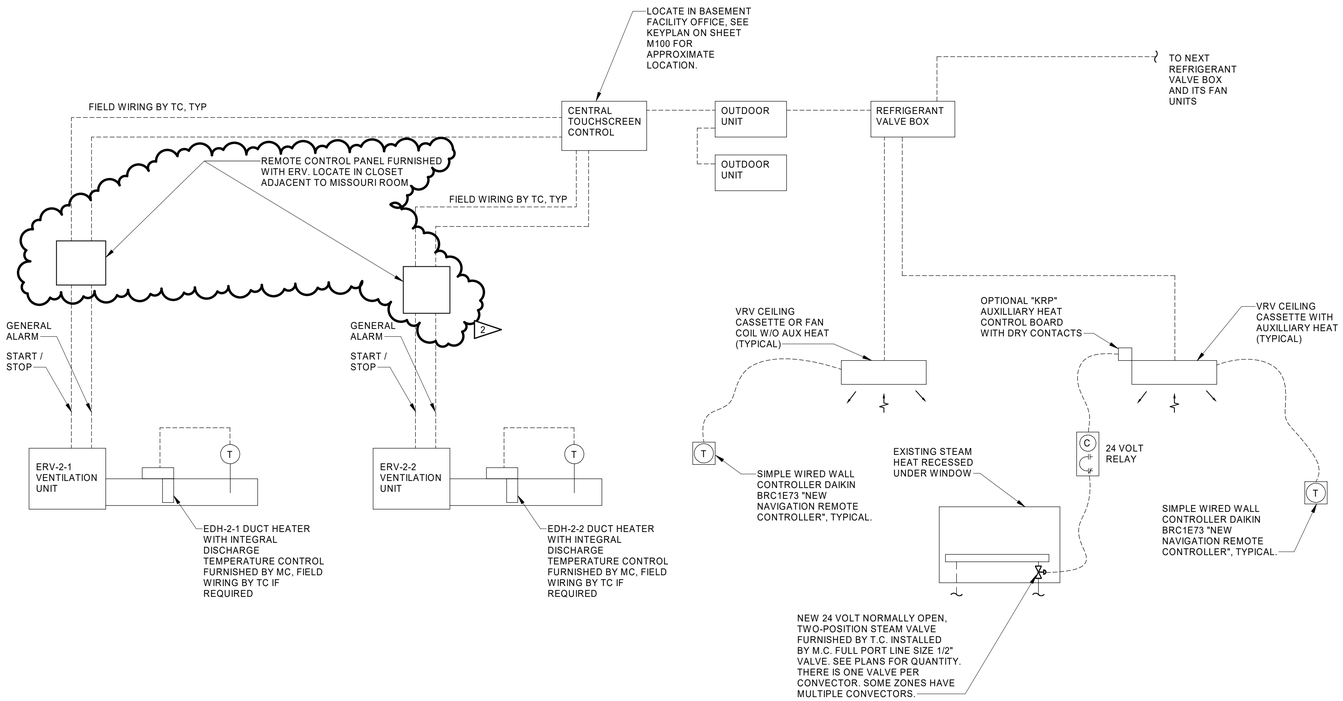
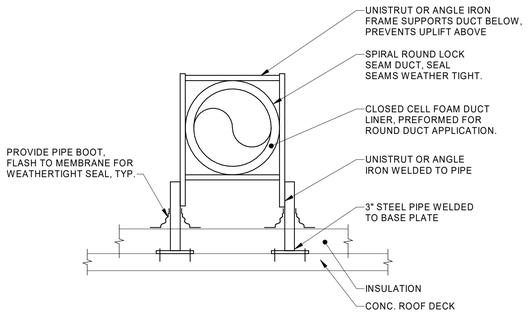
HVAC REMODEL PLANS - ROOF

M103



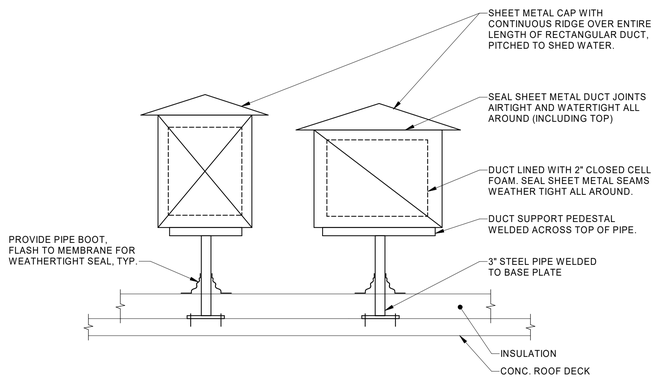
1 M500 CONTROL SCHEMATIC DIAGRAM

1/8" = 1'-0"



4 M500 EXTERIOR ROUND DUCT INSTALL DETAIL

NOT TO SCALE



5 M500 EXTERIOR RECTANGULAR DUCT INSTALL DETAIL

NOT TO SCALE

TEMPERATURE CONTROLS NOTES:

THERE IS NO EXISTING DDC SYSTEM IN THIS BUILDING. THE BASIS OF DESIGN VRF SYSTEM SHALL INCLUDE A CENTRALIZED TOUCH SCREEN CONTROLLER. BECAUSE OF THE AMOUNT OF LOW VOLTAGE CONTROLS WIRING AND TERMINATIONS AND INTEGRATION OF THE CENTRAL CONTROLLER WITH THE PACKAGED ERV CONTROL, AS WELL AS RTU THERMOSTATS, REMOTE TEMP SENSORS AND CO2 SENSOR, THE SERVICES OF A TEMPERATURE CONTROLS SUB-CONTRACTOR SHALL BE ENGAGED.

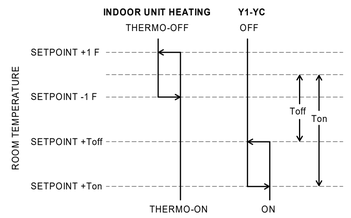
THE T.C. IS RESPONSIBLE FOR ROUGH-IN OF WALL BOX AND CONDUIT UP TO THE CEILING, AT WHICH POINT PLENUM RATED CABLE MAY BE RUN EXPOSED AND HUNG NEATLY ON J HOOKS. CONTROL WIRING SHALL BE CONCEALED IN WALL OR CEILING. IN SELECT LOCATIONS WHERE PERMITTED BY OWNER AND ARCHITECT, TC MAY INSTALL IN SURFACE WIREMOLD PAINTED TO MATCH EXISTING SURFACE.

SEQUENCE OF OPERATION:

CENTRAL TOUCHSCREEN CONTROLLER SHALL BE THE FACILITY MANAGER INTERFACE WITH THE VRV SYSTEM AND ITS ZONES. PROGRAM OCCUPIED / UNOCCUPIED SCHEDULE FOR EACH DEPARTMENT SERVED BY THE SYSTEM. PROGRAM A VENTILATION SCHEDULE TO ENABLE / DISABLE THE VENTILATION UNITS ERV-2-1 & 2-2 AS WELL AS A GENERAL VENTILATION ERV-2-1 & 2-2 UNIT ALARM. UNOCCUPIED HEATING SETBACK TEMPERATURE SHALL BE 12 DEGREES. UNOCCUPIED COOLING SETUP TEMPERATURE SHALL BE 6 DEGREES.

