2ND FLOOR AHU REPLACEMENT

SKOKIE PUBLIC LIBRARY

5215 OAKTON ST.

SKOKIE, IL 60077

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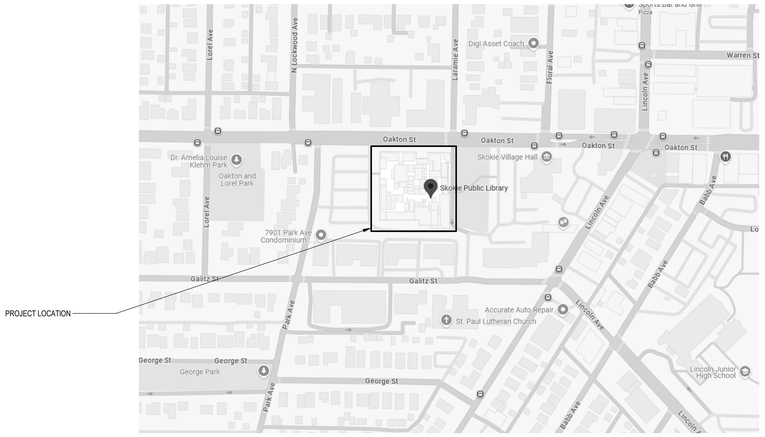
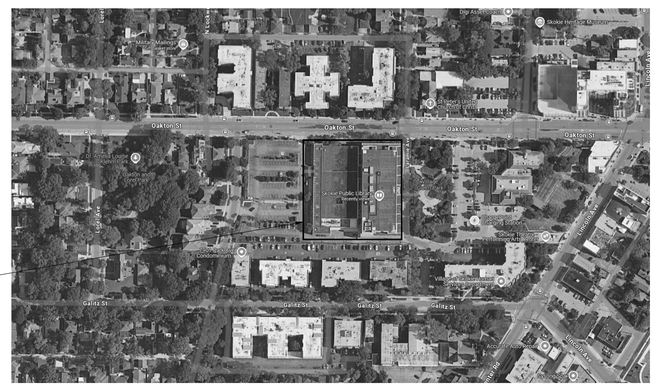
FEBRUARY 11, 2026

SITE MAP





SCOPE OF WORK

1. THE SCOPE OF WORK OF THIS PROJECT IS:
   - A. BASE SCOPE OF WORK:
     - I. REPLACE TWO EXISTING AIR HANDLING UNITS: AHU-201, AND AHU-202
2. THE BUILDING WILL BE OCCUPIED DURING WORK. INSTALLATION OF EQUIPMENT REQUIRING ANY EQUIPMENT SHUT DOWN SHALL BE SCHEDULED WITH THE OWNER PRIOR TO DEMOLITION OF ANY EXISTING EQUIPMENT. AT ALL TIMES DURING CONSTRUCTION, ALL SERVED AREAS SHALL REMAIN CONDITIONED.
3. THE MECHANICAL CONTRACTOR SHALL BE THE PRIME CONTRACTOR, AND SHALL BE RESPONSIBLE FOR COORDINATING ALL TRADES AND DEVELOPING AND MAINTAINING THE PROJECT SCHEDULE. CONTRACTOR RESPONSIBLE FOR OBTAINING REQUIRED PERMITS.
4. THE PROJECT WILL BE BID AS ONE PHASE AND CONSTRUCTED AS TWO PHASES (ONE AHU REPLACED AT A TIME) AND WILL BE GOVERNED BY A GENERAL CONSTRUCTION TYPE OF AGREEMENT BETWEEN OWNER AND CONTRACTOR.
5. THIS PROJECT WILL BE COMMISSIONED, AND CONTRACTORS SHALL SUPPORT COMMISSIONING AGENT DURING FUNCTIONAL TESTING.
6. MECHANICAL CONTRACT SCOPE OF WORK:
   - A. PRIOR TO DEMOLITION CONTRACTOR SHALL PRE-TEST AHUS WITH DUCT TRAVERSES AT SUPPLY, RETURN, EXHAUST FOR BOTH AHUS.
   - B DEMOLISH EXISTING AHU'S (AHU-201 AND AHU-202) AND ASSOCIATED RETURN FANS
   - C. PROVIDE NEW CUSTOM SITE-BUILT AHU'S (AHU-201 AND AHU-202). EACH AHU SHALL INCLUDE THE FOLLOWING:
     - I. AIR BLENDER
     - II. PLEATED MERV-8 PRE-FILTERS AND MERV-13 SECONDARY FILTERS
     - III. HOT WATER PREHEAT COIL
     - IV. COOLING COIL
     - V. SUPPLY FAN ARRAY WITH VFD'S
     - VI. OUTDOOR AIR, RETURN AIR, AND EXHAUST AIR CONTROL DAMPERS
   - D. REWORK HOT WATER AND CHILLED WATER PIPING FOR CONNECTION TO NEW PREHEAT AND COOLING COILS
   - E. PROVIDE NEW RETURN FAN ARRAY WITH VFD'S
   - F. PROVIDE DUCT MODIFICATIONS FOR TEMPORARY AHU CONFIGURATION DURING CONSTRUCTION
7. ELECTRICAL CONTRACT SCOPE OF WORK:
   - A. DEMOLITION OF POWER CONNECTIONS FROM EQUIPMENT TO BE REMOVED
   - B. NEW POWER CONNECTIONS FOR NEW SUPPLY AND RETURN FANS
   - C. PROVIDE POWER CONNECTIONS AS REQUIRED FOR LIGHTING AND OTHER AHU COMPONENTS
8. FIRE ALARM SCOPE OF WORK:
   - A. REWORK OF FIRE ALARM SYSTEM TO TIE-IN NEW AHU'S
9. TEMPERATURE CONTROLS CONTRACT SCOPE OF WORK:
   - A. INTEGRATION OF NEW AIR HANDLING UNITS INTO THE EXISTING BUILDING AUTOMATION SYSTEM IN THE FACILITY
   - B. EXISTING BUILDING AUTOMATION SYSTEM (BAS) IS NIAGARA WITH SCHNEIDER FIELD CONTROLLERS.
     - I. TEMPERATURE CONTROLS CONTRACTOR SHALL BE PRECISION CONTROL SYSTEMS OF CHICAGO, INC, CONTACT TIM O' BRIEN, 630-774-6178, TOBRIEN@PCSOC.COM

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CODES

2021 INTERNATIONAL BUILDING CODE WITH VILLAGE OF SKOKIE ADMENDMENTS
2014 ILLINOIS PLUMBING CODE
2020 NATIONAL ELECTRIC CODE WITH VILLAGE OF SKOKIE ADMENDMENTS
2021 INTERNATIONAL MECHANICAL CODE WITH VILLAGE OF SKOKIE ADMENDMENTS
2021 INTERNATIONAL FUEL CODE WITH VILLAGE OF SKOKIE ADMENDMENTS
2024 INTERNATIONAL ENERGY CONCERVATION CODE WITH ILLINOIS ADMENDMENTS
2010 ADA DESIGN GUIDELINES
2018 ILLINOIS ACCESSIBILTY CODE
2021 INTERNATIONAL FIRE CODE WITH VILLAGE OF SKOKIE ADMENDMENTS
2021 LIFE SAFETY CODE

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SEAL

COVER SHEET
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ISSUES & REVISIONS

NO.	DESCRIPTION	DATE
1	50% OWNER REVIEW	3.11.26
2	100% OWNER REVIEW	3.04.26
3	ISSUED FOR BID	3.11.26

KEYPLAN

SCALE

DRAWN	CHECKED	APPROVED
BTR	APM	APM

PROJECT NO.
P25-1226-00

CS

ABBREVIATIONS

DESIGNATION	DESCRIPTION
ABV	ABOVE
ACT	ACOUSTIC CEILING TILE
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
BAS	BUILDING AUTOMATION SYSTEM
BDD	BACKDRAFT DAMPER
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CLG	CEILING OR COOLING
CONC	CONCRETE
CD	COMBINATION FIRE/SMOKE DAMPER
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DIA	DIAMETER
DWG	DRAWING
EL	ELEVATION
ELEC	ELECTRICAL
EQ	EQUIPMENT
EXH	EXHAUST
F OR °F	FAHRENHEIT
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FLR	FLOOR
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPM	FEET PER MINUTE
FT	FEET OR FOOT
GA	GAUGE
GAL	GALLON
GPM	GALLONS PER MINUTE
GWB	GYPSUM WALL BOARD
HP	HORSEPOWER
HTG	HEATING
HVAC	HEATING VENTILATING AND AIR CONDITIONING
ID	INSIDE DIAMETER
KW	KILOWATT
LB	POUND
LCP	LOCAL CONTROL PANEL
LRA	LOCKED ROTOR AMPS
MAT	MIXED AIR TEMPERATURE
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MHP	MOTOR HORSEPOWER
MIN	MINIMUM
MD	MOTORIZED DAMPER
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTDOOR AIR
OD	OUTSIDE DIAMETER
OZ	OUNCE
PSI(G)	POUNDS PER SQUARE INCH (GAUGE)
RH	RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
SD	SMOKE DAMPER
SQ	SQUARE
TP	TOTAL PRESSURE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
WB	WET BULB
W/	WITH
W/O	WITHOUT
WG	WATER GAUGE

DUCT SYSTEMS LEGEND

DESIGNATION	DESCRIPTION
EA	GENERAL EXHAUST AIR
RA	RETURN AIR
OA	OUTSIDE / VENTILATION AIR
SA	SUPPLY AIR
KEA	KITCHEN EXHAUST AIR
SEA	SMOKE EXHAUST AIR
HEA	HAZARDOUS EXHAUST AIR

PIPING SYSTEMS LEGEND

DESIGNATION	DESCRIPTION
BBD	BOILER BLOWDOWN
BF	BOILER FEEDWATER
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN (GRAVITY)
CF	CHEMICAL FEED
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CO2	CARBON DIOXIDE
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D	DRAIN
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
DIR	DEIONIZED WATER RETURN
DIS	DEIONIZED WATER SUPPLY
DWR	DISTILLED WATER RETURN
DWS	DISTILLED WATER SUPPLY
FOF	FUEL OIL FILL
FOG	FUEL OIL GAUGE
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
G	NATURAL GAS
GR	GLYCOL RETURN
GS	GLYCOL SUPPLY
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HTWR	HIGH TEMPERATURE HEATING WATER RETURN
HTWS	HIGH TEMPERATURE HEATING WATER SUPPLY
HWR	HEATING HOT WATER RETURN
HWS	HEATING HOT WATER SUPPLY
IA	INSTRUMENT AIR
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LPS(C)	LOW PRESSURE CLEAN HUMIDIFICATION STEAM
MA	MEDICAL AIR
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
MU	MAKE-UP WATER
MV	MEDICAL VACUUM
N2	NITROGEN
N2O	NITROUS OXIDE
O2	OXYGEN
PC	PUMPED CONDENSATE
PCHWR	PRIMARY CHILLED WATER RETURN
PCHWS	PRIMARY CHILLED WATER SUPPLY
RG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID
RO	REVERSE OSMOSIS SUPPLY
ROR	REVERSE OSMOSIS RETURN
RS	REFRIGERANT SUCTION
RV	REFRIGERANT VENT
SCHWR	SECONDARY CHILLED WATER RETURN
SCHWS	SECONDARY CHILLED WATER SUPPLY
V	VENT TO ATMOSPHERE
WAGD	WASTE ANESTHESIA GAS DISPOSAL

EQUIPMENT LEGEND

DESIGNATION	DESCRIPTION
AB	AIR BLENDER
AC	AIR COMPRESSOR
ACC	AIR-COOLED CONDENSER
ACCU	AIR-COOLED CONDENSING UNIT
ACU	AIR CONDITIONING UNIT (AIR-COOLED OR WATER-COOLED)
AHU	AIR HANDLING UNIT
AP	MEDICAL GAS/VACUUM AREA ALARM PANEL
B	BOILER
BB	BASEBOARD RADIATION
CC	CHILLED WATER COOLING COIL
CCHR	CLOSED CIRCUIT HEAT REJECTOR
CH	CHILLER
CT	COOLING TOWER
CUH	CABINET UNIT HEATER
CV	CONTROL VALVE
DX	DIRECT EXPANSION COOLING COIL
EC	EVAPORATIVE CONDENSER
EF	EXHAUST FAN
FCU	FAN COIL UNIT
FIL	FILTER
HC	HEATING COIL
HP	HEAT PUMP (AIR-SOURCE OR WATER-SOURCE)
HUM	HUMIDIFIER
HX	HEAT EXCHANGER
IAC	INSTRUMENT AIR COMPRESSOR
IO	MEDICAL GAS/VACUUM INLET/OUTLET
IU	INDUCTION UNIT
MAC	MEDICAL AIR COMPRESSOR
MU	MAKEUP AIR UNIT
MVP	MEDICAL VACUUM PUMP
P	PUMP
PH	INTAKE OR EXHAUST PENTHOUSE
PRV	PRESSURE REDUCING VALVE
RCP	RADIANT CEILING PANEL
RF	RETURN FAN
RTU	PACKAGED ROOFTOP UNIT
SA	SOUND ATTENTUATOR
SC	SHELL AND TUBE STEAM CONVERTOR
SF	SUPPLY FAN
T	TANK
TD	TERMINAL DEVICE
TU	TERMINAL UNIT
UH	UNIT HEATER
VFD	VARIABLE FREQUENCY DRIVE
ZVB	MEDICAL GAS/VACUUM ZONE VALVE BOX

PIPING FITTINGS

DESIGNATION		DESCRIPTION
DOUBLE LINE	SINGLE LINE	
		FLANGE / CAP
		ELBOW, 90°
		ELBOW DOWN
		ELBOW UP
		OLET BRANCH
		REDUCER, CONCENTRIC
		REDUCER, ECCENTRIC
		TEE
		TEE CONNECTION, BOTTOM
		TEE CONNECTION, TOP

PIPING SYMBOLS

DESIGNATION	DESCRIPTION
	BALL VALVE
	BUTTERFLY VALVE
	GLOBE VALVE
	SWING CHECK VALVE
	SPRING CHECK VALVE
	GATE VALVE
	GENERIC VALVE
	PLUG VALVE
	MANUAL BALANCE VALVE
	AUTOFLOW VALVE
M	2-WAY ELECTRIC CONTROL VALVE
M	2-WAY BUTTERFLY ELECTRIC CONTROL VALVE
	2-WAY PNEUMATIC CONTROL VALVE
	2-WAY BUTTERFLY PNEUMATIC CONTROL VALVE
S	2-WAY SOLENOID VALVE
M	3-WAY ELECTRIC CONTROL VALVE
	3-WAY PNEUMATIC CONTROL VALVE
	EXPANSION JOINT
	PIPE ANCHOR
	PIPE GUIDE
	DIELECTRIC UNION
	FLANGED UNION
	SCREWED UNION
	FLEXIBLE CONNECTION
	PRESSURE REDUCING VALVE
	Y STRAINER
	Y STRAINER W/ BALL VALVE
	Y STRAINER W/ GATE VALVE
	OSY VALVE
	NEEDLE VALVE
M	WATER METER
	THERMOMETER
	PRESSURE GAUGE AND NEEDLE VALVE
	STEAM PRESSURE GAUGE AND NEEDLE VALVE
	STEAM TRAP
PT	UNIVERSAL PORT FOR PRESSURE GAUGE OR THERMOMETER WELL
MV	MANUAL AIR VENT
AV	AUTOMATIC AIR VENT
	GATE ANGLE VALVE
	GLOBE ANGLE VALVE
	PRESSURE RELIEF OR SAFETY VALVE
	HOSE END DRAIN WITH BALL VALVE

DUCT FITTINGS

DESIGNATION	DESCRIPTION
TAPS AND TEES	
	ROUND TO ROUND TEE
12ø / 6ø	ROUND TO ROUND CONICAL BRANCH
24x12 / 12ø	RECTANGULAR TO ROUND BELLMOUTH BRANCH
24x12 / 16x10	RECTANGULAR TO RECTANGULAR BEVELED BRANCH
	RECTANGULAR TEE
TRANSITIONS	
	RECTANGULAR TO RECTANGULAR CONCENTRIC TRANSITION OR ROUND TO ROUND CONCENTRIC TRANSITION
	RECTANGULAR TO RECTANGULAR ECCENTRIC TRANSITION OR ROUND TO ROUND ECCENTRIC TRANSITION
	RECTANGULAR TO ROUND CONCENTRIC TRANSITION
	RECTANGULAR TO ROUND ECCENTRIC TRANSITION
ELBOWS	
	RECTANGULAR OR ROUND SMOOTH RADIUS ELBOW WITHOUT SPLITTER
	RECTANGULAR SMOOTH RADIUS ELBOW WITH SPLITTER
	RECTANGULAR MITERED ELBOW WITH VANES
UP / DN	SUPPLY AIR (SA) ELBOW UP AND DOWN
UP / DN	RETURN AIR (RA) ELBOW UP AND DOWN
UP / DN	GENERAL EXHAUST AIR (EA) UP AND DOWN
UP / DN	OUTSIDE/VENTILATION AIR (OA) UP AND DOWN
UP / DN	ISOLATION EXHAUST AIR (EA) UP AND DOWN
UP / DN	KITCHEN EXHAUST AIR (KEA) UP AND DOWN
UP / DN	SMOKE EXHAUST AIR (SEA) UP AND DOWN
UP / DN	HAZARDOUS EXHAUST AIR (HEA) UP AND DOWN
WYES	
	RECTANGULAR SMOOTH RADIUS WYE WITHOUT SPLITTER
	RECTANGULAR SMOOTH RADIUS WYE WITH SPLITTER
	RECTANGULAR MITERED WYE WITH VANES
	ROUND WYE
OTHER	
	RECTANGULAR OR ROUND END CAP
	FLEXIBLE DUCT
	DUCT WITH INTERNAL LINING
	FLEXIBLE DUCT CONNECTION
	RECTANGULAR DUCT ACCESS DOOR
	ROUND DUCT ACCESS DOOR