NEW AIR SOURCE VRV HEAT PUMP SYSTEM SHALL BE THE ONLY SOURCE OF COOLING FOR THE SPACE AND SHALL BE THE 1ST STAGE OF HEATING. EACH INDOOR FAN UNIT ZONE SHALL AUTOMATICALLY CHANGEOVER BETWEEN HEATING AND COOLING, AND EACH ZONE SHALL HAVE THE ABILITY TO HEAT OR COOL AT ANY TIME.

AUXILLIARY HEATING (FOR ZONES IU 2-1 & IU 2-4 ONLY): EXISTING STEAM CONVECTION HEATING UNITS SHALL BE 2ND STAGE OF HEATING. STEAM HEAT VALVE SHALL BE CLOSED UNTIL THE ROOM TEMPERATURE DROPS TO THE AUX HEAT TURNON TEMPERATURE DIFFERENTIAL SETPOINT Ton. THIS SETPOINT IS THE DIFFERENTIAL DEG F BELOW WHICH THE ROOM TEMPERATURE DROPS TO OPEN THE VALVE. STEAM VALVE SHALL BE OPEN UNTIL ROOM TEMPERATURE RISES TO Toff. Ton IS ADJUSTABLE, INITIALLY SET TO 5 DEG F. THE DIFFERENTIAL BETWEEN Ton AND Toff IS FIXED AT 3.6 DEG F THOUGH ADJUSTABILITY IS ACCEPTABLE.



ERV-2-1 & 2-2, EDH 2-1 & 2-2

SUPPLY FAN AND EXHAUST FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED TIMES PER AN OCCUPANCY SCHEDULE IN THE CENTRAL TOUCHSCREEN CONTROLLER. UPON ERV ENABLE, THE INTERNAL CONTROLS OF THE ERV SHALL OPEN THE FACTORY WIRED SUPPLY DAMPER AND EXHAUST DAMPER, AND START THE SUPPLY AND EXHAUST FANS. THE INTERNAL ERV CONTROL USES TIMED DEFROST WHICH INTERUPTS SUPPLY FAN FOR UP TO 5 MINUTES AT A TIME TO PREVENT FROSTING. THE INTEGRAL DISHCHARGE TEMPERATURE CONTROL OF THE REMOTE DUCT HEATER EDH-1 SHALL MODULATE THE SCR ELECTRIC HEAT TO MAINTAIN DISCHARGE AIR TEMPERATURE AT SETPOINT OF 68 DEG F (ADJUSTABLE).

RTU-1 AND RTU-2 - MISSOUR ROOM

UNIT SERVICE IS FOR COOLING ONLY. UNIT SHALL RUN VIA 7-DAY PROGREAMMABLE THERMOSTAT. DURING OCCUPIED RUN THE SUPPLY FAN CONTINUOUSLY AND STAGE THE TWO UN-EQUAL SIZED COMPRESSORS TO MAINTAIN ROOM TEMPERATURE. UTILIZE ECONOMIZER COOLING WHENEVER OUTDOOR AIR CONDITIONS ALLOW. A DISCHARGE LOW LIMIT SHALL SHUT OF FAN IF DISCHARGE IS BELOW 35 DEGREES. DURING UNOCCUPIED CYCLE THE SUPPLY FAN ON LOAD AND STAGE COMPRESSORS TO MAINTAIN UNOCCUPIED ROOM SETPOINT. ECONOMIZER COOLING IS ALLOWED.

TC SHALL WIRE THE THERMOSTATS TO THE UNITS AND THE REMOTE TEMPERATURE SENSOR TO THE THERMOSTAT

RTU-3 - COMMISIONERS CHAMBERS

UNIT SERVICE IS FOR COOLING AND VENTILATION. UNIT ELECTRIC HEAT IS TO TEMPER SUPPLY AIR DURING OCCUPANCY BUT IS NOT INTENDED AS THE MAIN HEAT FOR THE SPACE (EXISTING UNITS UNDER THE WINDOWS ARE THE MAIN HEAT)

DURING OCCUPIED RUN THE SUPPLY FAN CONTINUOUSLY AND STAGE THE TWO UNEQUAL SIZED COMPRESSOR TO MAINTAIN ROOM COOLING SETPOINT. VARY THE OUTSIDE AIR BETWEEN 0 CFM AND MAX OF THE 875 CFM VENT CFM SCHEDULED IN THE RTU SCHEDULE TO MAINTAIN THE ROOM CO2 LEVEL BELOW 1000 PPM. UTILIZE ECONOMIZER COOLING WHENEVER OUTDOOR AIR CONDITIONS ALLOW.

DURING OCCUPIED HEATING, STAGE THE ELECTRIC HEAT TO MAINTAIN THE ROOM SETPOINT.

DURIN UNOCCUPIED HEATING KEEP THE FRESH AIR DAMPER CLOSED AND CYCLE THE FAN ON LOAD. STAGE THE COMPRESSORS OR THE HEAT TO MAINTIAN UNOCCUPIED ROOM SETPOINT.

TC SHALL WIRE THE THERMOSTAT AND THE REMOTE WALL CO2 SENSOR.

CU-2 AND ACU-1:

TC SHALL REINSTALL EXISTING CONTROLS TO CONTROL THE NEW CONDENSING UNIT IN THE SAME MANNER AS THE EXISTING CU-2 IS CONTROLLED FOR THE GIBSON ROOM.

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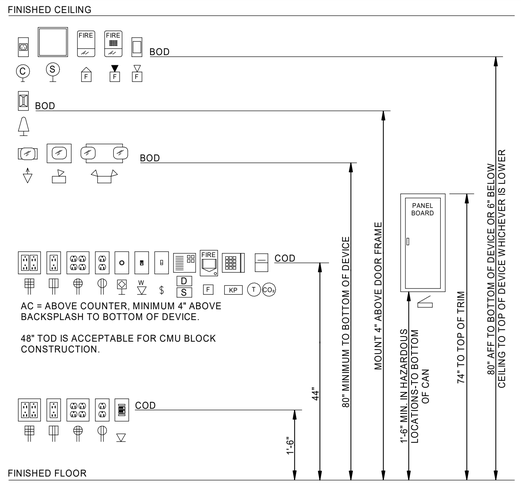
TC DIAGRAMS & DETAILS

M500

INTERIOR BOX MOUNTING HEIGHTS



ELECTRICAL LEGEND

SYMBOLS APPLY ONLY WHEN USED ON DRAWINGS

LIGHTING

SYMBOL	DESCRIPTION
	LAY-IN OR RECESSED FIXTURE, SIZE ON PLANS
	SURFACE MOUNTED COVE FIXTURE, SIZE ON PLANS
	SHADED FIXTURE INDICATES FIXTURE IS UNSWITCHED AND ALSO INDICATES EMERGENCY POWER.
	CEILING MOUNTED, WALL MOUNTED EXIT LIGHT (W/ DIRECTIONAL ARROWS)

COMMUNICATIONS

SYMBOL	DESCRIPTION
	CATV JACK, WALL MOUNTED
CH	CATV JACK CEILING MOUNTED
	MICROPHONE OUTLET
	SPEAKER, SPEAKER WALL MOUNTED
	CLOCK HANGER RECEPTACLE
	VOICE/DATA JACK # NUMERICAL SUBSCRIPT INDICATES NUMBER OF CABLES/JACKS, NO SUBSCRIPT ASSUMES TWO CABLES/JACKS W WALL MOUNT TELEPHONE READY JACK WAP WIRELESS ACCESS POINT
	VOICE/DATA JACK MOUNTED IN FLOORBOX # NUMERICAL SUBSCRIPT INDICATES NUMBER OF CABLES/JACKS, NO SUBSCRIPT INDICATES TWO CABLES/JACKS
	EXISTING VOICE/DATA JACK
	DATA RACK

ABBREVIATIONS AND MISCELLANEOUS

SYMBOL	DESCRIPTION
AC	ABOVE COUNTER, 4" BACK SPLASH
ATS	AUTOMATIC TRANSFER SWITCH
AFG	ABOVE FINISHED GRADE
AFF	ABOVE FINISHED FLOOR
BLG	BELOW GRADE
BOD	BOTTOM OF DEVICE
C	CONDUIT
CAS	CARD ACCESS SYSTEM
CCTV	CLOSED CIRCUIT TV
CLG	CEILING
COD	CENTER OF DEVICE
CU	COPPER
(E)	EXISTING
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
GC	GENERAL CONTRACTOR
GND	GROUND
LSI	FIELD ADJUSTABLE LONG TIME, SHORT TIME AND INSTANTANEOUS
LSIG	FIELD ADJUSTABLE LONG TIME, SHORT TIME, INSTANTANEOUS AND GROUND FAULT
MC	MECHANICAL CONTRACTOR
(N)	NEW
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
W/	WITH
WP	WEATHER PROOF (WHILE IN USE)
a,b,c etc	SWITCH DESIGNATION
BN1L-2,4,6	CIRCUIT DESIGNATION, PANEL BN1L, CIRCUITS 2,4,6
1/E501	INDICATES DETAIL 1 ON SHEET E501
(#)	SHEET WORK NOTE
(#)	SHEET DEMO WORK NOTE
	HOME RUN TO PANEL
	CONDUIT CONCEALED IN CEILING OR WALL
	CONDUIT CONCEALED UNDER FLOOR
///	CIRCUIT, NUMBER OF HASH MARKS INDICATES NUMBER OF CONDUCTORS IN CABLE/RACEWAY. GROUND WIRE IS NOT SHOWN BUT SHALL BE INCLUDED. NO HASH MARKS INDICATES 2 CONDUCTORS PLUS GROUND.

SURVEILLANCE SYSTEM

SYMBOL	DESCRIPTION
	CAMERA, CEILING AND WALL MOUNTED DOME, PTZ
	CAMERA, CEILING AND WALL MOUNTED DOME, FIXED
	CAMERA, CEILING MOUNTED, 360 DEGREE
	CAMERA
	MOUNT, VIDEO RECORDER
SPS	SURVEILLANCE POWER SUPPLY
M	MONITOR

DEVICES AND POWER

SYMBOL	DESCRIPTION
$	SWITCH - SPST 2 SINGLE POLE, DOUBLE THROW 3 THREEWAY 4 FOURWAY K KEY OPERATED P PILOT LIGHT WP WEATHERPROOF OS OCCUPANCY SENSOR D DIMMER MC SPOT-MOMENTARY CONTACT LV LOW VOLTAGE T TIMER SWITCH TS TEST SWITCH
OS	OCCUPANCY SENSOR (CEILING) - SUBSCRIPT IS TYPE
	RECEPTACLE - DUPLEX GFI RECEPTACLE - DUPLEX (GROUND FAULT INTERRUPT) USB DEVICE RECEPT W/2 USB PORTS DC DROP CORD WP WEATHERPROOF COVER & WEATHER RESISTANT RECEPTACLE TR TAMPER RESISTANT S SURGE PROTECTED IG ISOLATED GROUND FILLED CENTER INDICATES HOSPITAL GRADE EMERGENCY RECEPTACLE
J	J-BOX - BOX INDICATES FLOOR MOUNTING -4"X4"X2-1/8" DEEP UNLESS OTHERWISE NOTED
T	THERMOSTAT/TEMPERATURE SENSOR BY MC OR TC, J-BOX AND CONDUIT TO CEILING BY EC
CO	CARBON MONOXIDE DETECTOR BY MC, J-BOX & CONDUIT TO CEILING BY EC
$M	MANUAL MOTOR DISCONNECT/STARTER SWITCH
	SPECIAL PURPOSE CONNECTION - BOX INDICATES FLOOR MOUNTING - WORK AS NOTED
	ELECTRIC MOTOR CONNECTION
	DISCONNECT SWITCH
	CIRCUIT BREAKER
	EXISTING PANELBOARD, SURFACE MOUNTED
	EXISTING PANELBOARD, FLUSH MOUNTED
	PANELBOARD, SURFACE MOUNTED
	PANELBOARD, FLUSH MOUNTED
or	ELECTRIC METER, BUILDING MOUNTED
	TRANSFORMER, INTERIOR
	TRANSFORMER, EXTERIOR

ELECTRICAL SHEET INDEX

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MONTANA
JEFFREY LYNN HAIDLE
No. 11561 PE
LICENSED PROFESSIONAL ENGINEER

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2 11.10.2022 Addendum 2

LEGENDS

E001

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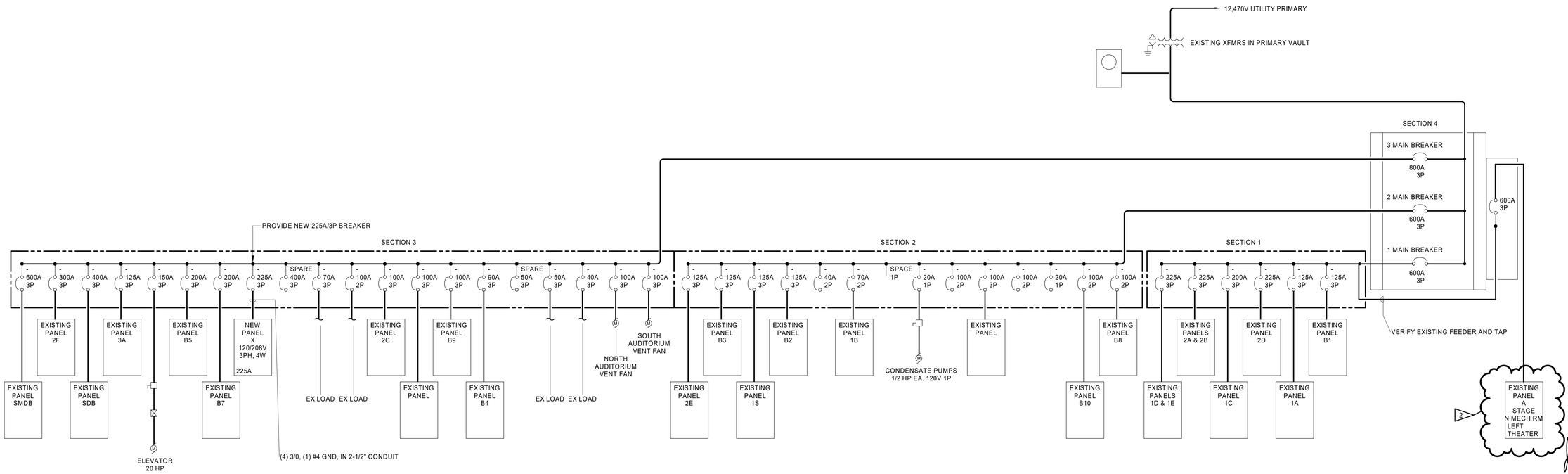