DUCT SYMBOLS

DESIGNATION	DESCRIPTION
DIFFUSERS	
	SQUARE CEILING MOUNTED SUPPLY DIFFUSER
	SQUARE CEILING MOUNTED RETURN GRILLE
	SQUARE CEILING MOUNTED EXHAUST GRILLE
	LINEAR CEILING MOUNTED DIFFUSER (1-, 2-, 3-, AND 4-SLOT)
	CRITICAL ENVIRONMENT SUPPLY DIFFUSER
	SIDEWALL SUPPLY / RETURN / EXHAUST REGISTER
DAMPERS	
CD	RECTANGULAR COMBINATION FIRE/SMOKE DAMPER
CD	ROUND COMBINATION FIRE/SMOKE DAMPER
FD	RECTANGULAR FIRE DAMPER
FD	ROUND FIRE DAMPER
SD	RECTANGULAR SMOKE DAMPER
SD	ROUND SMOKE DAMPER
M	MOTORIZED DAMPER (REFER TO TC DRAWINGS FOR ACTUATOR AND BLADE TYPE)
	MANUAL VOLUME DAMPER
EQUIPMENT	
	AXIAL FAN
	CENTRIFUGAL FAN
	PROPELLER FAN
	HUMIDIFIER
	AIRFLOW MEASURING STATION
	SINGLE DUCT SUPPLY TERMINAL UNIT
	SINGLE DUCT SUPPLY TERMINAL UNIT WITH HOT WATER REHEAT COIL
	SINGLE DUCT SUPPLY TERMINAL UNIT WITH ELECTRIC REHEAT COIL
	SINGLE DUCT ROUND RETROFIT TERMINAL UNIT
	SERIES OR PARALLEL FAN POWERED TERMINAL UNIT
	PARALLEL FAN POWERED TERMINAL UNIT WITH INDUCED AIR HOT WATER REHEAT COIL
	PARALLEL OR SERIES FAN POWERED TERMINAL UNIT WITH DISCHARGE HOT WATER REHEAT COIL
	PARALLEL OR SERIES FAN POWERED TERMINAL UNIT WITH DISCHARGE ELECTRIC REHEAT COIL
	CRITICAL ENVIRONMENT SUPPLY, RETURN, OR EXHAUST TERMINAL UNIT
	DUCT MOUNTED HOT WATER HEATING COIL

GENERAL

DESIGNATION	DESCRIPTION
	THIN LINES - EXISTING PIPING, DUCTWORK OR EQUIPMENT TO REMAIN
	HEAVY LINES - NEW PIPING, DUCTWORK OR EQUIPMENT
	HEAVY DASHED LINES - PIPING, DUCTWORK OR EQUIPMENT TO BE DEMOLISHED
	MATCHLINE
#	POINT OF NEW CONNECTION BETWEEN NEW WORK AND EXISTING
#	CONSTRUCTION KEYED NOTE
#	DEMOLITION KEYED NOTE
1 / M2.6	DETAIL OR PLAN CALLOUT
2 / M2.6	SECTION
1 VIEW NAME / SCALE	VIEW TITLE
SYSTEM / CHW 2 / RISER NUMBER	RISER TAG
TYPE / MARK	EQUIPMENT TAG

SHEET LIST

SHEET NUMBER	SHEET NAME
M000	MECHANICAL SYMBOLS AND ABBREVIATIONS
M001	MECHANICAL SCHEDULES
MD102	MECHANICAL SECOND FLOOR PLAN - DEMOLITION
MD103	MECHANICAL SECOND FLOOR PLAN - TEMPORARY
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M201	MECHANICAL DIAGRAMS
M300	MECHANICAL DETAILS
M400	MECHANICAL CONTROLS
M401	MECHANICAL CONTROLS

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE BUILDING CODE AND LOCAL ZONING CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS THE CONSTRUCTION DOCUMENTS SHALL GOVERN.
2. PERFORM WORK IN ACCORDANCE WITH OWNER'S SITE RULES AND REGULATIONS TO MINIMIZE DISRUPTIONS TO FACILITY OPERATIONS. EACH PHASE OF WORK SHALL BE DISCUSSED WITH OWNER TO DETERMINE POSSIBLE IMPACT TO FACILITY OPERATIONS.
3. PHASE WORK TO MINIMIZE DOWN TIME OF EXISTING SYSTEMS
4. SCHEDULE ALL SHUTDOWNS IN ADVANCE WITH ONWER.
5. RESTORE EXISTING WORK DISTURBED BY DEMOLITION AND NEW WORK TO ORIGINAL CONDITION
6. THESE DRAWINGS HAVE BEEN PREPARED WITH CONSIDERATION GIVEN TO AVOID INTERFERENCES WITH ALL EXISTING AND NEW WORK OF ALL DISCIPLINES, HOWEVER INTERFERENCES MAY EXIST
   - 6.1. DRAWINGS ARE TO BE CONSIDERED SCHEMATIC ONLY AND ARE NOT INTENDED TO INDICATE ALL CHANGES IN DIRECTIONS AND ELEVATIONS. NEITHER DOES IT INDICATE ALL NECESSARY PIPE FITTINGS AND SPECIALTIES TO BE PROVIDED.
   - 6.2. DUCTWORK, PIPING AND OTHER ELEMENTS MAY BE RELOCATED OR OFFSET FOR PROPER CLEARANCES. DEVIATIONS FROM DRAWINGS MUST BE INDICATED ON CONTRACTOR PREPARED SHOP DRAWINGS FOR ENGINEER'S APPROVAL
   - 6.3. IT IS THE RESPONSIBILITY OF ALL CONTRACTORS TO COORDINATE THEIR WORK AND ACTIVITIES WITH ALL NEW AND EXISTING WORK TO ELIMINATE ALL INTERFERENCES. THE COST OF ANY COORDINATION DEVIATIONS TO ELIMINATE INTERFERENCES AS MENTIONED ABOVE, MUST BE PART OF THE ORIGINAL CONTRACT PRICE AND SHALL NOT BE AN EXTRA COST TO THE OWNER.
   - 6.4. THE DESIGN INTENT, SUCH AS, PITCHES, VELOCITIES, PRESSURE DROPS, VOLTAGE DROPS, CABLE PULLING TENSIONS, ETC. CANNOT BE GREATLY ALTERED WITHOUT THE APPROVAL OF THE ENGINEER.
   - 6.5. "RECORD DRAWINGS" MUST BE SUBMITTED BY THE CONTRACTOR UPON COMPLETION OF WORK INSTALLATION. THESE "RECORD DRAWINGS" MUST REFLECT ALL DEVIATIONS.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN CLEAN-UP DURING CONSTRUCTION. IF CONTRACTOR FAILS TO PROVIDE SUCH CLEAN-UP, THE ENGINEER WILL DIRECT ANOTHER CONTRACTOR TO PERFORM THE CLEAN-UP AND THE NEGLIGENT CONTRACTOR SHALL PAY THE ASSOCIATED BACK-CHARGES AS DEEMED APPROPRIATE BY THE CONSTRUCTION MANAGER.
8. THE DRAWINGS, SCHEDULES AND SPECIFICATIONS HAVE BEEN PREPARED USING ONE MANUFACTURER FOR EACH PIECE OF EQUIPMENT AS THE BASIS FOR DIMENSIONAL DESIGN. IF THE CONTRACTOR PURCHASES EQUIPMENT LISTED AS A SPECIFIED ACCEPTABLE MANUFACTURER BUT IS NOT THE SCHEDULED MANUFACTURER USED FOR THE BASE DESIGN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL THE DIMENSIONS OF THE EQUIPMENT TO VERIFY THAT IT WILL FIT IN THE SPACE SHOWN ON THE DRAWINGS. MINOR DEVIATIONS IN DIMENSIONS WILL BE PERMITTED, PROVIDED THE RATINGS MEET THOSE SHOWN ON THE DRAWINGS AND EQUIPMENT WILL PHYSICALLY FIT INTO THE SPACE ALLOCATED WITH SUITABLE ACCESS AROUND EQUIPMENT FOR OPERATION AND MAINTENANCE ON THE EQUIPMENT.
9. CONTRACTOR SHALL ABIDE BY CONDITIONS OF CONTRACT AGREEMENT AND SPECIFICATIONS.
10. PROVIDE GUIDES, HANGERS, AND ALL SUPPLEMENTARY STEEL SUPPORTS WHERE REQUIRED FOR ALL PIPING.
11. ALL DEMOLITION SHALL BE PERFORMED WITH DUE CARE AND DILIGENCE SO AS TO PREVENT THE UNNECESSARY DESTRUCTION AND / OR DAMAGE TO SYSTEMS THAT SHALL REMAIN IN OPERATION AT THE CONCLUSION OF THIS WORK. DETERMINE THE EXACT LOCATION OF ALL EXISTING EQUIPMENT, DEVICES AND WIRING BEFORE COMMENCING WORK.
12. LOCATE AND PRESERVE ALL PORTIONS OF THE EXISTING SYSTEMS WHICH SHALL REMAIN.
13. MECHANICAL CONTRACTOR SHALL PROVIDE ON SITE TRAINING OF OWNERS OPERATING PERSONNEL FOR ALL SYSTEMS AND EQUIPMENT INSTALLED UNDER THEIR CONTRACT.

NOTE: SYMBOLS AND ABBREVIATIONS SHOWN FOR REFERENCE ONLY. NOT ALL SYMBOLS AND ABBREVIATIONS SHOWN ARE USED IN PROJECT

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MECHANICAL SYMBOLS AND ABBREVIATIONS

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PROJECT NO.
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M000

COILS, CHILLED WATER COOLING

TAG	SERVICE	LOCATION	SYSTEM CONFIGURATION (DRAW-THROUGH OR BLOW-THROUGH)	AIRFLOW (CFM)	COOLING CAPACITY		COIL BANK DATA						AIR SIDE					FLUID SIDE						OPPERATING WEIGHT (LBS)	MANUFACTURER	MODEL NUMBER	REMARKS
					SENSIBLE (MBH)	TOTAL (MBH)	MAXIMUM FACE VELOCITY (FPM)	MINIMUM NUMBER OF ROWS	MAXIMUM FINS PER INCH	OVERALL COIL BANK DIMENSIONS W x H (IN x IN)	INDIVIDUAL COILS		ENTERING TEMP		LEAVING TEMP		MAXIMUM PRESSURE DROP (IN WG)	FLUID TYPE	FLOW RATE (GPM)	ENTERING TEMP (°F)	LEAVING TEMP (°F)	MAXIMUM PRESSURE DROP (FT WG)				
											NUMBER	DIMENSIONS W x H (IN x IN)	DRY BULB (°F)	WET BULB (°F)	DRY BULB (°F)	WET BULB (°F)										
CC-1	AHU-201	2ND FLOOR - MECH ROOM	DRAW-THROUGH	30,000	1,024	1,794	494	8	7	111x87	3	108x27	82	70	51	50.8	0.97	H2O	357	42	52	17.8	784	PRECISION COILS	CW58S08S07-27X108-LH	1,2,3
CC-2	AHU-202	2ND FLOOR - MECH ROOM	DRAW-THROUGH	30,000	1,024	1,794	494	8	7	111x87	3	108x27	82	70	51	50.8	0.97	H2O	357	42	52	17.8	784	PRECISION COILS	CW58S08S07-27X108-LH	1,2,3

NOTES:
1. COIL SHALL BE PRESSURE TESTED AT 315 PSI
2. PROVIDE STAINLESS STEEL DRAIN PAN UNDER COIL
3. PROVIDE WITH ALL PIPING ACCESSORIES AS SHOWN IN DETAILS AND DIAGRAMS

FANS

TAG	SERVICE	LOCATION	AIRFLOW		EXTERNAL STATIC PRESSURE (IN WG)	TOTAL STATIC PRESSURE (IN WG)	DRIVE (BELT OR DIRECT)	TYPE	AMCA CLASS (I, II, III, IV)	WHEEL DIAMETER (IN)	FAN SPEED (RPM)	MAXIMUM OUTLET VELOCITY (FPM)	ABSORBED POWER (BHP)	INDIVIDUAL FANS	MOTOR DATA					WEIGHT (LBS)	MANUFACTURER	MODEL NUMBER	REMARKS
			SYSTEM REQUIRED (CFM)	EQUIPMENT CAPACITY (CFM)											RATED POWER (HP)	SPEED (RPM)	V/Ø/Hz	EMERGENCY POWER SOURCE REQUIRED (YES OR NO)	CONNECTED TO VFD? (YES OR NO)				
SF-1	AHU-201	2ND FLOOR - MECH ROOM	27860	30000	2.5	5.6	DIRECT	FAN WALL	I	22	2234	675	9.34	4	10	1,760	460/3/60	YES	YES	1976	NORTEK	22-95-215T-44X44X32-B2	1,2
RF-1	AHU-201	2ND FLOOR - MECH ROOM	27860	30000	2.0	2.1	DIRECT	FAN WALL	I	20	2652	1263	8.92	3	10	1,760	460/3/60	YES	YES	1404	NORTEK	20-105-215T-34X42X32-C1	1,2
SF-2	AHU-202	2ND FLOOR - MECH ROOM	26000	30000	2.5	5.6	DIRECT	FAN WALL	I	22	2234	675	9.34	4	10	1,760	460/3/60	YES	YES	1976	NORTEK	22-95-215T-44X44X32-B2	1,2
RF-2	AHU-202	2ND FLOOR - MECH ROOM	26000	30000	2.0	2.1	DIRECT	FAN WALL	I	20	2652	1263	8.92	3	10	1,760	460/3/60	YES	YES	1404	NORTEK	20-105-215T-34X42X32-C1	1,2

NOTES:
1. ALTERNATE AHU MANFACTURERS SHALL PROVIDE SAME NUMBER OF FANS IN A SIMILAR ARRANGEMENT TO BASIS OF DESIGN. FAN ARRAY SHALL BE CAPABLE OF PROVIDING DESIGN FLOW AND PRESSURE WITH ONE FAN INACTIVE
2. PROVIDE WITH ELECTRONICALLY COMMUTATED MOTOR

COILS, HOT WATER HEATING

TAG	SERVICE	LOCATION	AIRFLOW (CFM)	HEATING CAPACITY (MBH)	COIL BANK DATA						AIR SIDE			FLUID SIDE					MANUFACTURER	MODEL NUMBER	REMARKS
					MAXIMUM FACE VELOCITY (FPM)	MINIMUM NUMBER OF ROWS	MAXIMUM FINS PER INCH	OVERALL COIL BANK DIMENSIONS W x H (IN x IN)	INDIVIDUAL COILS		ENTERING TEMP	LEAVING TEMP	MAXIMUM PRESSURE DROP (IN WG)	FLUID TYPE	FLOW RATE (GPM)	ENTERING TEMP (°F)	LEAVING TEMP (°F)	MAXIMUM PRESSURE DROP (FT WG)			
									NUMBER	DIMENSIONS W x H (IN x IN)	DRY BULB (°F)	DRY BULB (°F)									
HC-1	AHU-201	2ND FLOOR - MECH ROOM	30,000	2,047	493	2	6	115.25x82	2	112.25x39	30	93	0.12	H2O	210.5	200	180	7.96	NORTEK	5WC-2-39x112.25x2-6AL	1,2,3
HC-2	AHU-202	2ND FLOOR - MECH ROOM	30,000	2,047	493	2	6	115.25x82	2	112.25x39	30	93	0.12	H2O	210.5	200	180	7.96	NORTEK	5WC-2-39x112.25x2-6AL	1,2,3

NOTES:
1. COIL SHALL BE PRESSURE TESTED AT 315 PSI
2. PROVIDE STAINLESS STEEL DRAIN PAN UNDER COIL
3. PROVIDE WITH ALL PIPING ACCESSORIES AS SHOWN IN DETAILS AND DIAGRAMS

VARIABLE FREQUENCY DRIVES

TAG	EQUIPMENT SERVED	LOCATION	MOTOR		VFD RATING			WITH BYPASS (YES OR NO)	MANUFACTURER	MODEL NUMBER	REMARKS
			RATED POWER (HP)	V/Ø/Hz	RATED POWER (HP)	AMPS	V/Ø/Hz				
VFD-SF1-1	SF-1 (AHU-201)	2ND FLOOR - MECH ROOM	10	460/3/60	10	14	460/3/60	NO	ABB	ACH580-01	1
VFD-SF1-2	SF-1 (AHU-201)	2ND FLOOR - MECH ROOM	10	460/3/60	10	14	460/3/60	NO	ABB	ACH580-01	1
VFD-SF1-3	SF-1 (AHU-201)	2ND FLOOR - MECH ROOM	10	460/3/60	10	14	460/3/60	NO	ABB	ACH580-01	1
VFD-SF1-4	SF-1 (AHU-201)	2ND FLOOR - MECH ROOM	10	460/3/60	10	14	460/3/60	NO	ABB	ACH580-01	1
VFD-RF1-1	EF-1 (AHU-201)	2ND FLOOR - MECH ROOM	10	460/3/60	10	14	460/3/60	NO	ABB	ACH580-01	1
VFD-RF1-2	EF-1 (AHU-201)	2ND FLOOR - MECH ROOM	10	460/3/60	10	14	460/3/60	NO	ABB	ACH580-01	1
VFD-RF1-3	EF-1 (AHU-201)	2ND FLOOR - MECH ROOM	10	460/3/60	10	14	460/3/60	NO	ABB	ACH580-01	1
VFD-SF2-1	SF-2 (AHU-202)	2ND FLOOR - MECH ROOM	10	460/3/60	10	14	460/3/60	NO	ABB	ACH580-01	1
VFD-SF2-2	SF-2 (AHU-202)	2ND FLOOR - MECH ROOM	10	460/3/60	10	14	460/3/60	NO	ABB	ACH580-01	1
VFD-SF2-3	SF-2 (AHU-202)	2ND FLOOR - MECH ROOM	10	460/3/60	10	14	460/3/60	NO	ABB	ACH580-01	1
VFD-SF2-4	SF-2 (AHU-202)	2ND FLOOR - MECH ROOM	10	460/3/60	10	14	460/3/60	NO	ABB	ACH580-01	1
VFD-RF2-1	EF-2 (AHU-202)	2ND FLOOR - MECH ROOM	10	460/3/60	10	14	460/3/60	NO	ABB	ACH580-01	1
VFD-RF2-2	EF-2 (AHU-202)	2ND FLOOR - MECH ROOM	10	460/3/60	10	14	460/3/60	NO	ABB	ACH580-01	1
VFD-RF2-3	EF-2 (AHU-202)	2ND FLOOR - MECH ROOM	10	460/3/60	10	14	460/3/60	NO	ABB	ACH580-01	1