1 E003 REMODEL ONE LINE DIAGRAM - ALL COMPONENTS EXISTING SANS PANEL X AND BREAKER

NOT TO SCALE

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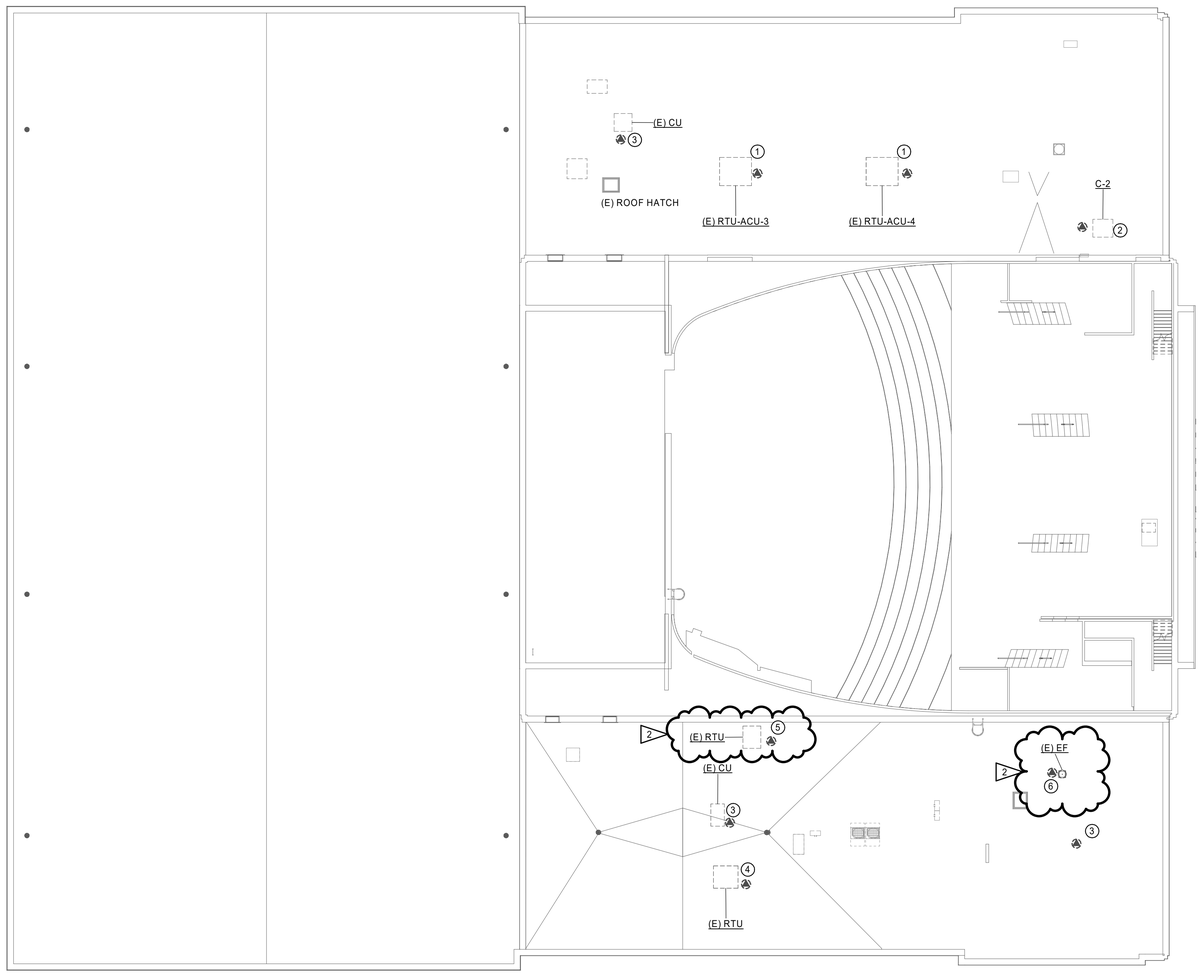
ONE LINE

E003



1 E100 ELEC ROOF PLAN DEMO

1/16" = 1'-0"

GENERAL DEMOLITION NOTES

A. ELECTRICAL WORK IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. PATCHING AND PAINTING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

B. DISCONNECT ALL ELECTRICAL ITEMS WHICH ARE TO BE REMOVED AND/OR RELOCATED WHILE MAINTAINING CONTINUITY OF REMAINING CIRCUITRY.

C. PROVIDE NEW CONDUCTORS, RACEWAYS, ETC., AS REQUIRED TO MAINTAIN OPERATION OF EXISTING OUTLETS, EQUIPMENT, ETC. WHICH REMAIN OR ARE RELOCATED.

D. NO EXISTING WIRING MAY BE REUSED IN THE NEW ELECTRICAL WORK UNLESS OTHERWISE NOTED.

E. ALL EXISTING CIRCUITS, CONDUIT AND WIRE THAT ARE NOT IN USE AFTER DEMOLITION IS COMPLETED SHALL BE REMOVED.

F. EXISTING CONDUITS IN THE FLOOR WHICH ARE NOT USED AND WHICH ARE ABANDONED SHALL BE TRIMMED TO FLOOR SURFACE, GROUND FLUSH AND FILLED WITH GROUT. FINISH FLOOR TO MATCH EXISTING.

G. WORK SHALL BE PERFORMED WITH NO DISRUPTION OF THE OWNER'S BUSINESS. ALL ELECTRICAL POWER DISRUPTIONS SHALL BE SCHEDULED AND APPROVED BY THE OWNER.

H. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH NEC, STATE AND LOCAL BUILDING CODE.

I. ALL DASHED ITEMS ON DEMOLITION PLANS ARE TO BE REMOVED UNLESS NOTED OTHERWISE. SOLID ITEMS ARE TO REMAIN OR TO BE RELOCATED AS NOTED. NOTE - ITEMS SHOWN IN THE DEMOLITION PLANS ARE BASED ON FIELD OBSERVATIONS. ADDITIONAL ELECTRICAL ITEMS MAY BE ENCOUNTERED THAT ARE NOT SHOWN - ALL GENERAL ELECTRICAL ITEMS ARE TO BE REMOVED THAT ARE NOT SHOWN, BUT ARE IN AREAS OF COMPLETE REMODEL.

KEYNOTES

1. ELECTRICALLY DISCONNECT EXISTING ROOFTOP UNITS ACU-3 AND ACU-4, ASSOCIATED DISCONNTECTS, AND LINE VOLTAGE CONTROLS. EXISTING FEEDERS SHALL BE REUTILIZED TO EXTENT POSSIBLE TO FEED NEW RTU UNITS.
2. ELECTRICALLY DISCONNECT EXISTING CONDENSING UNIT, ASSOCIATED DISCONNECTS AND LINE VOLTAGE CONTROLS. EXISTING FEEDERS SHALL BE REUTILIZED TO EXTENT POSSIBLE TO FEED NEW CONDENSING UNIT C-2.
3. ELECTRICALLY DISCONNECT EXISTING CONDENSING UNIT, ASSOCIATED DISCONNECTS AND LINE VOLTAGE CONTROLS. REMOVE FEEDERS BACK TO SOURCE.
4. ELECTRICALLY DISCONNECT EXISTING ROOFTOP UNIT, ASSOCIATED DISCONNECTS AND LINE VOLTAGE CONTROLS. REMOVE FEEDER BACK TO SOURCE.
5. ELECTRICALLY DISCONNECT EXISTING RTU, ASSOCIATED DISCONNECTS AND LINE VOLTAGE CONTROLS. EXISTING FEEDERS SHALL BE REUTILIZED TO EXTENT POSSIBLE TO FEED NEW CONDENSING UNIT RTU-4 IN THIS LOCATION.
6. ELECTRICALLY DISCONNECT EXISTING EXHAUST FAN, ASSOCIATED DISCONNECTS AND LINE VOLTAGE CONTROLS. REMOVE FEEDER BACK TO SOURCE.

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ROOF TOP
DEMOLITION PLAN

E100

LIGHTING CONTROL EQUIPMENT SCHEDULE

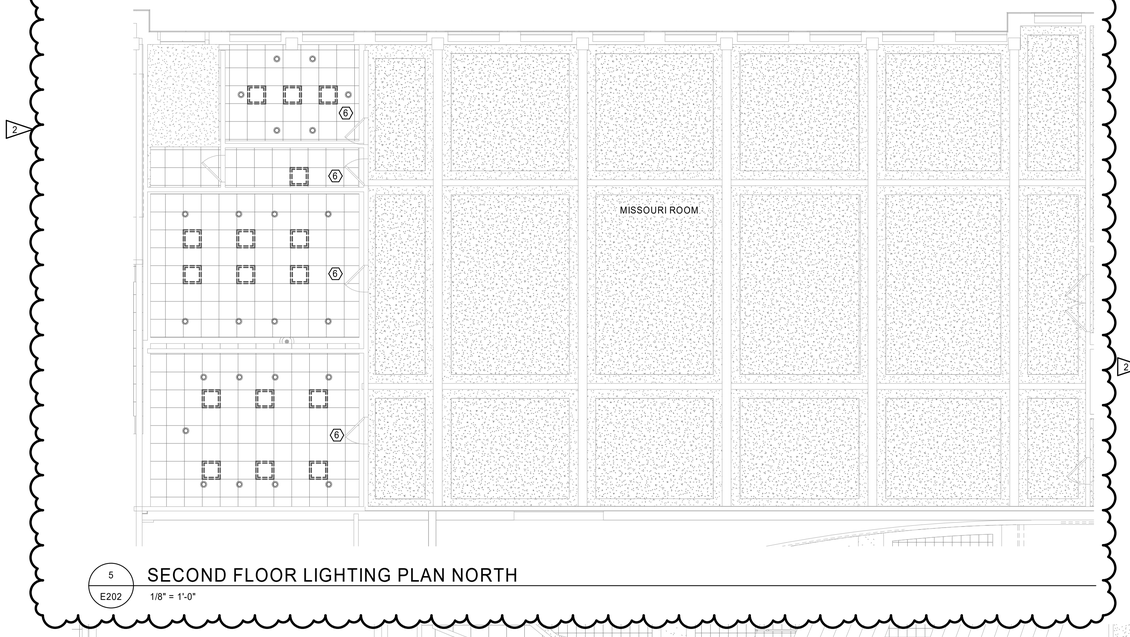
SUBSCRIPT/DEVICE	MANUFACTURER	CATALOG NUMBER	MOUNTING HEIGHT	NOTES
$ LVD	WATTSTOPPER	LMDM SERIES	WALL	LOW VOLTAGE DIGITAL WALL SWITCH,DIMMING CAPABILITY.SWITCHES SHALL SHARE A COMMON BOX AND DECORA WALL PLATE.
OS	WATTSTOPPER	LMDC-100	CLG	DIGITAL CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR LMDC-100 CONNECT TO ROOM CONTROLLER. SET OFF DELAY TO 30 MINUTES AND SENSITIVITY TO MAX.
PS	WATTSTOPPER	LMLS SERIES	CLG	DIGITAL CEILING MOUNTED PHOTO SENSOR. CONNECT TO ROOM CONTROLLER.
RC2	WATTSTOPPER	LMRC 212	ABOVE CLG	DIGITAL DUAL RELAY ROOM CONTROLLER WITH DIMMING CAPABILITY.

1. CONTRACTORS WORK TO INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
2. SUBMIT SHOP DRAWINGS FOR ALL SENSORS, ROOM CONTROLLERS AND LOW VOLTAGE SWITCHES.
3. ALL COMPONENTS SANS CABLES SHALL BE OF SAME MANUFACTURE.
4. FIELD VERIFY EXACT LOCATION OF EACH SENSOR. LOCATE PER MANUFACTURERS RECOMMENDATION.
5. CEILING SENSORS SHALL BE INSTALLED A MINIMUM OF 5FT FROM ANY HVAC SUPPLY OR RETURN AIR DIFFUSER.
6. ALL CONTROLS SHALL BE FULLY ADJUSTED AND COMMISSIONED AS RECOMMENDED BY THE MANUFACTURER.

LIGHTING FIXTURE SCHEDULE

NOTES:
1) CUSHING TERRELL WILL PURSUE ALL NWE LIGHTING REBATES. CONTACT ALAN NSETH, CUSHING TERRELL, 406-248-7455
2) PRIOR APPROVALS AND SHOP DRAWINGS SHALL BE SENT TO LANCE JONES, CUSHING TERRELL, 406-248-7455
3)

TYPE	FIXTURE						
	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	MOUNTING		VOLTAGE	VA
				LOCATION	TYPE		
A1	2X4 LAY-IN FLAT PANEL LED 0-10V DIM	LITHONIA	EPANL 2X4 4800LM 80CRI 35K MIN1 ZT MVOLT	CEILING	RECESSED	120 V	45.00
A1E	2X4 LAY-IN FLAT PANEL LED 0-10V DIM, W/ EM BATTERY	LITHONIA	EPANL 2X4 4800LM 80CRI 35K MIN1 ZT MVOLT E10WCP	CEILING	RECESSED	120 V	45.00
A2	2X2 LAY-IN FLAT PANEL LED 0-10V DIM	LITHONIA	EPANL 2X2 4000LM 80CRI 35K MIN1 ZT MVOLT	CEILING	RECESSED	120 V	37.00
A2E	2X2 LAY-IN FLAT PANEL LED 0-10V DIM, W/ EM BATTERY	LITHONIA	EPANL 2X2 4000LM 80CRI 35K MIN1 ZT MVOLT E10WCP	CEILING	RECESSED	120 V	37.00
CV-1	COVE LED FIXTURE	iO LED	LM-05L-930-120-120-ID-UNV-S-SM-STD-XXF-JHARN01-012	CEILING	SURFACE	120 V	250.00