NOTES:
1. VFD SHALL MEET IEE 519 PER VFD SPECIFICATIONS

AIR FILTERS

TAG	SERVICE	LOCATION	TOTAL AIRFLOW (CFM)	MAXIMUM FACE VELOCITY (FPM)	FILTER SERVICE (PRE, SECONDARY, FINAL)	MINIMUM EFFICIENCY REPORTING VALUE (MERV)	INDIVIDUAL FILTER SIZE		OVERALL FILTER BANK ARRANGEMENT				MAXIMUM PRESSURE DROP		MANUFACTURER	MODEL NUMBER	REMARKS
							FACE DIMENSIONS W x H (IN x IN)	DEPTH (IN)	FILTER BANK DIMENSIONS (IN x IN)	TOTAL NUMBER OF FILTERS	NUMBER OF FILTERS WIDE	NUMBER OF FILTERS HIGH	CLEAN (IN WG)	DIRTY (IN WG)			
F-1	AHU-201	2ND FLOOR - MECH ROOM	30,000	500	SECONDARY	13	24x24	22	120x72	15	5	3	0.38	0.76	CAMFIL	HFESMV13/24/24/22/10	1,2,3
PF-1	AHU-201	2ND FLOOR - MECH ROOM	30,000	500	PRE-FILTER	8	24x24	2	120x72	15	5	3	0.31	0.62	CAMFIL	FARR 30/30	1,2,3
F-2	AHU-202	2ND FLOOR - MECH ROOM	30,000	500	SECONDARY	13	24x24	22	120x72	15	5	3	0.38	0.76	CAMFIL	HFESMV13/24/24/22/10	1,2,3
PF-2	AHU-202	2ND FLOOR - MECH ROOM	30,000	500	PRE-FILTER	8	24x24	2	120x72	15	5	3	0.31	0.62	CAMFIL	FARR 30/30	1,2,3

NOTES:
1. FILTER FRAMES SHALL BE BY AIR HANDLING UNIT MANUFACTURER
2. PROVIDE A MINIMUM OF 1 SPARE OF EACH FILTER SIZE AND TYPE FOR EMERGENCY REPLACEMENT
3. FILTER PRESSURE DROP SHALL BE RECORDED DURING COMMISSIONING TO ENSURE IT MEETS DESIGN SPECIFICATIONS

CUSTOM AIR HANDLING UNITS

TAG	SERVICE	LOCATION	OVERALL UNIT REQUIREMENTS				EXHAUST/ RETURN FAN TAG	FILTER TAG	AIR BLENDER TAG	HEATING COIL TAG	COOLING COIL TAG	SUPPLY FAN TAG	OVERALL UNIT DATA		MANUFACTURER	MODEL NUMBER	REMARKS
			MINIMUM OUTSIDE AIRFLOW (CFM)	EQUIPMENT AIRFLOW CAPACITY (CFM)	SYSTEM REQUIRED AIRFLOW (CFM)	EXTERNAL STATIC PRESSURE (IN WG)							OVERALL DIMENSIONS W x H x L (IN x IN x IN)	OPERATING WEIGHT (LBS)			
AHU-201	1ST & 2ND FLOOR EAST	2ND FLOOR - MECH ROOM	6,000	30,000	27,860	2.50	RF-1	PF-1 / F-1	CB-1	HC-1	CC-1	SF-1	126x105x190	9,698	NORTEK	KNOCKDOWN	1,2
AHU-202	1ST & 2ND FLOOR EAST	2ND FLOOR - MECH ROOM	6,000	30,000	26,000	2.50	RF-2	PF-2 / F-2	CB-2	HC-2	CC-2	SF-2	126x105x190	9,698	NORTEK	KNOCKDOWN	1,2

NOTES:
1. AIR HANDLING UNIT SHALL MEET ALL PERFORMANCE REQUIREMENTS INDICATED IN ALL APPLICABLE EQUIPMENT SCHEDULES AND AS SPECIFIED
2. PROVIDE WITH FACTORY INSTALLED SINGLE POINT POWER PANELS WITH INDIVIDUAL VFD'S

AIRFLOW MEASURING STATION

TAG	SERVICE	LOCATION	TYPE	AIRFLOW		DIMENSIONS		# OF PROBES	# OF SENSORS PER PROBE	MANUFACTURER	MODEL NUMBER	REMARKS
				MINIMUM (CFM)	MAXIMUM (CFM)	DUCT W x L (IN x IN)	FAN INLET (IN DIA)					
AFMS-OA1	AHU-201	2ND FLOOR - MECH ROOM	DUCT-MOUNTED	6000	9000	36x96	--	2	8	EBTRON	GTC116e-P+	1,2
AFMS-RA1-1	AHU-201	2ND FLOOR - MECH ROOM	DUCT-MOUNTED	2285	9140	54x26	--	2	6	EBTRON	GTC116e-P+	1,2
AFMS-RA1-2	AHU-201	2ND FLOOR - MECH ROOM	DUCT-MOUNTED	1730	6920	72x18	--	2	6	EBTRON	GTC116e-P+	1,2
AFMS-SA1	AHU-201	2ND FLOOR - MECH ROOM	FAN INLET	10000	30000	--	26	1	4	EBTRON	GTC108e-F/A4	1,2
AFMS-OA2	AHU-202	2ND FLOOR - MECH ROOM	DUCT-MOUNTED	6000	9000	36x96	--	2	8	EBTRON	GTC116e-P+	1,2
AFMS-RA2-1	AHU-202	2ND FLOOR - MECH ROOM	DUCT-MOUNTED	3130	12540	36x42	--	2	6	EBTRON	GTC116e-P+	1,2
AFMS-RA2-2	AHU-202	2ND FLOOR - MECH ROOM	DUCT-MOUNTED	3650	14610	64x28	--	2	7	EBTRON	GTC116e-P+	1,2
AFMS-SA2	AHU-202	2ND FLOOR - MECH ROOM	FAN INLET	10000	30000	--	26	1	4	EBTRON	GTC108e-F/A4	1,2

NOTES:
1. INSTALL PER MANUFACTURER'S INSTRUCTIONS
2. LOCAL REPRESENTATIVE MUST MEET ON-SITE TO LOCATE EQUIPMENT PRIOR TO ORDERING

AIR

TAG	SERVICE	LOCATION	TOTAL AIRFLOW (CFM)	FACE VELOCITY (FPM)	MAXIMUM PRESSURE DROP (IN WG)	PHYSICAL CHARACTERISTICS			MANUFACTURER	MODEL NUMBER	REMARKS
						QTY.	BLENDER HEIGHT (IN)	BLENDER WIDTH (IN)			
CB-1	AHU-201	2ND FLOOR - MECH ROOM	30,000	1250	0.37	3	30	30	BLENDER PRODUCTS	ABS30	1
CB-2	AHU-202	2ND FLOOR - MECH ROOM	30,000	1250	0.37	3	30	30	BLENDER PRODUCTS	ABS30	1

NOTES:
1. PRESSURE DROP SHALL NOT EXCEED SCHEDULED VALUE

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SEAL

MECHANICAL SCHEDULES

2ND FLOOR AHU REPLACEMENT
Skokie Public Library
5215 Oakton St.
Skokie, IL 60077

ISSUES & REVISIONS

NO.	DESCRIPTION	DATE
1	50% OWNER REVIEW	2.11.26
2	100% OWNER REVIEW	3.04.26
3	ISSUED FOR BID	3.11.26

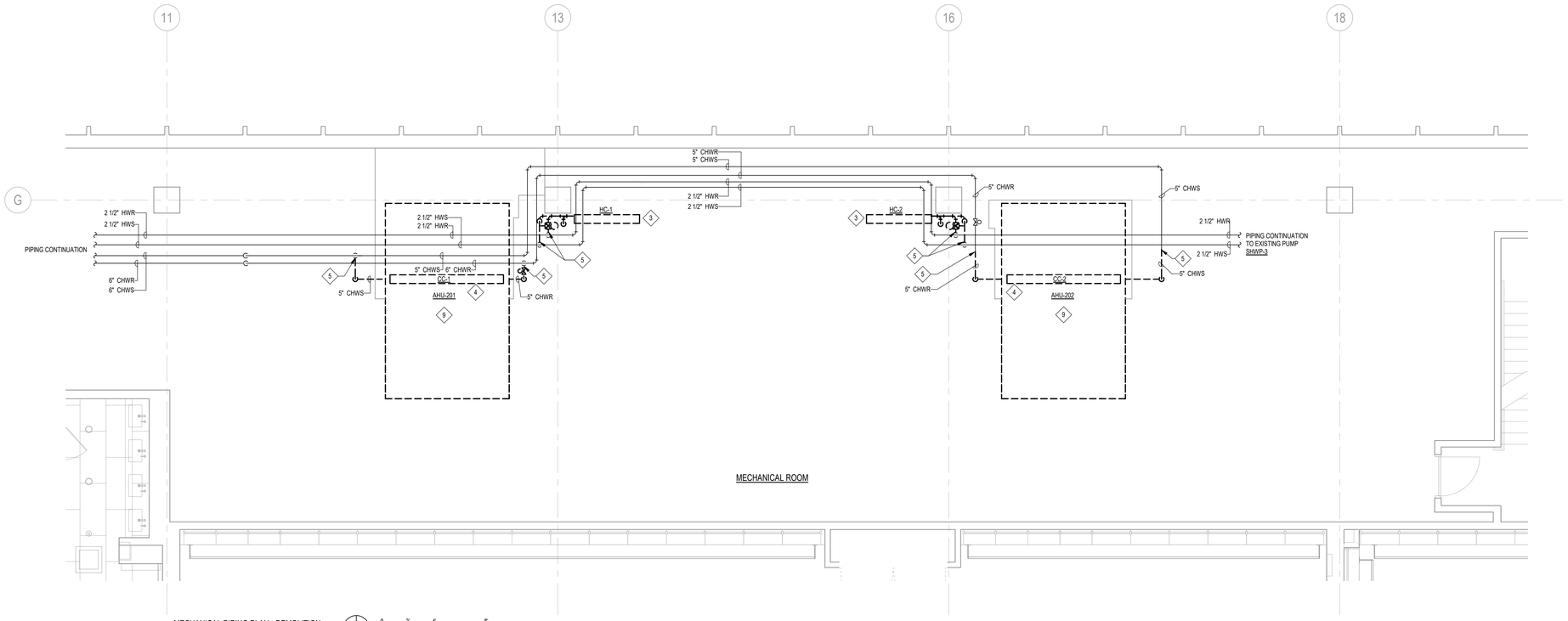
KEYPLAN

SCALE

DRAWN	CHECKED	APPROVED
BTR	APM	APM

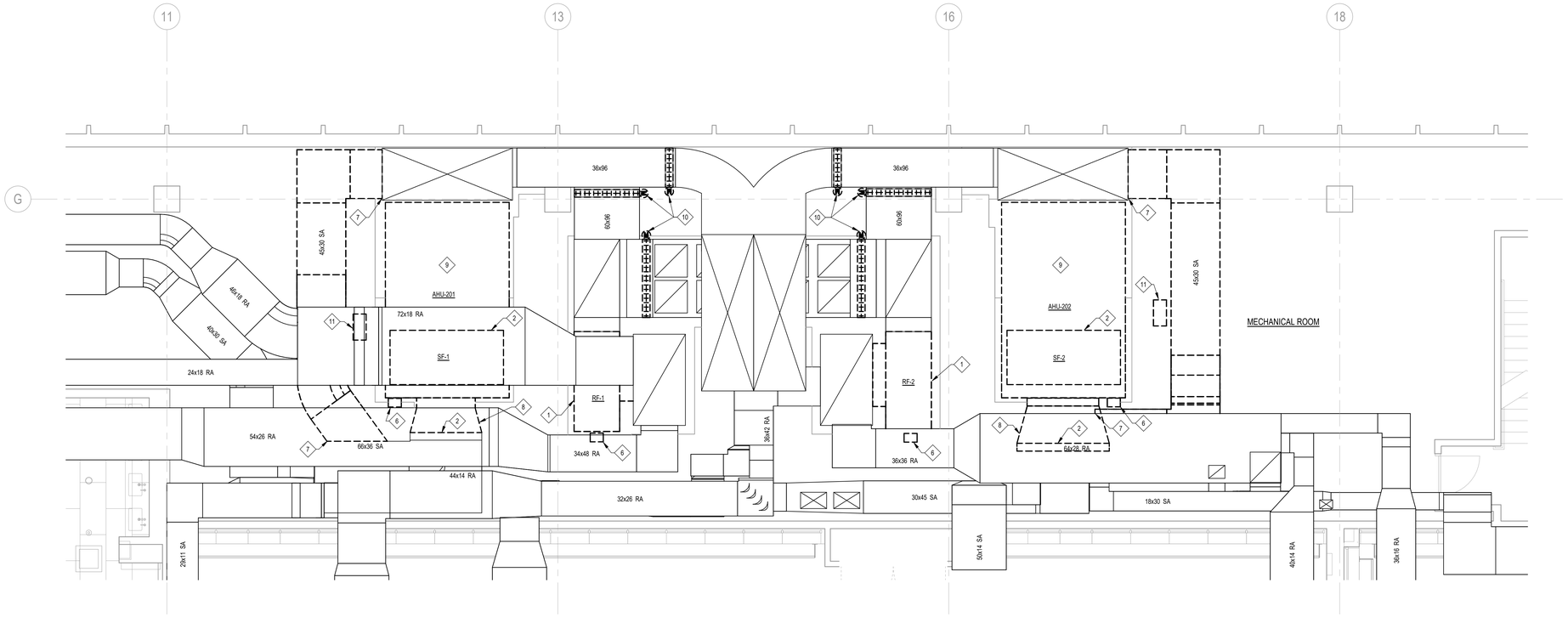
PROJECT NO.
P25-1226-00

M001



2 MECHANICAL PIPING PLAN - DEMOLITION
SCALE: 1/4" = 1'-0"

0 2' 4' 8'
0 1' 2'
1/4" = 1'-0"



1 MECHANICAL PLAN - DEMOLITION
SCALE: 1/4" = 1'-0"

0 2' 4' 8'
0 1' 2'
1/4" = 1'-0"

MECHANICAL GENERAL DEMOLITION NOTES

A. ANY INTERRUPTION OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY THE OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING OPERATION.

B. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE SCOPE, EXTENT, AND CHARACTER OF THE WORK. THE EXACT EXTENT OF DEMOLITION SHALL BE AS REQUIRED BY THE NEW WORK.

C. PERFORM DEMOLITION AS INDICATED ON DRAWINGS. DEMOLITION WORK IS SELECTIVE AND PHASED AS NEEDED TO ACCOMMODATE INSTALLATION SEQUENCE.

D. ALL MECHANICAL ITEMS TO BE REMOVED SHALL BE REMOVED COMPLETE WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, CONTROLS, ETC. CAP ALL OPEN ENDED PIPES.

DEMOLITION PLAN NOTES

1. REMOVE EXISTING RETURN FAN AND ALL ASSOCIATED ACCESSORIES. TEMPORARILY CAP EXISTING DUCTS AND PREPARE FOR NEW DUCT CONNECTIONS FOR NEW RETURN FAN WALL. COORDINATE WITH CONSTRUCTION PHASING. ONE AIR HANDLING UNIT SHALL REMAIN OPERATIONAL AT ALL TIMES DURING CONSTRUCTION.
2. REMOVE EXISTING SUPPLY FAN AND ENTIRE UNIT CASING AS SHOWN INCLUDING ALL COMPONENTS. PREPARE FOR NEW AIR HANDLING UNIT IN EXISTING AIR HANDLING UNIT LOCATION. REMOVE DUCT CONNECTIONS BACK TO POINT SHOWN AND TEMPORARILY CAP DURING CONSTRUCTION. COORDINATE WITH CONSTRUCTION PHASING. ONE AIR HANDLING UNIT SHALL REMAIN OPERATIONAL AT ALL TIMES DURING CONSTRUCTION.
3. REMOVE EXISTING PRE-HEAT COIL AND ALL ASSOCIATED PIPING CONNECTIONS INCLUDING ISOLATION VALVE BACK TO MAIN AND TEMPORARILY CAP. PREPARE ASSOCIATED PIPING FOR NEW CONNECTION TO NEW COIL.
4. REMOVE EXISTING COOLING COIL AND ASSOCIATED PIPING AND ACCESSORIES. REMOVE PIPING BACK TO MAIN AND TEMPORARILY CAP. SALVAGE EXISTING PICV VALVE AND USE FOR NEW PIPING CONNECTIONS TO NEW COIL.
5. REMOVE PIPING AND ACCESSORIES BACK TO MAIN AT LOCATION AS SHOWN.
6. REMOVE EXISTING VFD AND ALL ASSOCIATED ACCESSORIES INCLUDING CONDUITS, CONTROLS, AND SUPPORTS.
7. REMOVE BY-PASS DUCT IN ITS ENTIRETY INCLUDING ALL SUPPORTS AND ACCESSORIES. CAP EXISTING DUCT CONNECTIONS.
8. REMOVE EXISTING DUCT STATIC PRESSURE SENSOR AND ASSOCIATED WIRING AND CONTROLS. PREPARE FOR NEW STATIC PRESSURE SENSOR.
9. PROVIDE PRE-CONSTRUCTION TEST AND BALANCE REPORT ON EXISTING AIR AND HYDRONIC SYSTEMS ASSOCIATED WITH THE EXISTING AIR HANDLING UNITS.
10. REMOVE EXISTING ELECTRONIC MOTORIZED DAMPER. TEMPORARILY CAP DUCTWORK AND PREPARE FOR NEW DAMPER.
11. REMOVE EXISTING CONTROLS PANEL. REMOVE ALL ASSOCIATED PANEL SUPPORTS. CONDUIT SHALL BE TEMPORARILY CAPPED AND RE-ROUTED FOR NEW PANEL LOCATION. TEMPERATURE CONTROLS CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR. COORDINATE DEMOLITION SCHEDULE WITH OWNER.

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MECHANICAL SECOND FLOOR PLAN - DEMOLITION

2ND FLOOR AHU REPLACEMENT
Skokie Public Library
5215 Oakton St.
Skokie, IL 60077

ISSUES & REVISIONS

NO.	DESCRIPTION	DATE
1	50% OWNER REVIEW	2.11.26
2	100% OWNER REVIEW	3.04.26
3	ISSUED FOR BID	3.11.26

KEYPLAN

N

SCALE
As indicated

DRAWN	CHECKED	APPROVED
BTR	APM	APM

PROJECT NO.
P25-1226-00

MD102

MECHANICAL GENERAL DEMOLITION NOTES

A. ANY INTERRUPTION OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY THE OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING OPERATION.

B. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE SCOPE, EXTENT, AND CHARACTER OF THE WORK. THE EXACT EXTENT OF DEMOLITION SHALL BE AS REQUIRED BY THE NEW WORK.

C. PERFORM DEMOLITION AS INDICATED ON DRAWINGS. DEMOLITION WORK IS SELECTIVE AND PHASED AS NEEDED TO ACCOMMODATE INSTALLATION SEQUENCE.

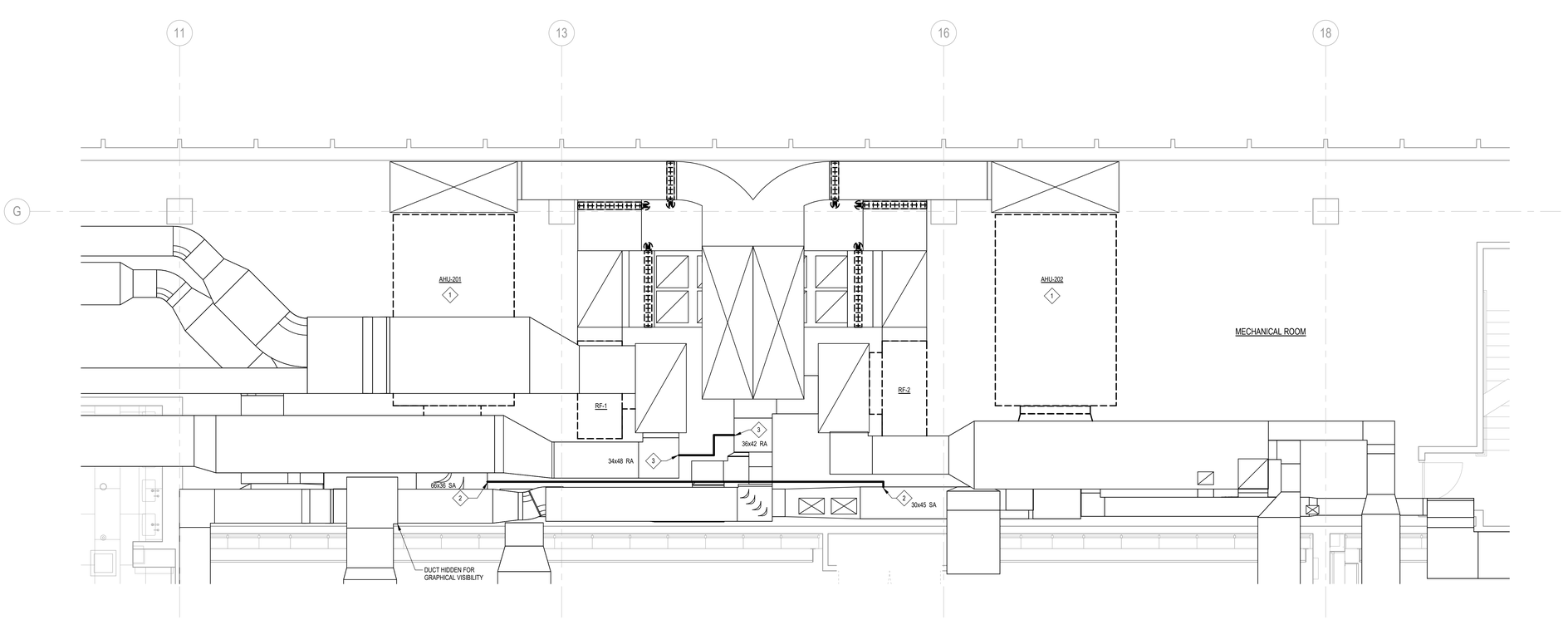
D. ALL MECHANICAL ITEMS TO BE REMOVED SHALL BE REMOVED COMPLETE WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, CONTROLS, ETC. CAP ALL OPEN ENDED PIPES.

PHASING GENERAL NOTES

1. PHASE 1 (FIRST AHU REPLACEMENT):
   - A. BEFORE DEMOLITION OF FIRST AHU CONTRACTOR SHALL INSTALL ALL REQUIRED CROSS CONNECT DUCTWORK, DAMPERS AND SUPPORTS.
   - B. COORDINATE TEMPORARY CONTROLS OPERATION WITH BAS CONTRACTOR.
   - C. REMAINING OPERATIONAL AHU SHALL BE CONFIGURED TO SERVE BOTH AREAS THROUGH THE CROSS-CONNECTS AT REDUCED CAPACITY.
   - D. PROVIDE TEST AND BALANCE REPORT OF FIRST AHU REPLACEMENT UNDER TEMPORARY PHASING AIRFLOW.
2. PHASE 2 (SECOND AHU REPLACEMENT):
   - A. AFTER FIRST NEW AHU IS INSTALLED, THE NEW AHU SHALL BE FULLY INSTALLED, STARTED, AND INTEGRATED INTO BAS.
   - B. OPERATION OF NEW AHU SHALL BE VERIFIED PRIOR TO DEMOLITION OF SECOND AHU
   - C. CROSS-CONNECT DUCTWORK SHALL REMAIN ACTIVE UNTIL SECOND AHU REPLACEMENT IS COMPLETE.
3. POST CONSTRUCTION:
   - A. UPON COMPLETION OF BOTH AHU INSTALLATIONS, ALL TEMPORARY CROSS-CONNECT DUCTWORK SHALL BE REMOVED. ALL CROSS-CONNECT DAMPERS SHALL BE FULLY CLOSED AND LOCKED.
   - B. CONTRACTOR SHALL PERFORM FINAL TESTING AND BALANCING UNDER NORMAL OPERATING CONDITIONS WITH BOTH AHU'S RUNNING INDEPENDENTLY. SUBMIT TAB REPORT WITH TEMPORARY PHASING AND FINAL DESIGN AIRFLOW.

(#) PHASING PLAN NOTES

1. REPLACEMENT OF AHU'S SHALL BE PERFORMED IN TWO PHASES. AT ALL TIMES DURING CONSTRUCTION, ALL SERVED AREAS SHALL REMAIN CONDITIONED. CONTRACTOR SHALL COORDINATE ALL PHASING, TEMPORARY DUCTWORK, CONTROLS, AND SHUTDOWNS WITH THE OWNER AND ENGINEER PRIOR TO DEMOLITION OF ANY EXISTING EQUIPMENT.
2. PROVIDE TEMPORARY CROSS-CONNECT SUPPLY DUCTWORK BETWEEN THE AHU-201 AND AHU-202 SUPPLY DUCTS AT LOCATION AS INDICATED. ALL CROSS-CONNECT DUCTWORK SHALL BE AIR-TIGHT, FULLY SEALED, AND INSULATED TO MATCH ADJACENT DUCTWORK. PROVIDE MANUAL BALANCING DAMPERS AT EACH CROSS CONNECT DUCT CONNECTION.
3. PROVIDE TEMPORARY CROSS-CONNECT RETURN DUCTWORK BETWEEN THE AHU-201 AND AHU-202 RETURN DUCTS AT LOCATION AS INDICATED. ALL CROSS-CONNECT DUCTWORK SHALL BE AIR-TIGH, FULLY SEALED, AND INSULATED TO MATCH ADJACENT DUCTWORK. PROVIDE MANUAL BALANCING DAMPERS AT EACH CROSS CONNECT DUCT CONNECTION. CROSS-CONNECT SHALL BE TWO (2) 36" ROUND FLEX DUCTS OR EQUVALENT FREE AREA.



1 MECHANICAL PLAN - TEMPORARY
SCALE: 1/4" = 1'-0"

0 2' 4' 8'
0 1/4" = 1'-0" 2'

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MECHANICAL SECOND FLOOR PLAN - TEMPORARY

2ND FLOOR AHU REPLACEMENT
Skokie Public Library
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ISSUES & REVISIONS

NO.	DESCRIPTION	DATE
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3	ISSUED FOR BID	3.11.26

KEYPLAN

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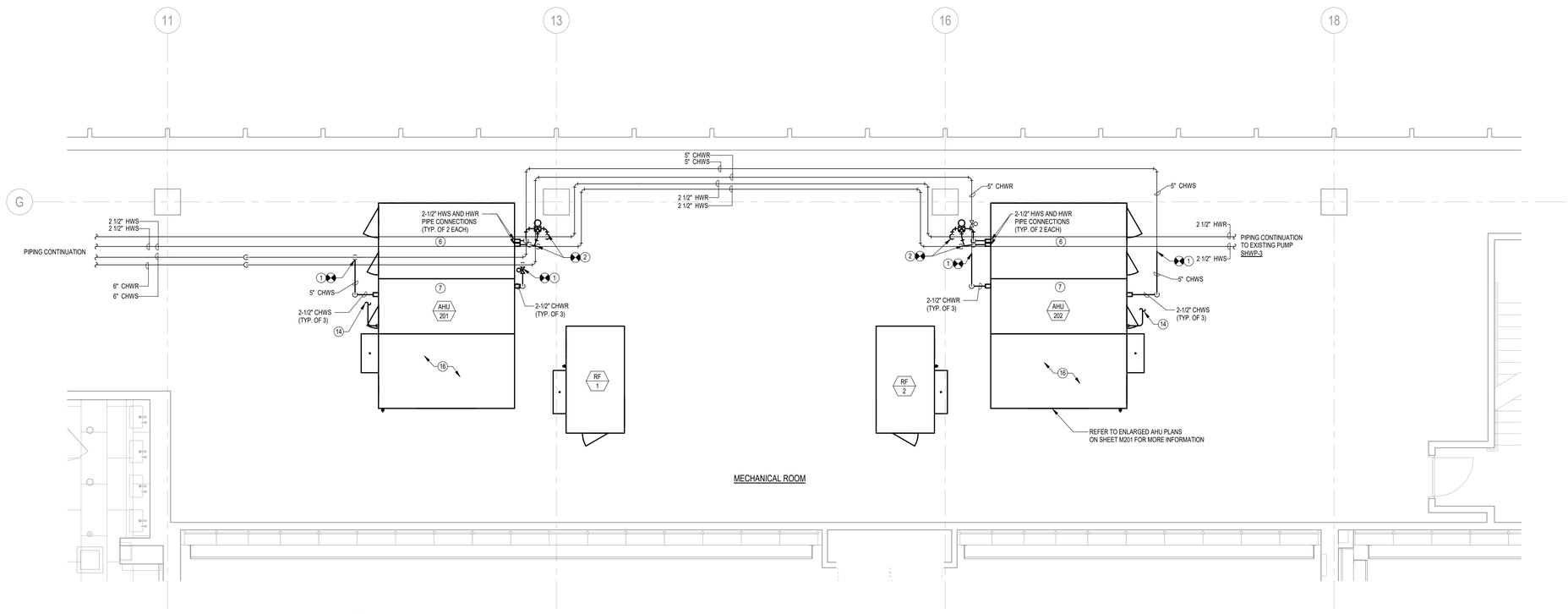
SCALE
As indicated

DRAWN	CHECKED	APPROVED
BTR	APM	APM

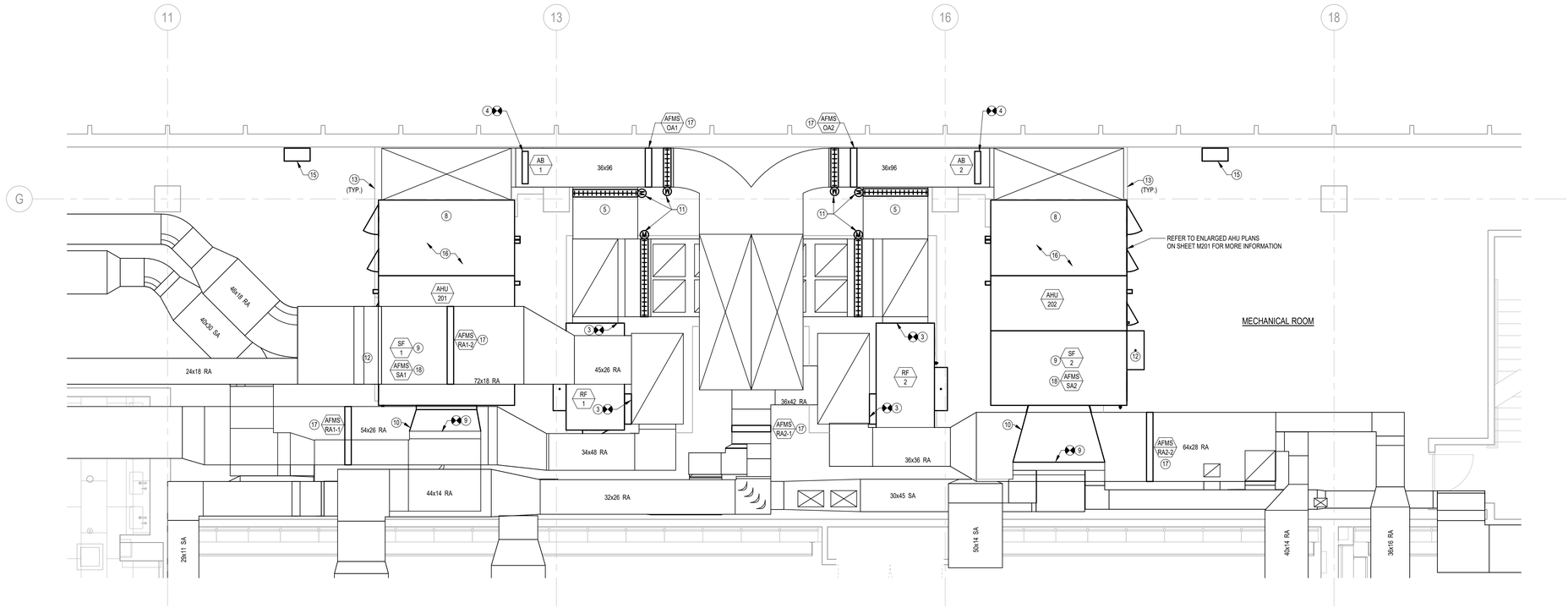
PROJECT NO.
P25-1226-00

MD103



2 MECHANICAL PIPING PLAN - NEW WORK
SCALE: 1/4" = 1'-0"

0 2' 4' 8'
0 1/4" = 1'-0" 2"



1 MECHANICAL PLAN - NEW WORK
SCALE: 1/4" = 1'-0"

0 2' 4' 8'
0 1/4" = 1'-0" 2"

MECHANICAL GENERAL CONSTRUCTION NOTES

A. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE SCOPE, EXTENT, AND CHARACTER OF THE WORK. PROVIDE PIPING SYSTEMS COMPLETE AND PER APPLICABLE CODES INCLUDING REQUIRED COMPONENTS AND OFFSETS REQUIRED TO AVOID THE STRUCTURE, DUCTWORK, ETC.

B. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE BUILDING CODES AND LOCAL ZONING CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS THE CONSTRUCTION DOCUMENTS SHALL GOVERN.

C. PERFORM WORK IN ACCORDANCE WITH OWNER'S SITE RULES AND REGULATIONS TO MINIMIZE DISRUPTIONS TO FACILITY OPERATIONS. EACH PHASE OF WORK SHALL BE DISCUSSED WITH OWNER TO DETERMINE POSSIBLE IMPACT TO FACILITY OPERATIONS.

D. PHASE WORK TO MINIMIZE DOWN TIME OF EXISTING SYSTEMS.

E. SCHEDULE ALL SHUTDOWNS IN ADVANCE WITH OWNER. PROVIDE MINIMUM 72 HOURS ADVANCE NOTICE FOR ALL SHUTDOWNS.

F. RESTORE EXISTING WORK DISTURBED BY DEMOLITION AND NEW WORK TO ORIGINAL CONDITION.

G. KEEP WORK AREAS CLEAN AT ALL TIMES. REMOVE TRASH AND DEBRIS DAILY.

H. REFER TO GENERAL CONTRACTOR'S CONSTRUCTION SCHEDULE FOR DESCRIPTION OF PHASING. COORDINATE WORK FOR EACH PHASE AND CONSTRUCTION BARRIERS FOR EACH PHASE.

I. THESE DRAWINGS HAVE BEEN PREPARED WITH CONSIDERATION GIVEN TO AVOID INTERFERENCES WITH ALL EXISTING AND NEW WORK OF ALL DISCIPLINES, HOWEVER INTERFERENCES MAY EXIST.

- DRAWINGS ARE TO BE CONSIDERED SCHEMATIC ONLY, AND ARE NOT INTENDED TO INDICATE ALL CHANGES IN DIRECTIONS AND ELEVATIONS NEITHER DO THEY INDICATE ALL NECESSARY PIPE FITTINGS AND SPECIALTIES TO BE PROVIDED.
- PIPING AND OTHER ELEMENTS MAY BE RELOCATED OR OFFSET FOR PROPER CLEARANCES. DEVIATIONS FROM DRAWINGS MUST BE INDICATED ON CONTRACTOR PREPARED SHOP DRAWINGS FOR ENGINEER'S APPROVAL.
- IT IS THE RESPONSIBILITY OF ALL CONTRACTORS TO COORDINATE THEIR WORK AND ACTIVITIES WITH ALL NEW AND EXISTING WORK TO ELIMINATE ALL INTERFERENCES. THE COST OF ANY COORDINATION DEVIATIONS TO ELIMINATE INTERFERENCES AS MENTIONED ABOVE MUST BE PART OF THE ORIGINAL CONTRACT PRICE AND SHALL NOT BE AN EXTRA COST TO THE OWNER.
- THE DESIGN INTENT, SUCH AS, PITCHES, VELOCITIES, PRESSURE DROPS, VOLTAGE DROPS, CABLE PULLING TENSIONS, ETC. CANNOT BE GREATLY ALTERED WITHOUT THE APPROVAL OF THE ENGINEER.
- "RECORD DRAWINGS" MUST BE SUBMITTED BY THE CONTRACTOR UPON COMPLETION OF WORK INSTALLATION. THESE "RECORD DRAWINGS" MUST REFLECT ALL DEVIATIONS.