5 E202 SECOND FLOOR LIGHTING PLAN NORTH
1/8" = 1'-0"

GENERAL NOTES

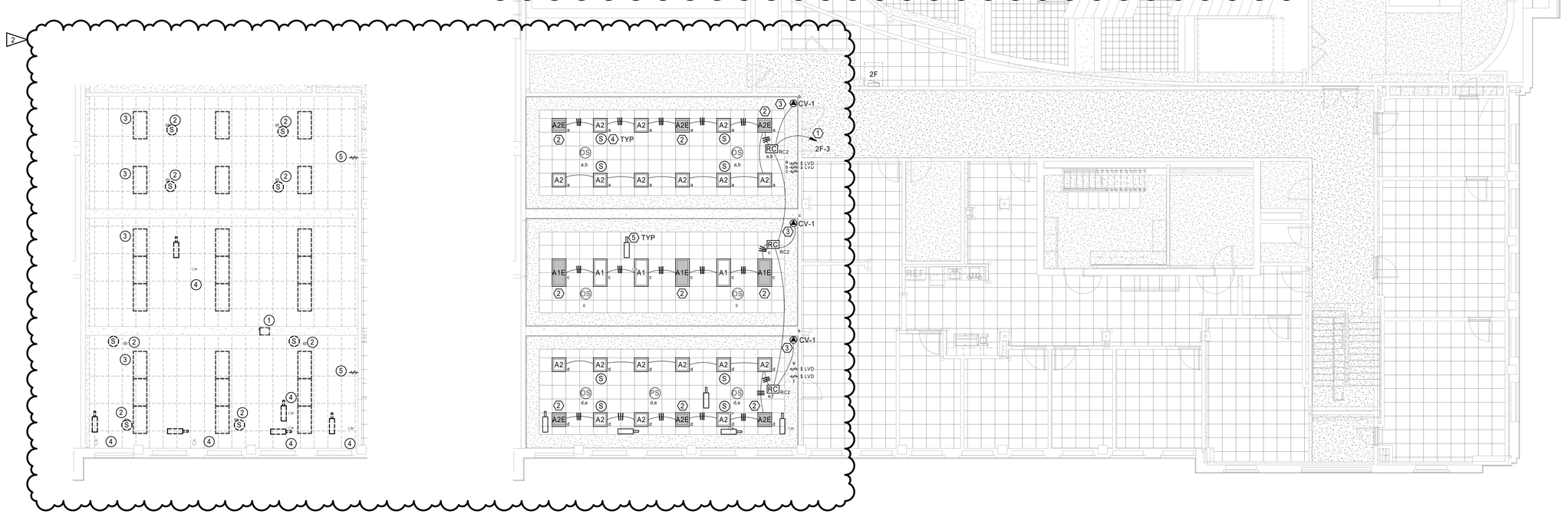
A. COMPLY WITH LATEST ADOPTED NEC AND APPLICABLE CODES/STANDARDS.
B. SHARED NEUTRALS ARE NOT ALLOWED FOR SINGLE PHASE BRANCH CIRCUITS.

SHEET NOTES

1. PROVIDE 20A/1P BREAKER IN EXISTING PANEL 2F TO FEED THIS CIRCUIT.
2. PROVIDE UNSWITCHED HOT CONDUCTOR TO ALL FIXTURES WITH BATTERY BACKUP.
3. COVE LIGHTING SHALL BE INSTALLED IN COVE AS SHOWN IN DETAIL 4/A902.
4. SPEAKER SHALL BE REINSTALLED UPON COMPLETION OF NEW CEILING INSTALLATION. EXTEND CABLING AS NECESSARY TO ACCOMODATE NEW LOCATION.
5. CAMERA SHALL BE REINSTALLED IN SAME LOCATION UPON COMPLETION OF NEW CEILING INSTALLATION. EXTEND CABLING AS NECESSARY TO ACCOMODATE NEW LOCATION.

DEMO NOTES

1. DISCONNECT AND REMOVE EXISTING PROJECTOR. REMOVE WIRING BACK TO SOURCE.
2. TYP. DISCONNECT AND REMOVE EXISTING SPEAKER. SPEAKER SHALL BE RENISTALLED IN NEW CEILING. SEE KEYOTE 4.
3. TYP. DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURE. REMOVE WIRING BACK TO SOURCE. REMOVE ALL ASSOCIATED SWITCHING.
4. TYP. DISCONNECT AND REMOVE EXISTING CAMERA. CAMERA SHALL BE REINSTALLED IN NEW CEILING. SEE KEYNOTE 5.
5. REMOVE EXISTING SWITCHING AND ASSOCIATED WIRING. RACEWAY SHALL REMAIN FOR NEW SWITCHING.
6. REMOVE EXISTING LIGHT FIXTURES IN THIS ROOM AND REINSTALL FIXTURES UPON REPLACEMENT OF CEILING.



4 E202 SECOND FLOOR DEMO LIGHTING PLAN
1/8" = 1'-0"

1 E202 SECOND FLOOR LIGHTING PLAN
1/8" = 1'-0"

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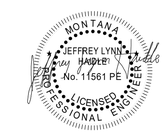