J. FOR EQUIPMENT VALVING, COMPONENTS, AND PIPING ARRANGEMENT, REFER TO PIPING DETAILS.

(#) CONSTRUCTION PLAN NOTES

1. NEW CHILLED WATER PIPING CONNECTION. EXTEND PIPING FROM EXISTING PIPE TO NEW CHILLED WATER COIL AND PROVIDE WITH ALL PIPING ACCESSORIES AS SHOWN IN DETAILS AND DIAGRAMS. RE-LOCATE EXISTING PICV VALVE WITHIN NEW PIPING.
2. NEW HOT WATER PIPING CONNECTIONS. EXTEND PIPING FROM EXISTING PIPE TO NEW HEATING COIL AND PROVIDE ALL PIPING ACCESSORIES AS SHOWN IN DETAILS AND DIAGRAMS.
3. PROVIDE NEW RETURN FAN WALL AND PROVIDE DUCT CONNECTIONS AT LOCATIONS AS SHOWN. REFER TO SCHEDULES FOR FAN INFORMATION.
4. PROVIDE NEW AIR CHANNEL BLENDER IN EXISTING DUCT. REFER TO SCHEDULES FOR AIR BLENDER INFORMATION.
5. PATCH EXISTING RETURN DUCT AS NECESSARY FROM EXISTING HEATING COIL REMOVAL.
6. NEW HEATING COIL IN NEW AIR HANDLING UNIT. PROVIDE PIPING CONNECTIONS AND ALL ASSOCIATED PIPE ACCESSORIES.
7. NEW CHILLED WATER COIL IN NEW AIR HANDLING UNIT. PROVIDE PIPING CONNECTIONS AND ALL ASSOCIATED PIPE ACCESSORIES.
8. NEW FILTER RACK IN NEW AIR HANDLING UNIT. REFER TO SCHEDULES FOR FILTER INFORMATION.
9. PROVIDE NEW SUPPLY FAN WALL AND PROVIDE DUCT CONNECTIONS AT LOCATIONS AS SHOWN. REFER TO SCHEDULES FOR FAN INFORMATION.
10. PROVIDE NEW DUCT STATIC PRESSURE AND ALL ASSOCIATED WIRING AND CONTROLS.
11. PROVIDE NEW ELECTRIC MOTORIZED DAMPER WITH NEW ELECTRONIC ACTUATOR. PROVIDE ALL CONTROLS AND WIRING AS NECESSARY FOR NEW DAMPER. REPAIR EXISTING DUCT AS NECESSARY.
12. FACTORY INSTALLED SINGLE POINT POWER PANEL WITH INDIVIDUAL VFD'S.
13. PROVIDE MODIFICATIONS AS NECESSARY TO EXISTING HOUSEKEEPING PAD TO ACCOMMODATE NEW AIR HANDLING UNIT FOOTPRINT.
14. ROUTE CONDENSATE DRAIN FROM NEW AIR HANDLING UNIT TO EXISTING OPEN SITE DRAIN.
15. PROVIDE NEW TEMPERATURE CONTROLS PANEL. TIE INTO EXISTING SYSTEM.
16. PHASE ALL WORK IN ACCORDANCE TO SHEET MD103. AT ALL TIMES DURING CONSTRUCTION, ALL SERVED AREAS SHALL REMAIN CONDITIONED BY (1) AIR HANDLING UNIT.
17. INSTALL NEW AIRFLOW MEASURING STATION IN EXISTING DUCT. PRELIMINARY LOCATION SHOWN. FINAL LOCATION AND MEASUREMENTS SHALL BE COORDINATED WITH LOCAL REPRESENTATIVE DURING ON-SITE MEETING. REFER TO SCHEDULE FOR MORE INFORMATION.
18. INSTALL NEW AIRFLOW MEASURING STATION AT NEW SUPPLY FAN WALL. COORDINATE FINAL MEASUREMENTS AND INSTALLATION WITH LOCAL REPRESENTATIVE. REFER TO SCHEDULE FOR MORE INFORMATION.

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MECHANICAL SECOND FLOOR PLAN - NEW WORK

2ND FLOOR AHU REPLACEMENT

Skokie Public Library
5215 Oakton St.
Skokie, IL 60077

ISSUES & REVISIONS

NO.	DESCRIPTION	DATE
1	50% OWNER REVIEW	2.11.26
2	100% OWNER REVIEW	3.04.26
3	ISSUED FOR BID	3.11.26

KEYPLAN

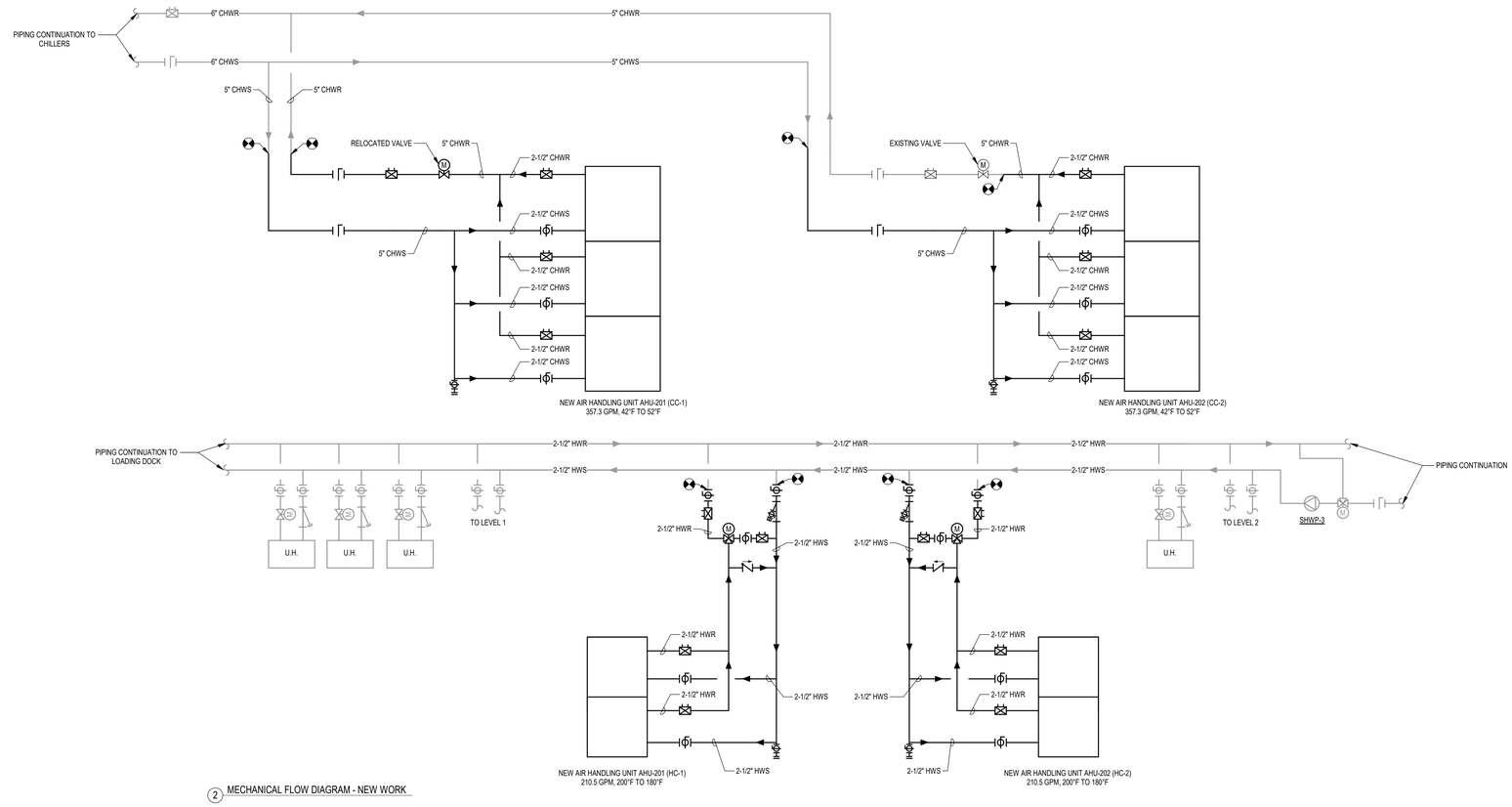
N

SCALE
As indicated

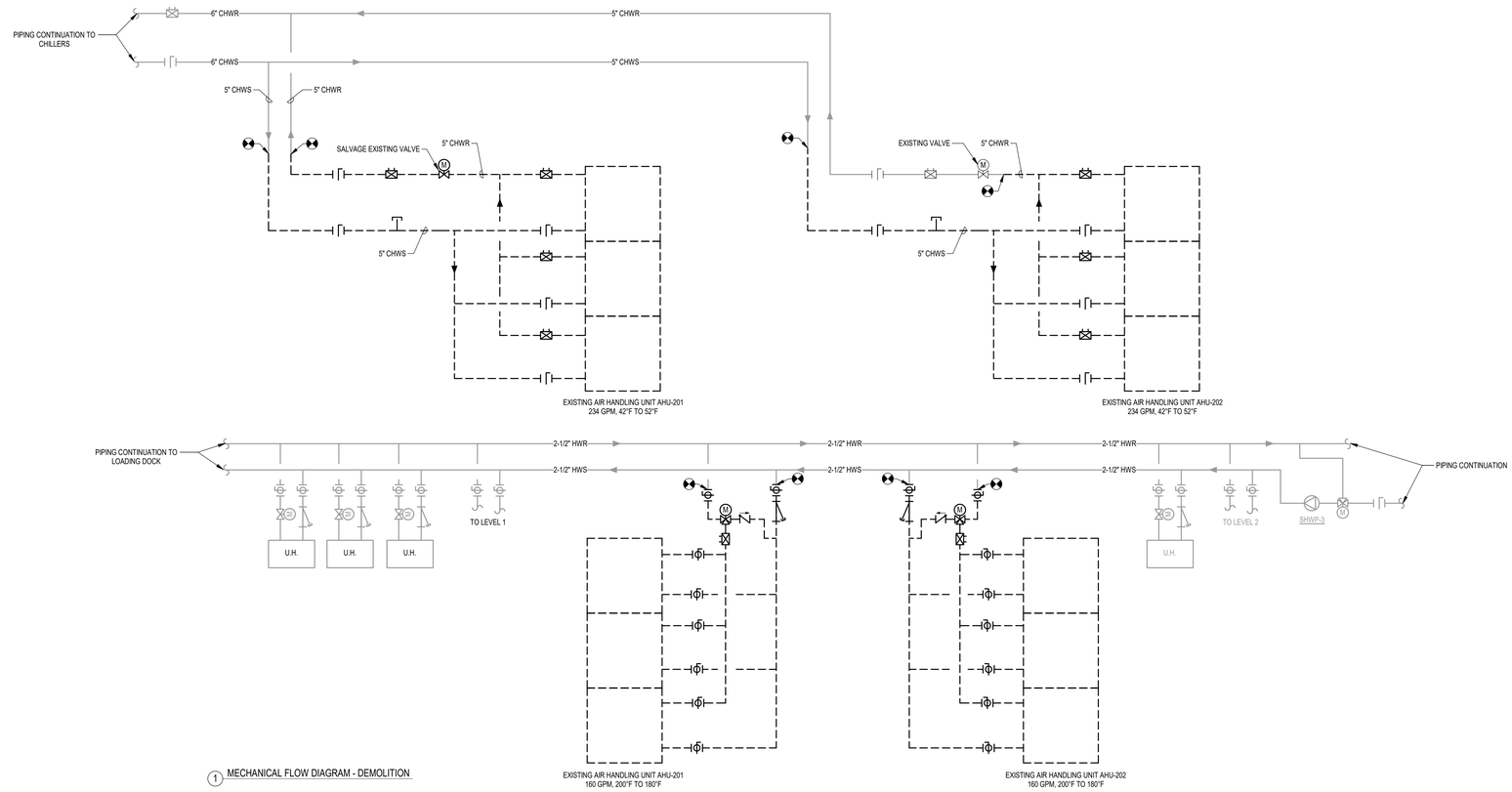
DRAWN	CHECKED	APPROVED
BTR	APM	APM

PROJECT NO.
P25-1226-00

M102



2 MECHANICAL FLOW DIAGRAM - NEW WORK



1 MECHANICAL FLOW DIAGRAM - DEMOLITION

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MECHANICAL DIAGRAMS

2ND FLOOR AHU REPLACEMENT
Skokie Public Library
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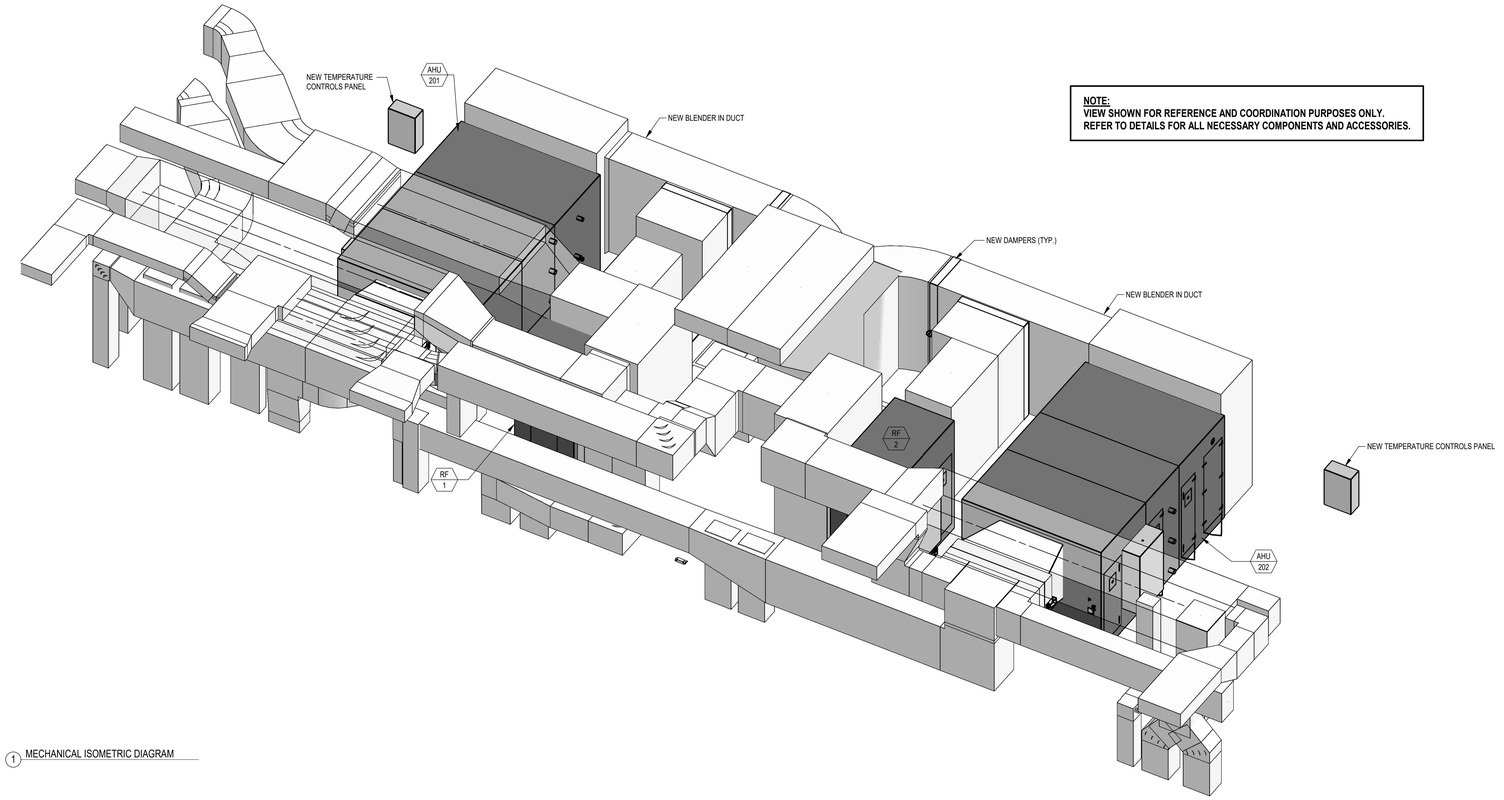
KEYPLAN

SCALE

DRAWN	CHECKED	APPROVED
BTR	APM	APM

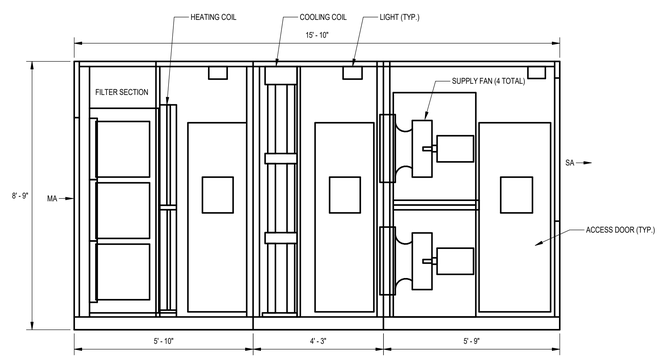
PROJECT NO.
P25-1226-00

M200

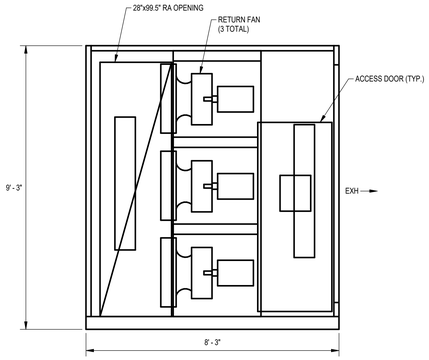


NOTE:
VIEW SHOWN FOR REFERENCE AND COORDINATION PURPOSES ONLY.
REFER TO DETAILS FOR ALL NECESSARY COMPONENTS AND ACCESSORIES.

1 MECHANICAL ISOMETRIC DIAGRAM



ELEVATION



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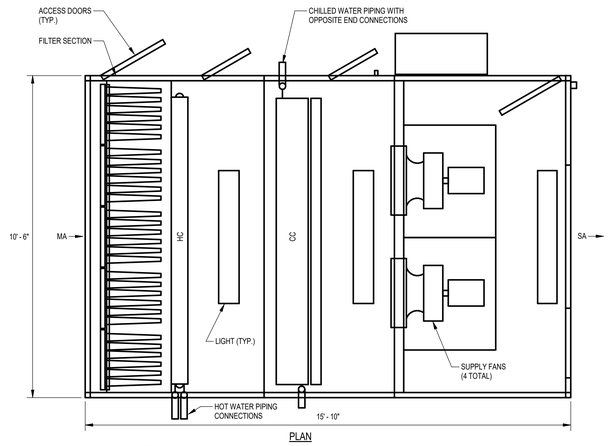
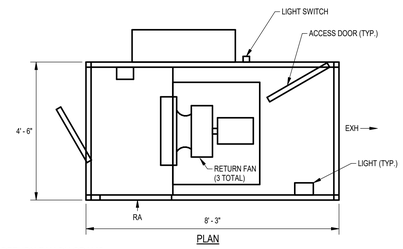


PLAN

2 AHU ENLARGED DIAGRAMS
SCALE: 1/2" = 1'-0"



PLAN

3 RETURN FAN DIAGRAMS
SCALE: 1/2" = 1'-0"

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MECHANICAL DIAGRAMS

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Skokie Public Library
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KEYPLAN

SCALE
1/2" = 1'-0"

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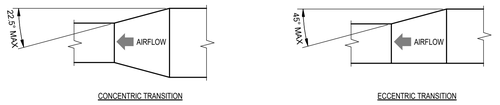
PROJECT NO.
P25-1226-00

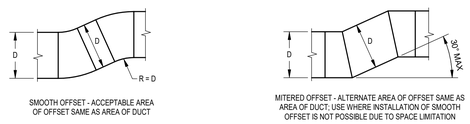
M201

EXPANDING TRANSITIONS

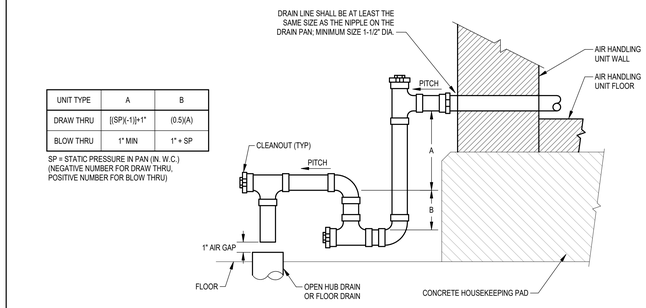
DECREASING TRANSITIONS



OFFSETS



6 DUCT TRANSITION AND OFFSET DETAILS



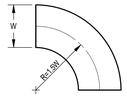
UNIT TYPE	A	B
DRAW THRU	[(SP)(-1)]+1"	(0.5)(A)
BLOW THRU	1" MIN	1" + SP

SP = STATIC PRESSURE IN PAN (IN. W.C.)
(NEGATIVE NUMBER FOR DRAW THRU,
POSITIVE NUMBER FOR BLOW THRU)

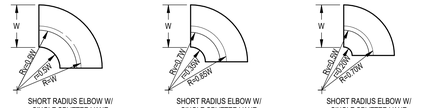
NOTES:
1. COIL MUST BE MOUNTED HIGH ENOUGH TO PERMIT TRAP TO BE INSTALLED.
2. WHERE APPLICABLE, PROVIDE STRUCTURAL STEEL AS REQUIRED TO ELEVATE AIR HANDLING UNITS TO OBTAIN REQUIRED TRAP HEIGHT.
3. DRAIN PIPE CONNECTION MUST BE LOCATED AT LOW POINT OF COOLING COIL DRAIN PAN.

3 COOLING COIL CONDENSATE DRAIN TRAP DETAIL

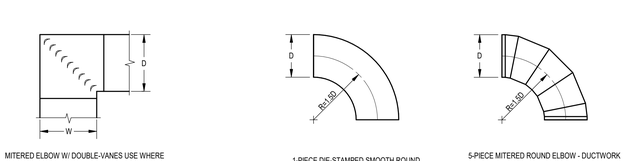
ACCEPTABLE
LONG RADIUS ELBOW



ALTERNATE
USE SHORT RADIUS ELBOW WHERE INSTALLATION OF A LONG RADIUS ELBOW IS NOT POSSIBLE DUE TO SPACE LIMITATION



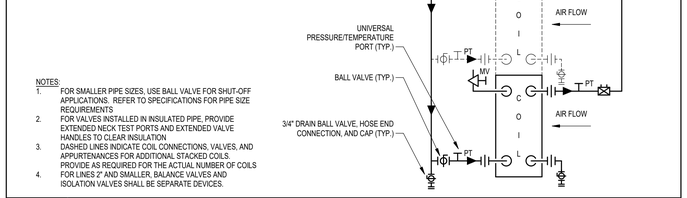
RECTANGULAR RADIUS ELBOWS



RECTANGULAR MITERED ELBOW

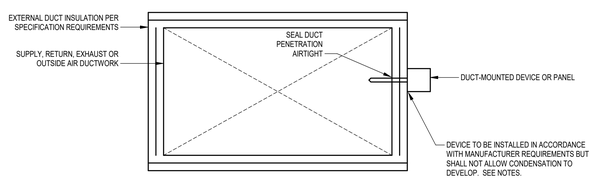
ROUND ELBOWS

5 RECTANGULAR AND ROUND DUCT ELBOW DETAILS



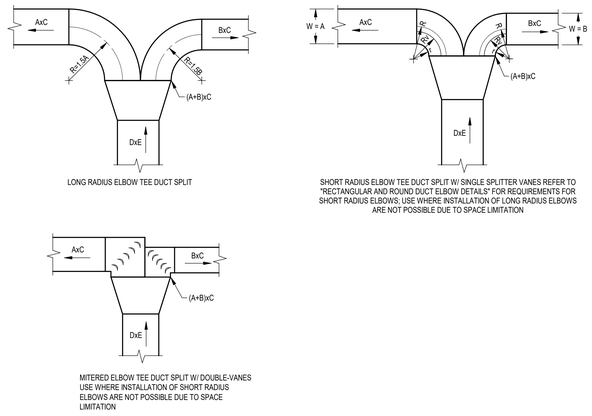
NOTES:
1. FOR VALVES INSTALLED IN INSULATED PIPE, PROVIDE EXTENDED NECK TEST PORTS AND EXTENDED VALVE HANDLES TO CLEAR INSULATION
2. DASHED LINES INDICATE COIL CONNECTIONS, VALVES, AND APPURTENANCES FOR ADDITIONAL STACKED COILS. PROVIDE AS REQUIRED FOR THE ACTUAL NUMBER OF COILS.

2 AHU-201 AND AHU-202 - HEATING COIL PIPING DETAIL



NOTES:
1. DEVICE TO BE INSTALLED ON OUTSIDE OF DUCT INSULATION.
2. SEAL VAPOR BARRIER WHERE DUCT INSULATION IS CUT OR PENETRATED.
3. PROVIDE THERMAL BREAK ON ALL METAL-TO-METAL CONNECTIONS.
4. SOLUTIONS DEEMED ACCEPTABLE DO NOT ALLOW CONDENSATION TO FORM AND ALSO MAINTAIN VAPOR BARRIER.

7 DUCT MOUNTED DEVICE DETAIL



4 RECTANGULAR DUCT TEE FITTING DETAILS

NOTES:
1. FOR SMALLER PIPE SIZES, USE BALL VALVE FOR SHUT-OFF APPLICATIONS. REFER TO SPECIFICATIONS FOR PIPE SIZE REQUIREMENTS
2. FOR VALVES INSTALLED IN INSULATED PIPE, PROVIDE EXTENDED NECK TEST PORTS AND EXTENDED VALVE HANDLES TO CLEAR INSULATION
3. DASHED LINES INDICATE COIL CONNECTIONS, VALVES, AND APPURTENANCES FOR ADDITIONAL STACKED COILS. PROVIDE AS REQUIRED FOR THE ACTUAL NUMBER OF COILS FOR LINES 2" AND SMALLER, BALANCE VALVES AND ISOLATION VALVES SHALL BE SEPARATE DEVICES.
4.

1 AHU-201 AND AHU-202 - COOLING COIL PIPING DETAIL

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SEAL

MECHANICAL DETAILS

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KEYPLAN

SCALE

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BTR	APM	APM

PROJECT NO.
P25-1226-00

M300

AHU CONTROL POINTS LIST (TYP. FOR 2)

POINT DESCRIPTION (PTS LIST)	DEVICE TAG	UNITS	WIRED POINTS				INTEGRATION POINTS									SOFTWARE	FIELD ADJ POINT	SHOW ON GRAPHIC	TREND INTERVAL	REMARKS
			AI	AO	BI	BO	AI	AO	AV	BI	BO	BV	MI	MO	MV					
AHU																				
AHU RESET SWITCH	SW-AHUX				X												X	X		
FIRE ALARM CONTROL PANEL SIGNAL	FA-AHUX				X													X		
COOLING COIL																				
COOLING COIL AIR DUCT AVERAGE TEMPERATURE	T-CC	°F	X																15 MIN	
FREEZE STAT (LOW TEMPERATURE SWITCH)	FZ-CC	ALARM/NORMAL			X															
CC CHWS TEMPERATURE	T-CCS	°F	X															X	15 MIN	
CC CHWR TEMPERATURE	T-CCR	°F	X															X	15 MIN	
DAMPERS																				
OA DAMPER COMMAND	D-OA	%OPEN		X																
EA DAMPER COMMAND	D-EA	%OPEN		X																
MIX DAMPER COMMAND	D-MIX	%OPEN		X																
OA DAMPER POSITION	D-OA		X															X	5 MIN	
FILTERS																				
FILTER DIFFERENTIAL PRESSURE TRANSMITTER	DPT-XX						X													
SCHEDULED PREFILTER PRESSURE DROP (DP100)									X							X				
PREFILTER ALARM SETPOINT (DPX)									X							X				
HEATING COIL																				
HEATING COIL AIR DUCT AVERAGE TEMPERATURE	T-HC	F	X																	
HC HWS TEMPERATURE	T-HCS	F	X																	
HC HWR TEMPERATURE	T-HCR	F	X																	
MIXED AIR																				
MIXED AIR DUCT AVERAGE TEMPERATURE	T-MA	°F	X																15 MIN	
OUTSIDE AIR																				
OUTSIDE AIRFLOW	AFMS-OA	CFM	X															X	5 MIN	
OUTSIDE AIR TEMPERATURE	T/H-OA	°F	X															X	5 MIN	EXISTING TO REMAIN
OUTSIDE AIR HUMIDITY	T/H-OA		X															X	15 MIN	EXISTING TO REMAIN
RETURN AIR																				
RETURN AIR TEMPERATURE	T/H-RA	°F	X															X	5 MIN	EXISTING TO REMAIN
RETURN AIR HUMIDITY	T/H-RA	%RH	X															X	15 MIN	
RETURN SMOKE DETECTOR	SD-RA	NORMAL/ALARM			X															
RETURN AIRFLOW	AFMS-RA	CFM	X															X	5 MIN	
RETURN AIR CO2	CO2-RA	NORMAL/ALARM	X																	
DCV ENABLE	CO2-RA											X				X				
RETURN FAN (TYP. OF 3)																				
FAN VFD WARNING STATUS	RF-X											X				X				
VFD FAULT STATUS	RF-X											X				X				
VFD RUN/STOP STATUS	RF-X											X				X				
VFD HAND/AUTO STATUS	RF-X											X				X				
VFD OUTPUT POWER	RF-X								X							X				
VFD POWER CONSUMPTION	RF-X	kWh							X							X				
VFD OUTPUT FREQUENCY	RF-X	Hz							X							X				
MINIMUM SPEED SETPOINT	RF-X	%SPEED										X				X				
RETURN FAN START/STOP	RF-X					X														
RETURN FAN VFD SPEED	RF-X			X																
FAN STATUS	RF-X				X															
SAFETIES																				
SUPPLY FAN HIGH PRESSURE SWITCH STATUS	PS-SFI	NORMAL/ALARM			X															
SUPPLY FAN LOW PRESSURE SWITCH STATUS	PS-SFO	NORMAL/ALARM			X															
RF OUTLET PRESSURE SWITCH	PS-ROUT	NORMAL/ALARM			X															
RF INLET PRESSURE SWITCH	PS-RIN	NORMAL/ALARM			X															
SUPPLY AIR																				
SUPPLY AIR TEMPERATURE	T/H-SA	°F	X														X	X	5 MIN	
SUPPLY AIR HUMIDITY	T/H-SA	%RH	X																15 MIN	
SUPPLY SMOKE DETECTOR STATUS	SD-SA	NORMAL/ALARM			X															
SUPPLY AIRFLOW	AFMS-SA	CFM	X															X	5 MIN	
DIFFERENTIAL PRESSURE TRANSMITTER	DPT-01						X										X		15 MIN	
DUCT STATIC PRESSURE	SP-01	WC*	X														X	X	5 MIN	
SUPPLY FAN (TYP. OF 4)																				
FAN VFD WARNING STATUS	SF-X											X				X				
VFD FAULT STATUS	SF-X											X				X				
VFD RUN/STOP STATUS	SF-X											X				X				
VFD HAND/AUTO STATUS	SF-X											X				X				
VFD OUTPUT POWER	SF-X								X							X				
VFD POWER CONSUMPTION	SF-X	kWh							X							X				
VFD OUTPUT FREQUENCY	SF-X	Hz							X							X				
MINIMUM SPEED SETPOINT	SF-X	%SPEED										X				X				
FAN START/STOP	SF-X					X														
FAN VFD SPEED	SF-X			X																
FAN STATUS	SF-X				X															
VALVES																				
CHW VALVE COMMAND	V-CHW	%OPEN	X																	
CHW VALVE POSITION	V-CHW		X															X	5 MIN	
HW VALVE COMMAND	V-HC	%OPEN		X																
HW VALVE POSITION	V-HC		X																	

ABBREVIATIONS

DESIGNATION	DESCRIPTION
AI	ANALOG INPUT
AO	ANALOG OUTPUT
AV	ANALOG VALUE
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
DV	DIGITAL VALUE
MI	MULTI-STATE INPUT
MO	MULTI-STATE OUTPUT
MV	MULTI-STATE VALUE
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
NSR	NON-SPRING RETURN (FAIL LAST POSITION)
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NCTC	NORMALLY CLOSED TIMED CLOSED
NCTO	NORMALLY CLOSED TIMED OPEN
NOTC	NORMALLY OPEN TIMED CLOSED
NOTO	NORMALLY OPEN TIMED OPEN
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW

CONTROL COMPONENTS

DESIGNATION	DESCRIPTION
AFMS	AIRFLOW MEASURING STATION
	FAN
C H C	COIL - COOLING COIL, HEATING COIL
	ELECTRIC ACTUATED OPPOSED BLADE CONTROL DAMPER
	ELECTRIC ACTUATED PARALLEL BLADE CONTROL DAMPER
M	ELECTRIC ACTUATED 2-WAY CONTROL VALVE
M	ELECTRIC ACTUATED 3-WAY CONTROL VALVE
	FILTER
	HUMIDIFIER
M	MOTOR
CS	MOTOR CURRENT SENSOR
M	MOTOR STARTER
M	PNEUMATIC ACTUATED OPPOSED BLADE CONTROL DAMPER
M	PNEUMATIC ACTUATED PARALLEL BLADE CONTROL DAMPER
M	PENUMATIC ACTUATED 2-WAY CONTROL VALVE
M	PNEUMATIC ACTUATED 3-WAY CONTROL VALVE
	PUMP
	SOLENOID 2-WAY VALVE
VFD	VARIABLE FREQUENCY DRIVE

SYSTEM DEVICES

DESIGNATION	DESCRIPTION
REFER TO TEMPERATURE CONTROL SPECIFICATIONS FOR SYSTEM DEVICE TYPES AND APPLICATIONS	
CO2	CARBON DIOXIDE SENSOR
CO	CARBON MONOXIDE SENSOR
DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
EP	ELECTRIC PNEUMATIC RELAY
EPT	ELECTRIC PNEUMATIC TRANSDUCER
R	ELECTRIC RELAY
SM	FIRE ALARM SYSTEM - ADDRESSABLE CONTROL MODULE
IM	FIRE ALARM SYSTEM - ADDRESSABLE INTERFACE MODULE
FM	FLOW METER
FS	FLOW SWITCH
FZ	FREEZESTAT
H HT	HUMIDITY SENSOR
WL	LEVEL SWITCH OR TRANSMITTER
LS	LIMIT SWITCH
	LINE - DDC (EXISTING/NEW)
	LINE - ELECTRIC (EXISTING/NEW)
	LINE - PNEUMATIC (EXISTING/NEW)
OCC	OCCUPANCY SENSOR
	PILOT LIGHT OR BEACON - R-RED, A-AMBER, B-BLUE, G-GREEN
PE	PNEUMATIC ELECTRIC RELAY
PS	PRESSURE SWITCH
PT	PRESSURE TRANSMITTER
	SELECTOR SWITCH (N = NUMBER OF SELECTIONS)
AI	DDC SIGNAL, ANALOG INPUT
AO	DDC SIGNAL, ANALOG OUTPUT
DI	DDC SIGNAL, DIGITAL INPUT
DO	DDC SIGNAL, DIGITAL OUTPUT
A	PACKAGED CONTROL SIGNAL, ANALOG INPUT
AO	PACKAGED CONTROL SIGNAL, ANALOG OUTPUT
D	PACKAGED CONTROL SIGNAL, DIGITAL INPUT
DO	PACKAGED CONTROL SIGNAL, DIGITAL OUTPUT
SD SA	SMOKE DETECTOR
SP	STATIC PRESSURE SENSOR
SPT	STATIC PRESSURE TRANSMITTER
SW	SWITCH
T	TEMPERATURE SENSOR - DUCT MOUNTED RIGID ELEMENT
T	TEMPERATURE SENSOR - DUCT MOUNTED FLEXIBLE ELEMENT
T	TEMPERATURE SENSOR - RIGID ELEMENT IN WELL OR STRAP ON BULB
T	TEMPERATURE SENSOR - SPACE MOUNTED
VS	VELOCITY SENSOR
VB	VIBRATION SWITCH