IN DESIGN

01.25.2021
PROJ# | Civic Center Master M & P
DESIGNED BY | Designer
DRAWN BY | Author
REVIEWED BY | Checker

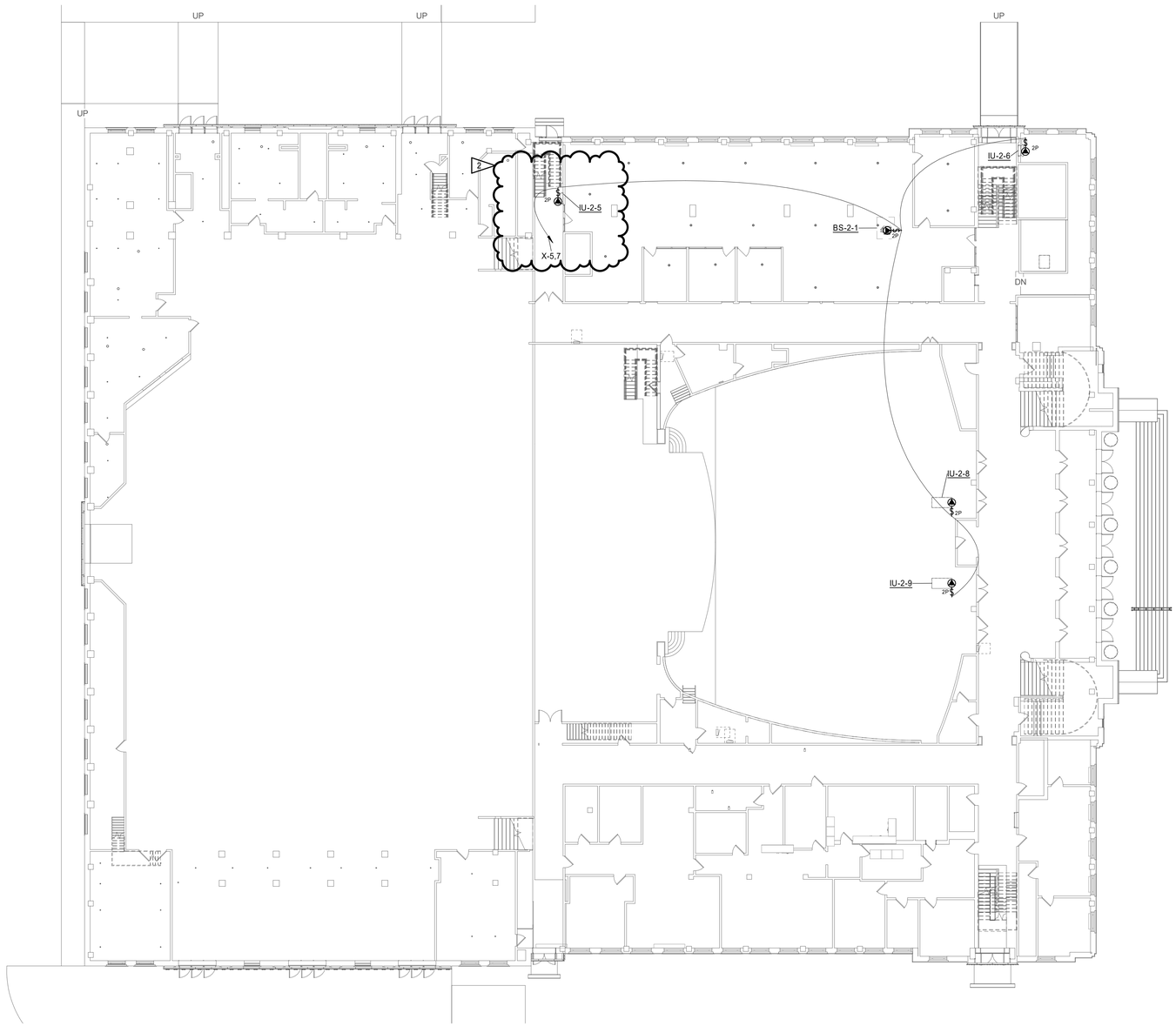
REVISIONS
2 11.10.2022 ADD2

SECOND FLOOR LIGHTING PLAN

E202

GENERAL NOTES

A. COMPLY WITH LATEST ADOPTED NEC AND APPLICABLE CODES/STANDARDS.
B. SHARED NEUTRALS ARE NOT ALLOWED FOR SINGLE PHASE BRANCH CIRCUITS.



1 / E301 FIRST FLOOR POWER PLAN

1/16" = 1'-0"

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MONTANA
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No. 11561 PE
LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS

10.24.2022
PROJECT# | CITYGFCC_RTU
DESIGNED BY | HAIDLE
DRAWN BY | JONES
REVISIONS
2 11.10.2022 Addendum 2

FIRST FLOOR POWER PLAN

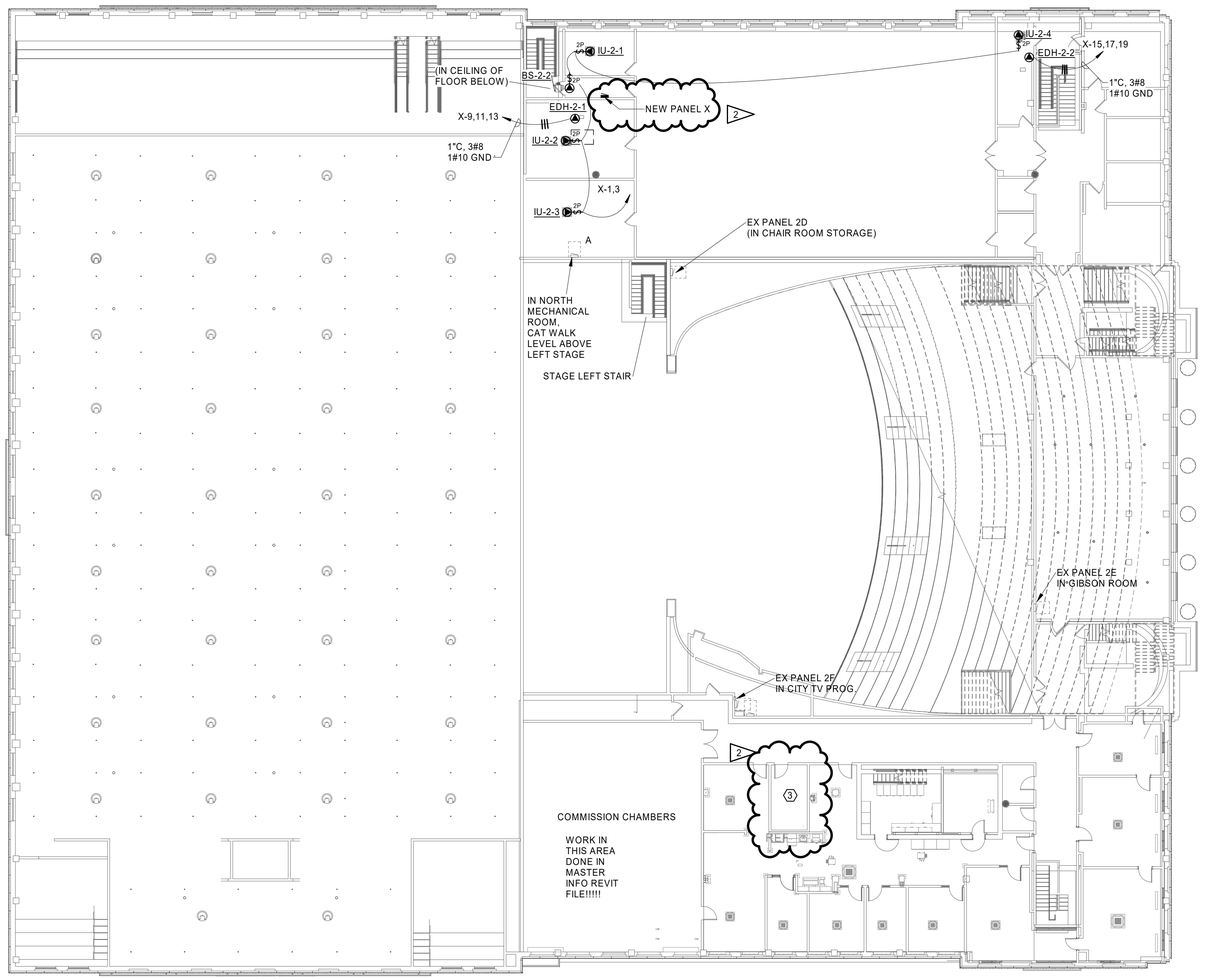
E301

GENERAL NOTES

A. COMPLY WITH LATEST ADOPTED NEC AND APPLICABLE CODES/STANDARDS.
B. SHARED NEUTRALS ARE NOT ALLOWED FOR SINGLE PHASE BRANCH CIRCUITS.

KEYNOTES

1. NEW PANEL X, 120/208V, 3PH, 4W. FEED WITH (4) 3/0, (1) #4 GND, IN 2-1/2" CONDUIT FROM MAIN DISTRIBUTION PANEL.
2. ELECTRICALLY DISCONNECT EXISTING AHU BEING DEMO'D. REMOVE EXISTING DISCONNECT SWITCH AND FEEDER BACK TO SOURCE.
3. DISCONNECT EXISTING EXHAUST FAN IN THIS LOCATION. REMOVE DISCONNECT MEANS AND LINE VOLTAGE CONTROLS. REMOVE FEEDERS BACK TO SOURCE.