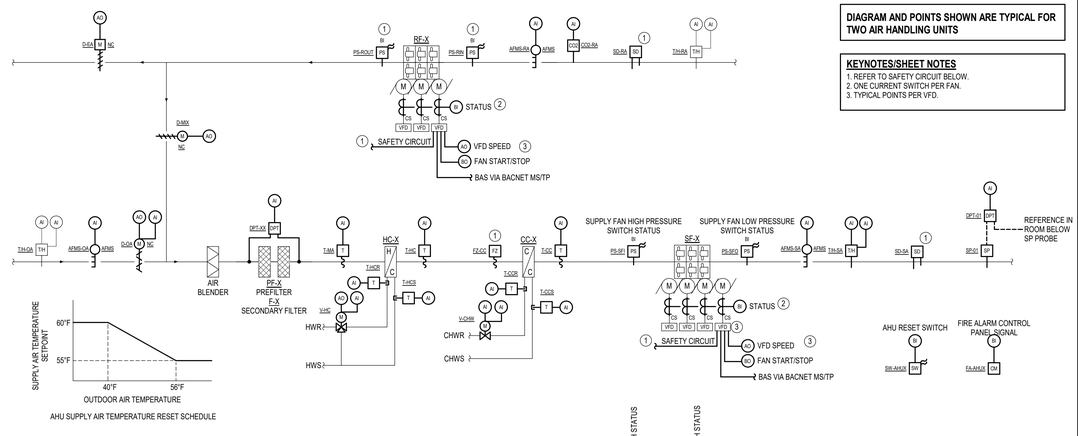
TEMPERATURE CONTROL GENERAL NOTES

1. THESE GENERAL NOTES SHALL BE APPLICABLE FOR ALL TEMPERATURE CONTROL DRAWINGS.
2. "PROVIDE" IS DEFINED AS "FURNISH AND INSTALL."
3. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL APPLICABLE CODES AND STANDARDS.
4. ALL TEMPERATURE CONTROL HARDWARE AND SOFTWARE SHALL BE APPROVED BY OWNER'S IT OR SECURITY GROUP AND COMPLY WITH OWNER'S IT SECURITY REQUIREMENTS.
5. ALL CONTROL SCHEMATICS AND WIRING DIAGRAMS ARE FOR THE CLARIFICATION OF EQUIPMENT INTERLOCKING FUNCTIONS AND THE INTERFACE OF VARIOUS CONTRACTORS' WORK AND SHALL NOT BE MISTAKEN AS SHOP DRAWINGS FOR ACTUAL INSTALLATION.
6. CONTRACTOR SHALL PROVIDE DDC CONTROLLERS AS REQUIRED TO MEET INTENT OF DESIGN DOCUMENTS. REFER TO THE MECHANICAL PLANS FOR THE DDC FUNCTIONS THAT APPLY TO EACH MECHANICAL SYSTEM.
7. ALL TC PROVIDED COMPONENTS AND ALL CONTRACTOR INSTALLED WIRING SHALL BE LABELED PER SPECIFICATIONS.
8. ALL WIRING AND SYSTEM CONTROL VOLTAGES SHALL BE IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATION AND THE ELECTRICAL SPECIFICATIONS.
9. VARIABLE SPEED DRIVES, FAN AND PUMP MOTOR STARTERS, STARTER WIRING, CONTROL VOLTAGE TRANSFORMERS AND ASSOCIATED POWER WIRING SHALL BE PROVIDED BY OTHER TRADES.
10. ALL DDC AND CONTROL INTERLOCK WIRING SHALL BE BY TC CONTRACTOR UNLESS OTHERWISE NOTED. TC CONTRACTOR SHALL COORDINATE WITH VFD AND MOTOR STARTER SUPPLIERS TO DETERMINE EXACT WIRING REQUIREMENTS AND TERMINATION POINTS.
11. ALL DDC AND CONTROL INTERLOCK WIRING BETWEEN COMPONENTS SHALL BE INSTALLED WITHOUT INTERMEDIATE STOPS. WIRE SPLICING AT INTERMEDIATE TERMINAL STRIPS IS NOT ACCEPTABLE.
12. ALL ELECTRICAL WIRING AND RACEWAY SYSTEMS SHALL COMPLY WITH TEMPERATURE CONTROL WIRING SPECIFICATION REQUIREMENTS. TWO SEPARATE ELECTRICAL RACEWAY SYSTEMS SHALL BE PROVIDED: ONE FOR AC WIRING AND THE OTHER FOR DC WIRING.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER SUPPLIES REQUIRED FOR TC SYSTEM UNLESS OTHERWISE NOTED. REFER TO ELECTRICAL PANEL SCHEDULES FOR SPARE CIRCUITS OR CIRCUITS DEDICATED TO TEMPERATURE CONTROLS. COORDINATE CIRCUIT USE WITH ELECTRICAL CONTRACTOR.
14. CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL FIELD MOUNTED COMPONENTS.
15. CONTRACTOR SHALL PROVIDE AUXILIARY PANELS FOR REQUIRED PANEL MOUNTED EQUIPMENT SUCH AS RELAYS, TRANSDUCERS, CONTROL TRANSFORMERS, ETC. AUXILIARY PANELS SHALL BE LOCATED NEXT TO ASSOCIATED DDC PANEL.
16. REMOTELY MOUNTED FIELD DEVICES SUCH AS RELAYS, CONTROL TRANSFORMERS, ETC. SHALL BE HOUSED IN AN ENCLOSURE PROVIDED BY THE CONTRACTOR.
17. CONTROL TRANSFORMERS WHEN REQUIRED SHALL BE SIZED FOR 150% OF THE ACTUAL LOAD.
18. CURRENT SWITCHES USED FOR OPERATIONAL STATUS SHALL HAVE CURRENT THRESHOLD SETPOINT ADJUSTED TO INDICATE BELT OR DRIVE FAILURE.
19. ALL CONTROL VALVES IDENTIFIED ON TC DRAWINGS SHALL BE FURNISHED BY CONTRACTOR UNLESS OTHERWISE NOTED.
20. ALL CONTROL VALVES FURNISHED BY THE TC CONTRACTOR SHALL BE INSTALLED BY THE MECHANICAL CONTRACTOR. ALL PIPE PENETRATIONS AND BASIC FITTINGS REQUIRED FOR SENSOR INSTALLATIONS SHALL BE PROVIDED BY MECHANICAL CONTRACTOR.
21. ALL INSTRUMENTATION TUBING REQUIRED FOR DPS, DPT AND SPT COMPONENT INSTALLATIONS SHALL BE PROVIDED BY CONTRACTOR.
22. CONTRACTOR SHALL FIELD MOUNT ALL REQUIRED PACKAGED CONTROL COMPONENTS FURNISHED BY EQUIPMENT SUPPLIERS WHERE INDICATED. ALL REQUIRED 24V PACKAGED CONTROL FIELD WIRING SHALL BE PROVIDED BY TC CONTRACTOR UNLESS NOTED OTHERWISE. CONTRACTOR SHALL COORDINATE SPECIFIC SYSTEM WIRING REQUIREMENTS WITH PACKAGED EQUIPMENT SUPPLIERS.

TC SCOPE OF WORK NOTES

1. DEMOLISH ALL CONTROLS FOR DEMOLISHED AIR HANDLING UNITS
2. INTEGRATE NEW AIR HANDLING UNITS AND ASSOCIATED COMPONENTS TO EXISTING BAS.
3. INCORPORATE CONTROLS OF NEW FAN ARRAYS
4. PROVIDE BACNET CONNECTIONS FOR NEW VFDS. COORDINATE WITH TESTING AND BALANCING CONTRACTOR TO DETERMINE VFD SPEED SETPOINTS.
5. INTEGRATE NEW DUCT STATIC PRESSURE SENSORS INTO EXISTING BAS.
6. INTEGRATE NEW MOTORIZED DAMPERS INTO EXISTING BAS.
7. INTERLOCK EXISTING EXHAUST FAN SERVING FIRST FLOOR AUDITORIUM WITH NEW AHU-201. COORDINATE WITH ELECTRICAL CONTRACTOR.

CONTROL DIAGRAM - AHU-201 AND AHU-202



AHU SAFETY CIRCUIT WIRING DIAGRAM

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SEAL

KEYPLAN

MECHANICAL CONTROLS

2ND FLOOR AHU REPLACEMENT
Skokie Public Library
5215 Oakton St.
Skokie, IL 60077

ISSUES & REVISIONS

NO.	DESCRIPTION	DATE
1	50% OWNER REVIEW	2.11.26
2	100% OWNER REVIEW	3.04.26
3	ISSUED FOR BID	3.11.26

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P25-1226-00

M400

SEQUENCE OF OPERATIONS - AIR HANDLING UNIT AHU-201 AND AHU-202 (TYPICAL FOR EACH AHU)

1. MONITOR EACH OF THE FOLLOWING. PROVIDE AN ALARM ON AN ABNORMAL CONDITION:
   a. MIXED AIR TEMPERATURE
   b. PRE-FILTER DIFFERENTIAL PRESSURE
   c. FREEZE STAT STATUS
   d. SUPPLY SMOKE DETECTOR STATUS
   e. SUPPLY FAN HIGH OR LOW STATIC PRESSURE SAFETY SWITCH STATUS
   f. SUPPLY FAN ARRAY STATUS
   g. INDIVIDUAL SUPPLY FAN FAILURE ALARM STATUS
   h. SUPPLY FAN ARRAY VFD FAULT
   i. RETURN SMOKE DETECTOR STATUS
   j. RETURN FAN HIGH OR LOW STATIC PRESSURE SAFETY SWITCH STATUS
   k. RETURN FAN ARRAY FAILURE ALARM STATUS
   l. INDIVIDUAL RETURN FAN FAILURE ALARM STATUS
   m. RETURN FAN ARRAY VFD FAULT
   n. FIRE ALARM CONTROL PANEL SIGNAL
2. AHU START/STOP CONTROL:
   a. THE AHU SHALL START AND STOP BASED ON A PRE-PROGRAMMED OCCUPANCY SCHEDULE.
   b. UPON START-UP THE AHU SHALL OPERATE IN 100% RECIRCULATION MODE FOR 5 MINUTES (ADJ.) ADJUSTABLE. IN 100% RECIRCULATION MODE, THE OUTSIDE AIR DAMPER AND THE EXHAUST AIR DAMPER SHALL BE FULLY CLOSED, AND THE RECIRCULATION DAMPER AIR DAMPER OPEN. THE SUPPLY AND RETURN FANS SHALL BE INTERLOCKED THROUGH SOFTWARE.
   c. WHEN THE SUPPLY AND RETURN FANS ARE OFF, ALL DAMPERS AND VALVES SHALL BE POSITIONED TO THEIR FAIL-SAFE (NORMAL) POSITIONS.
   d. HARDWIRE INTERLOCKS FROM APPROPRIATE SAFETY DEVICES TO THE SUPPLY OR RETURN FAN SHALL STOP THE SUPPLY AND RETURN FANS (SAFETY SHUT-DOWN) WHENEVER ANY OF THE FOLLOWING OCCUR:
      i. FREEZE STAT IS IN ALARM
      ii. SUPPLY FAN HIGH AND LOW STATIC PRESSURE SAFETY SWITCH IS IN ALARM
      iii. SMOKE IS DETECTED AT THE SUPPLY SMOKE DETECTOR
      iv. THE AHU SUPPLY SIDE SMOKE DAMPER IS CLOSED
      v. SMOKE IS DETECTED AT THE RETURN SMOKE DETECTOR
      vi. RETURN FAN HIGH AND LOW STATIC PRESSURE SAFETY SWITCH IS IN ALARM
      vii. AHU RETURN SIDE SMOKE DAMPER IS CLOSED

   e. AFTER A SAFETY SHUT-DOWN, THE OPERATOR WILL MANUALLY RESET APPROPRIATE SAFETY DEVICES AND MANUALLY RESTART THE AIR HANDLING UNIT AT THE FRONT END THROUGH THE GRAPHICAL USER INTERFACE OR BY AN "AHU RESET" SWITCH NEAR THE UNIT.
   f. COORDINATE WITH THE VFD MANUFACTURER TO INSURE THAT ALL VFD SETTINGS ARE MADE TO ALLOW THE BAS TO RESTART THE AHU AFTER A POWER FAILURE WITHOUT THE NEED TO PHYSICALLY MANUALLY RESET THE VARIABLE FREQUENCY DRIVES.
3. ECONOMIZER AND NON-ECONOMIZER ENABLE/DISABLE MODE CONTROL:
   a. WHENEVER THE OUTSIDE AIR TEMPERATURE DROPS BELOW THE RETURN AIR TEMPERATURE BY A SET DIFFERENTIAL (ADJ.) ENABLE THE ECONOMIZER MODE. THE INITIAL DIFFERENTIAL SHALL BE 2°F (ADJ.).
   b. THE AIR HANDLING UNIT SHALL REMAIN IN THE ECONOMIZER MODE FOR A MINIMUM OF 10 MINUTES.
   c. WHENEVER THE OUTSIDE AIR TEMPERATURE IS ABOVE THE RETURN AIR TEMPERATURE OR THE RETURN AIR RELATIVE HUMIDITY EXCEEDS 60% (ADJ.), THE AIR HANDLING UNIT SHALL BE IN NON-ECONOMIZER MODE.
   d. WHEN OUTSIDE AIR TEMPERATURE IS HIGHER THAN THE "ECONOMIZER LOCKOUT TEMPERATURE" THE AIR HANDLING UNIT SHALL NOT BE ABLE TO ENTER ECONOMIZER MODE. THE INITIAL ECONOMIZER LOCKOUT TEMPERATURE SHALL BE 69°F (ADJ.).
4. DETERMINATION OF DISCHARGE AIR TEMPERATURE SETPOINT:
   a. WHEN THE OUTSIDE AIR TEMPERATURE IS AT OR ABOVE 56F, THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 55°F (ADJ.).
   b. WHEN THE OUTSIDE AIR TEMPERATURE IS AT OR BELOW 40F, THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 60°F (ADJ.).
   c. BETWEEN THE OUTDOOR AIR TEMPERATURES OF 40F AND 56F, THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE LINEARLY RESET BASED ON OUTSIDE AIR TEMPERATURE. AS OUTSIDE AIR TEMPERATURE RISES FROM 40F TO 56F, SUPPLY AIR TEMPERATURE SETPOINT SHALL DROP FROM 60F TO 55F (REFER TO AHU SUPPLY AIR TEMPERATURE RESET SCHEDULE GRAPH ON THIS SHEET).
   d. IF THE DISCHARGE AIR TEMPERATURE IS MORE THAN 5°F (ADJ.) ABOVE OR BELOW SETPOINT FOR MORE THAN 15 MINUTES (ADJ.), GENERATE AN ALARM AT THE FRONT-END COMPUTER.
5. OA, RA, AND EA DAMPER CONTROL:
   a. RETURN AIR, OUTSIDE AIR, AND SUPPLY AIR MEASURING STATIONS SHALL BE USED FOR AIRFLOW AND BUILDING PRESSURIZATION CONTROL. THE OUTSIDE AIRFLOW RATE SHALL NOT DROP BELOW MINIMUM OUTSIDE AIRFLOW RATE SETPOINT DURING EITHER ECONOMIZER OR NON-ECONOMIZER MODES OF OPERATION.

   b. NON-ECONOMIZER MODE DAMPER CONTROL:
      i. THE OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN THE RETURN AIR CO2 SET POINT. THE OUTSIDE AIR DAMPER SHALL NOT BE ALLOWED TO MODULATE BELOW THE ABSOLUTE MINIUM OUTSIDE AIRFLOW RATE SETPOINT.
      ii. THE RECIRCULATION AIR DAMPER SHALL MODULATE INVERSELY TO THE OUTSIDE AIR DAMPER.
      iii. THE EXHAUST AIR DAMPER SHALL MODULATE TO TRACK THE OUTSIDE AIR DAMPER POSITION AS REQUIRED TO MAINTAIN THE SUPPLY AIRFLOW OFFSET SETPOINT USING THE MEASURED SUPPLY AND RETURN AIRFLOWS.
   c. ECONOMIZER MODE DAMPER CONTROL:
      i. THE OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT AS MEASURED AT THE PREHEAT COIL DISCHARGE AIR TEMPERATURE SENSOR WITH A 4°F (ADJ.) OFFSET BELOW THE SUPPLY AIR TEMPERATURE SETPOINT, WHILE MAINTAINING THE RETURN AIR CO2 SETPOINT AND ABSOLUTE MINIMUM OUTSIDE AIRFLOW RATE SETPOINT.
      ii. THE RECIRCULATION AIR DAMPER SHALL MODULATE INVERSELY TO THE OUTSIDE AIR DAMPER.
      iii. THE EXHAUST AIR DAMPER SHALL MODULATE TO MAINTAIN THE SUPPLY AIRFLOW OFFSET SETPOINT AND BUILDING PRESSURIZATION SETPOINT USING MEASURED AIRFLOWS.
      iv. IF SUPPLY AIRFLOW IS RESET, EXHAUST AIRFLOW SHALL DYNAMICALLY TRACK TO MAINTAIN THE AIRFLOW OFFSET.
   d. DURING THE ECONOMIZER MODE IF THE OUTSIDE AIRFLOW RATE FALLS BELOW THE MINIMUM OUTSIDE AIRFLOW RATE SETPOINT AS MEASURED BY THE AIRFLOW MEASURING STATION:
      i. TEMPORARILY SUSPEND ECONOMIZER TEMPERATURE CONTROL.
      ii. MODULATE THE OUTSIDE AIR DAMPER TO MAINTAIN THE MINIMUM RETURN AIR CO2 SETPOINT. THE OUTSIDE AIR DAMPER SHALL NOT BE ALLOWED TO MODULATE TO BELOW THE ABSOLUTE MINIUM OUTSIDE AIRFLOW RATE.
      iii. RESUME ECONOMIZER DAMPER CONTROL ONCE OUTSIDE AIRFLOW MEETS THE MINIMUM OUTSIDE AIRFLOW RATE SETPOINT.
   e. IF THE MIXED AIR TEMPERATURE DROPS BELOW 40°F (ADJ.):
      i. THE OUTSIDE AIR DAMPER SHALL DRIVE TOWARD THE MINIMUM POSITION NECESSARY TO MAINTAIN THE MINIMUM OUTSIDE AIRFLOW RATE SEPOINT.
      ii. THE ECONOMIZER MODE DAMPER CONTROL SHALL BE DISABLED
      iii. THE ECONOMIZER MODE DAMPER CONTROL SEQUENCE SHALL BE RE-ENABLED ONCE THE MIXED AIR TEMPERATURE IS ABOVE 45°F (ADJ.).

   f. IF THE OUTSIDE AIR DAMPER POSITION IS LESS THAN 30% (ADJ.) AND THE MEASURED OUTSIDE AIRFLOW RATE IS BELOW THE MINIMUM OUTSIDE AIRFLOW RATE SETPOINT:
      i. TEMPORARILY DISABLE THE ECONOMIZER DAMPER CONTROL AND MODULATE THE
      ii. OUTSIDE AIR DAMPER TO MAINTAIN THE MINIMUM OUTSIDE AIR SETPOINT.
      iii. RESUME ECONOMIZER MODE DAMPER CONTROL WHEN THE OUTSIDE AIR DAMPER OPENS TO 35% (ADJ.) OR WHEN MINIMUM OUTSIDE AIRFLOW IS SATISFIED.
   g. PROVIDE ADJUSTABLE "OFFSETS" FOR DAMPER ACTUATOR CONTROL SIGNALS IF NEEDED TO MAINTAIN STABLE SYSTEM OPERATION. COORDINATE WITH THE TEST AND BALANCE CONTRACTOR TO DETERMINE THE REQUIRED "OFFSETS". REFER TO AHU BALANCING MATRIX ON THIS SHEET FOR ADDITIONAL REQUIREMENTS.
      i. IF MEASURED OUTSIDE AIRFLOW DEVIATES FROM CALCULATED AIRFLOW BY MORE THAN 10% (ADJ.) GENERATE AN ALARM.
      ii. IF AIRFLOW MEASURING STATION SIGNAL IS LOST, REVERT TO DAMPER POSITION-BASED CONTROL USING LAST KNOWN CALIBRATED POSITION AND GENERATE AN ALARM.
6. SUPPLY AIR TEMPERATURE CONTROL:
   a. WHEN THE AHU IS IN ECONOMIZER MODE, THE OUTSIDE AIR DAMPER, THE RECIRCULATION AIR DAMPER, AND THE EXHAUST AIR DAMPER SHALL BE MODULATED AS DEFINED UNDER "OA, RA, AND EA DAMPER CONTROL" ABOVE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT.
   b. IF THE AHU IS IN ECONOMIZER MODE AND THE OUTSIDE AIR DAMPER IS FULLY OPEN AND SUPPLY AIR TEMPERATURE IS ABOVE SETPOINT, MODULATE THE COOLING COIL VALVE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT.
   c. WHEN THE OUTSIDE AIR DAMPER IS AT MINIMUM DAMPER POSITION AND THE DISCHARGE AIR TEMPERATURE IS ABOVE SETPOINT, MODULATE COOLING COIL VALVE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT.
   d. WHEN THE OUTSIDE AIR DAMPER IS AT MINIMUM POSITION AND THE DISCHARGE AIR TEMPERATURE IS BELOW SETPOINT, MODULATE PREHEAT COIL VALVE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT.
   e. THE PREHEAT COIL VALVE AND THE COOLING COIL VALVE SHALL NEVER BE OPEN AT THE SAME TIME.
7. RELATIVE HUMIDITY MONITORING AND LIMIT CONTROL:
   a. RELATIVE HUMIDITY SHALL BE MONITORED FOR OPERATIONAL AWARENESS, DIAGNOSTICS, AND ALARM GENERATION ONLY.