1 / E302 SECOND FLOOR POWER PLAN

1/16" = 1'-0"

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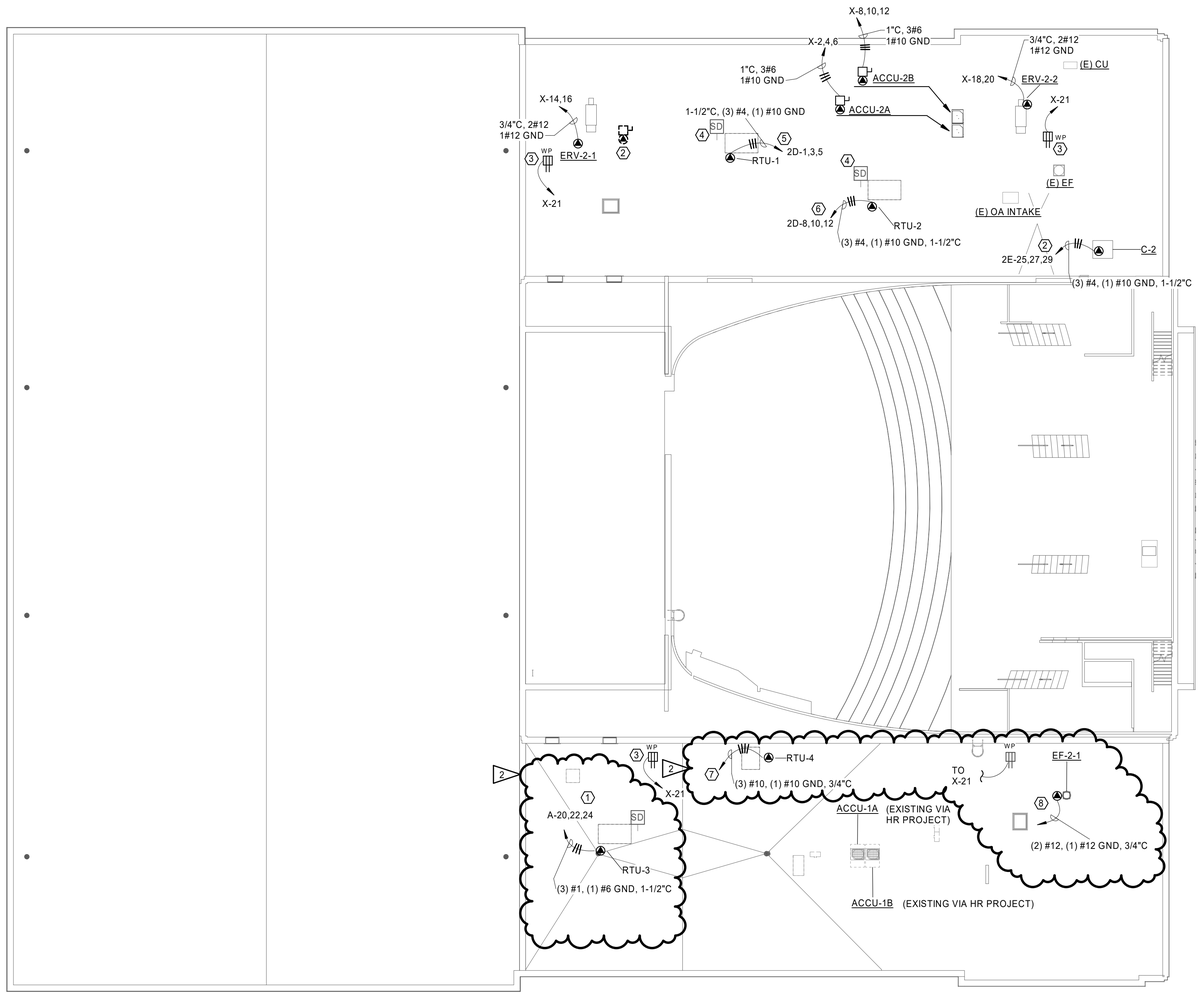
SECOND FLOOR POWER PLAN

E302



GENERAL NOTES

A. COMPLY WITH LATEST ADOPTED NEC AND APPLICABLE CODES/STANDARDS.
B. SHARED NEUTRALS ARE NOT ALLOWED FOR SINGLE PHASE BRANCH CIRCUITS.

KEYNOTES

1. FEED NEW RTU-3 FROM EXISTING PANEL A IN NORTH MECHANICAL ROOM, ABOVE STAGE LEFT. PROVIDE NEW 125A/3P BREAKER IN EXISTING PANEL A TO FEED RTU-3. MATCH EXISTING AIC.
2. CONNECT CU-2 TO PANEL 2E. REPLACE EXISTING 50A/3P BREAKER IN PANEL 2E WITH NEW 60A/3P BREAKER. MATCH EXISTING AIC. FEEDERS WHICH FORMERLY SERVED CU-1 MAY BE REUTILIZED TO EXTENT POSSIBLE. MINIMUM FEEDER REQUIRED SHOWN..
3. PROVIDE GFI/WP RECEPTACLE WITHIN 25' OF MECHANICAL EQUIPMENT.
4. DUCT SMOKE DETECTOR BY EC. PROVIDE AND CONNECT ADDRESSABLE CONTROL RELAY MODULE. EXISTING FIRE ALARM CONTROL PANEL IS LOCATED IN ELECTRICAL ROOM OF CONVENTION CENTER.
5. CONNECT RTU-1 TO PANEL 2D. REPLACE EXISTING 100A/3P BREAKER IN PANEL 2D WITH NEW 60A/3P BREAKER. MATCH EXISTING AIC. FEEDERS WHICH FORMERLY SERVED ACU MAY BE REUTILIZED TO EXTENT POSSIBLE. MINIMUM FEEDER REQUIRED SHOWN.
6. CONNECT RTU-2 TO PANEL 2D. REPLACE EXISTING 100A/3P BREAKER IN PANEL 2D WITH NEW 60A/3P BREAKER. MATCH EXISTING AIC. FEEDERS WHICH FORMERLY SERVED ACU MAY BE REUTILIZED TO EXTENT POSSIBLE. MINIMUM FEEDER REQUIRED SHOWN.
7. CONNECT RTU-4 TO EXISTING CIRCUITRY. EC SHALL TRACE CIRCUIT TO VERIFY SOURCE OF FEEDERS. FEEDERS WHICH FORMERLY SERVED EMOLISHED RTU IN THIS LOCATION MAY BE REUTILIZED TO EXTENT POSSIBLE IF THEY ARE MINIMUM REQUIRED SIZE. MINIMUM FEEDER SIZE REQUIRED IS SHOWN ON ROOF PLAN. PROVIDE 30A/3P BREAKER IN PANEL PREVIOUSLY FEEDING DEMOLISHED RTU. EXISTING BREAKER PREVIOUSLY FEEDING DEMOLISHED RTU MAY BE UTILIZED IF IT IS 30A/3P.
8. CONNECT EF-2-1 TO EXISTING CIRCUITRY. EC SHALL TRACE CIRCUIT TO VERIFY SOURCE OF FEEDERS. FEEDERS WHICH FORMERLY SERVED EMOLISHED EF IN THIS LOCATION MAY BE REUTILIZED TO EXTENT POSSIBLE IF THEY ARE MINIMUM REQUIRED SIZE. MINIMUM FEEDER SIZE REQUIRED IS SHOWN ON ROOF PLAN. PROVIDE 20A/1P BREAKER IN PANEL PREVIOUSLY FEEDING DEMOLISHED EF. EXISTING BREAKER PREVIOUSLY FEEDING DEMOLISHED RTU MAY BE UTILIZED IF IT IS 20A/1P.

1 / E303 LOWER ROOF POWER PLAN

1/16" = 1'-0"

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ROOF TOP POWER PLAN

E303