   b. MONITOR RETURN AND SUPPLY AIR RELATIVE HUMIDITY USING A HUMIDITY SENSOR LOCATED IN THE RETURN AIR DUCT AND DOWNSTREAM OF THE COOLING COIL.
   c. IF THE SUPPLY AIR RELATIVE HUMIDITY EXCEEDS 85% (ADJ.) FOR MORE THAN 5 MINS (ADJ.). GENERATE A HIGH SUPPLY AIR HUMIDITY ALRM AT THE BAS FRONT END. LIMIT FURTHER COOLING COIL VALVE MODULATION TO PREVENT CONDENSATION DOWNSTREAM OF COOLING COIL.
   d. THE INITIAL RETURN AIR RELATIVE HUMIDITY SETPOINT SHALL BE SET TO 30% (ADJ.). GENERATE A LOW RETURN AIR RELATIVE HUMIDITY ALARM WHEN RETURN AIR RELATIVE HUMIDITY FALLS BELOW 30% RH (ADJ.). GENERATE A HIGH RETURN AIR RELATIVE HUMIDITY ALARM WHEN RETURN AIR RELATIVE HUMIDITY EXCEEDS 60% RH (ADJ.).
   e. WHENEVER THE CHILLED WATER VALVE IS OPEN, SUPPLY AIR RELATIVE HUMIDITY SHALL BE MONITORED FOR TRENDING.
   f. DURING ECONOMIZER OPERATION, IF OUTSIDE AIR RELATIVE HUMIDITY IS HIGH AND RETURN AIR RELATIVE HUMIDITY EXCEEDS 60% (ADJ.). GENERATE A BAS ADVISORY INDICATING POTENTIAL HUMIDITY CONCERNS AND ALLOW ECONOMIZER OPERATION TO BE MANUALLY LIMITED OR DISABLED BY OPERATOR.
8. DEMAND CONTROL VENTILATION:
   a. THE AIR HANDLING UNIT SHALL UTILIZE RETURN AIR CO2 CONCENTRATION TO IMPLEMENT DEMAND-CONTROLLED VENTILATION BY RESETTING THE MINIMUM OUTSIDE AIRFLOW RATE SETPOINT.
   b. MONITOR RETURN AIR CO2 CONCENTRATION VIA DUCT MOUNTED CO2 SENSOR. CONCENTRATION SHALL BE DISPLAYED, TRENDED, AND USED FOR DCV CONTROL.
   c. IF SPACE MOUNTED CO2 SENSORS ARE INSTALLED WITHIN ZONES SERVED BY THIS AHU, DCV CONTROL SHALL BE BASED ON THE HIGHEST ZONE CO2 CONCENTRATION. THE HIGHEST ZONE CO2 VALUE SHALL BE USED TO RESET THE AHU MINIMUM OUTSIDE AIRFLOW RATE SETPOINT. IF THE ZONE CO2 CONCENTRATION EXCEEDS SET POINT PLUS 10% FOR 10 MINS (ADJ.) GENERATE AN ALARM.
   d. DCV SHALL BE ENABLED DURING OCCUPIED MODE.
   e. DCV SHALL BE DISABLED DURING UNOCCUPIED MODE, AND THE MINIMUM OUTSIDE AIRFLOW RATE SETPOINT SHALL BE SET TO THE UNOCCUPIED MINIMUM VALUE (ADJ.). DCV SHALL BE DISABLED DURING SYSTEM SHUTDOWN, WARM-UP OR COOL-DOWN MODES.
   f. OUTSIDE AIRFLOW SHALL BE MEASURED BY AN OUTSIDE AIR AIRFLOW MEASURING STATION INSTALLED IN THE OUTSIDE AIR DUCT.
   g. THE OUTSIDE DAMPER SHALL MODULATE AS REQUIRED TO MAINTAIN THE ACTIVE MINIMUM OUTSIDE AIRFLOW RATE SEPOINT

      i. WHEN RETURN AIR CO2 CONCENTRATION FALLS BELOW 800 PPM (ADJ.) THE AHU SHALL MAINTAIN THE DESIGN MINIMUM OUTSIDE AIRFLOW RATE SETPOINT.
      ii. WHEN RETURN AIR CO2 CONCENTRATION RISES ABOVE 800 PPM (ADJ.) THE MINIMUM OUTSIDE AIRFLOW RATE SETPOINT SHALL BE LINEARLY RESET UPWARD.
      iii. WHEN RETURN AIR CO2 CONCENTRATION EXCEEDS 1,100 PPM (ADJ.) THE MINIMUM OUTSIDE AIRFLOW RATE SETPOINT SHALL BE RESET TO THE MAXIMUM OUTSIDE AIRFLOW RATE LIMIT.
   h. IF RETURN AIR CO2 CONCENTRATION EXCEEDS 1,100 PPM (ADJ.) FOR MORE THAN 10 MINS (ADJ.) AN ALARM SHALL BE GENERATED AT THE FRONT END. THE AHU SHALL MAINTAIN MAXIMUM ALLOWABLE OUTSIDE AIRFLOW RATE DURING A HIGH CO2 ALARM.
   i. DURING ECONOMIZER OPERATION THE MINIMUM OUTSIDE AIRFLOW RATE SETPOINT DETERMINED BY DCV SHALL ACT AS THE LOWER LIMIT FOR ECONOMIZER DAMPER CONTROL.
   j. DCV CONTROL SHALL NOT OVERRIDE MIXED AIR TEMPERATURE LOW-LIMIT PROTECTION. IF MIXED AIR TEMPERATURE DROPS BELOW THE LOW-LIMIT SETPOINT, DCV AIRFLOW INCREASES SHALL BE HAULTED UNTIL MIXED AIR TEMPERATURE RISES ABOVE THE ENABLE THRESHOLD.
9. SUPPLY FAN VFD SPEED CONTROL:
   a. MODULATE THE SUPPLY FAN VFD SPEED TO MAINTAIN THE SUPPLY DUCT STATIC PRESSURE SETPOINT AS SENSED BY THE CONTROLLING DUCT STATIC PRESSURE SENSOR. THE CONTROLLING SENSOR SHALL BE THE SENSOR WITH THE LARGEST PERCENT DEVIATION BELOW THE SETPOINT.
   b. THE STATIC PRESSURE SETPOINT SHALL BE DETERMINED BY SCANNING THE POSITIONS OF ALL TERMINAL UNIT DAMPERS EVERY 15 MINUTES (ADJ.) AND ADJUSTING THE STATIC PRESSURE SETPOINT ACCORDINGLY:
      i. IF ALL TERMINAL UNIT DAMPERS ARE LESS THAN 90% (ADJ.) OPEN, REDUCE THE STATIC PRESSURE SETPOINT BY 0.1 IN. WC., UNTIL ONE TERMINAL UNIT DAMPER IS MORE THAN 90% (ADJ.) OPEN.
      ii. IF MORE THAN FIVE TERMINAL UNIT DAMPERS ARE 95% (ADJ.) OPEN, INCREASE THE STATIC PRESSURE SETPOINT BY 0.1 IN. WC., UNTIL NO MORE THAN TWO DAMPERS ARE 95% (ADJ.) OPEN.
      iii. THE MINIMUM STATIC PRESSURE SETPOINT WILL BE 0.5 IN. WC.
      iv. THE MAXIMUM STATIC PRESSURE SETPOINT WILL BE THE MAXIMUM SETPOINT VALUE AS DETERMINED BY THE TEST AND BALANCE CONTRACTOR WHEN ALL TERMINAL UNIT DAMPERS ARE AT MAXIMUM COOLING AIRFLOW.
      v. TO IDENTIFY ANY "ROGUE" AIR TERMINAL UNITS WITH LOCAL DEFICIENCIES, TREND ALL AIR TERMINAL UNIT DATA INCLUDING DUCT STATIC PRESSURE SENSORS FOR ONE WEEK AND SUBMIT A TREND REPORT TO THE DESIGN ENGINEER FOR REVIEW. ALL "ROGUE"

AIR TERMINAL UNITS WILL BE EXCLUDED FROM THE DUCT STATIC PRESSURE RESET STRATEGY.

   c. MINIMUM SUPPLY FAN SPEED SHALL BE LIMITED SUCH THAT THE MEASURED SUPPLY AIRFLOW RATE SHALL ALWAYS EXCEED THE MINIMUM OUTSIDE AIRFLOW RATE BY AT LEAST 10% (ADJ.).
   d. AN ALARM SHALL BE GENERATED AT THE FRONT END COMPUTER IF THERE IS A SUPPLY FAN RUN COMMAND AND THERE IS NO SUPPLY FAN ARRAY STATUS.
   e. THE SUPPLY FAN RAMP-UP SPEED SHALL BE ADJUSTED TO MAINTAIN STABLE SYSTEM START-UP AND RETURN FAN TRACKING.
10. RETURN FAN CONTROL:
   a. MODULATE THE RETURN FAN VFD SPEED TO MAINTAIN THE RETURN AIRFLOW RATE SETPOINT.
   b. THE RETURN AIRFLOW RATE SETPOINT SHALL BE CALCULATED AS THE MEASURED SUPPLY AIRFLOW RATE MINUS THE OFFSET AIRFLOW RATE.
   c. AN ALARM SHALL BE GENERATED AT THE FRONT END COMPUTER IF THERE IS A RETURN FAN RUN COMMAND AND NO RETURN FAN STATUS.
   d. THE RETURN FAN RAMP UP SPEED SHALL BE ADJUSTED TO MAINTAIN STABLE SYSTEM START-UP AND FAN TRACKING.

INITIAL SCHEDULES AND SETTINGS

OCCUPANCY SCHEDULE (ADJ.):

MONDAY - FRIDAY 8AM-10PM

SATURDAY 8AM-7PM

SUNDAY 11AM-7PM

SETPOINTS:

DISCHARGE AIR TEMPERATURE: REFER TO RESET SCHEDULE

RETURN AIR RELATIVE HUMIDITY: 30% RH

MIXED AIR TEMPERATURE LOW LIMIT: 40°F

SUPPLY DUCT STATIC PRESSURE: 1.0 IN. W.C. (FINAL VALUE FOR EACH SENSOR TO BE DETERMINED BY THE TEST AND BALANCE CONTRACTOR)

MINIMUM OUTSIDE AIRFLOW RATE: 8,760 CFM FOR AHU-201, 7525 CFM FOR AHU-202

TOTAL EXHAUST AIRFLOW: 750 CFM

PRESSURIZATION AIRFLOW: 750 CFM (ADJ.) (THE FINAL PRESSURIZATION AIRFLOW RATE TO BE DETERMINED BY TAB AS REQUIRED TO MAINTAIN BUILDING POSITIVE PRESSURIZATION)

OFFSET AIRFLOW RATE: 1,500 CFM (ADJ.) TOTAL EXHAUST AIRFLOW PLUS PRESSURIZATION AIRFLOW

ALL SETPOINTS LISTED ABOVE SHALL BE ADJUSTABLE AT THE FRONT END THROUGH GRAPHICAL USER INTERFACE.

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KEYPLAN

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DRAWN:	CHECKED:	APPROVED:
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PROJECT NO. P25-1226-00

M401

POWER SYMBOLS

DESIGNATION	DESCRIPTION
	DUPLEX RECEPTACLE (WALL MOUNTED) +18" AFF UNO
	DUPLEX RECEPTACLE (WALL MOUNTED) ABOVE COUNTER HEIGHT
	DOUBLE DUPLEX RECEPTACLE (WALL MOUNTED) +18" AFF UNO
	SINGLE RECEPTACLE (WALL MOUNTED) +18" AFF UNO
IG	ISOLATED GROUND DUPLEX RECEPTACLE (WALL MOUNTED) +18" AFF UNO
GFI	GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE (WALL MOUNTED) +18" AFF UNO
GFI	GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE (WALL MOUNTED) ABOVE COUNTER HEIGHT
UPS	DUPLEX RECEPTACLE ON UPS POWER (WALL MOUNTED) +18" AFF UNO
	SINGLE SPECIAL OUTLET - SEE PLANS FOR NEMA CONFIGURATION
	SURFACE MOUNTED RACEWAY DEVICES INSTALLED AS SHOWN ON THE ELECTRICAL DRAWINGS
	TELEPHONE/POWER POLE
J	CEILING MOUNTED JUNCTION BOX
J	WALL MOUNTED JUNCTION BOX
J	FLOOR MOUNTED JUNCTION BOX
	DISCONNECT SWITCH (NON-FUSED)
	COMBINATION MOTOR STARTER AND DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	BREAKER DISCONNECT
	MAGNETIC MOTOR STARTER
	FLEXIBLE CONDUIT
DP-X	POWER DISTRIBUTION PANELBOARD
LP-X	BRANCH CIRCUIT PANELBOARD
T	TRANSFORMER T = KVA
M	MOTOR M = HP
VFD	VARIABLE FREQUENCY DRIVE
EPO K	EMERGENCY POWER OFF STATION ('K' INDICATES KEYED OPERATION)
EDO	ELECTRIC DOOR OPENER
	MOTOR CONTROL CENTER

LIGHTING SYMBOLS

DESIGNATION	DESCRIPTION
X	2x4 LIGHT FIXTURE X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X	1x4 LIGHT FIXTURE X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X	2x2 LIGHT FIXTURE X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X	STRIP LIGHT X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X	CEILING MOUNTED DOWNLIGHT X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X	CEILING MOUNTED WALL WASHER X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X X	WALL MOUNTED LIGHT FIXTURE X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X	2x4 LIGHT FIXTURE ON EMERGENCY (LIFE SAFETY) POWER X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X	1x4 LIGHT FIXTURE ON EMERGENCY (LIFE SAFETY) POWER X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X	2x2 LIGHT FIXTURE ON EMERGENCY (LIFE SAFETY) POWER X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X	STRIP LIGHT ON EMERGENCY (LIFE SAFETY) POWER X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X	CEILING MOUNTED DOWNLIGHT ON EMERGENCY (LIFE SAFETY) POWER X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X	CEILING MOUNTED WALL WASHER ON EMERGENCY (LIFE SAFETY) POWER X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X X	WALL MOUNTED LIGHT FIXTURE ON EMERGENCY (LIFE SAFETY) POWER X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X	SELF CONTAINED EMERGENCY LIGHT UNIT X = FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)
X	CEILING MOUNTED SINGLE FACED EXIT SIGN (SEE PLANS FOR ARROWS) X = EMERGENCY CIRCUIT
X	CEILING MOUNTED DOUBLE FACED EXIT SIGN (SEE PLANS FOR ARROWS) X = EMERGENCY CIRCUIT
X	WALL MOUNTED SINGLE FACED EXIT SIGN (SEE PLANS FOR ARROWS) X = EMERGENCY CIRCUIT
X	WALL MOUNTED DOUBLE FACED EXIT SIGN (SEE PLANS FOR ARROWS) X = EMERGENCY CIRCUIT
	SWITCH X = MODIFIER / y = SWITCH LEG
	NO MODIFIER EQUALS SINGLE POLE SWITCH 2P = DOUBLE POLE 3W = THREE WAY 4W = FOUR WAY K = KEY OPERATED PL = SWITCH AND PILOT LIGHT CB = CIRCUIT BREAKER WCB = WEATHER-PROOF CB MC = MOMENTARY CONTACT F = FUSED LV = LOW VOLTAGE OS = WITH OCCUPANCY SENSOR VS = WITH VACANCY SENSOR T = TIME TH = THERMAL RATED MOTOR WP = WEATHER-PROOF D = DIMMER
X y	
PC	PHOTOCELL
DL	DAYLIGHT SENSOR
TC	TIMER CONTROL
OS	CEILING MOUNTED OCCUPANCY SENSOR
OS	WALL MOUNTED OCCUPANCY SENSOR
VS	CEILING MOUNTED VACANCY SENSOR
VS	WALL MOUNTED VACANCY SENSOR
DCP	DIMMING CONTROL CENTER
LRP	LIGHTING RELAY PANEL

ELECTRICAL RISER DIAGRAM SYMBOLS

DESIGNATION	DESCRIPTION
A	AMMETER
N E L	AUTOMATIC TRANSFER SWITCH
	BATTERY
XX XX	BRANCH CIRCUIT PANELBOARD
XX	CABLE AND CONDUIT TAG (SEE SCHEDULE)
X Y	CIRCUIT BREAKER - DRAWOUT X = AMPERE FRAME (AF) Y = AMPERE TRIP (AT)
X Y	CIRCUIT BREAKER - MOLDED CASE X = AMPERE FRAME (AF) Y = AMPERE TRIP (AT)
NC	CONTACT - NORMALLY CLOSED
NO	CONTACT - NORMALLY OPEN
	FUSE Y = FUSE AMPERE OR TYPE
G	GENERATOR
GF	GROUND FAULT PROTECTIVE DEVICE
	GROUND
K	KEY INTERLOCK
	POTHEAD (CABLE TERMINATION)
PM	POWER METER
X	PROTECTIVE RELAY X = PROTECTIVE DEVICE NUMBER EX. 59 = OVERVOLTAGE
	STRESSCONE
SPD X	SURGE PROTECTION DEVICE (TVSS) X = A, B, C
X	SWITCH X = SWITCH AMPERE
X Y	FUSED SWITCH X = SWITCH AMPERE Y = FUSE AMPERE OR TYPE
	THERMAL OVERLOAD
CT	CURRENT TRANSFORMER
PT	POTENTIAL TRANSFORMER
X Y Z — T	TRANSFORMER X = KVA RATING Y = PRIMARY VOLTAGE Z = SECONDARY VOLTAGE (E.G. 208Y/120V)
W X Y Z — T	ISOLATION TRANSFORMER K RATED W = KVA RATING X = K RATING Y = PRIMARY VOLTAGE Z = SECONDARY VOLTAGE (E.G. 208Y/120V)
V	VOLTMETER

SECURITY SYSTEM SYMBOLS

DESIGNATION	DESCRIPTION
SACP	SECURITY ALARM AND CONTROL PANEL
SA	SECURITY AUDIBLE ALARM DEVICE
CR	CARD READER
ES	ELECTRIC STRIKE
DC	DOOR CONTACTS
OOC	OVERHEAD DOOR CONTACTS
IC	INTERCOM
LB	LOCK BOX
	PUSH BUTTON
MD	MOTION DETECTOR
GB	GLASS BREAK SENSOR
CCTV	CAMERA WITH MOUNTING HARDWARE
VCR	VIDEO RECORDER
MON	VIDEO MONITOR
SC	SECURITY COMPUTER
ML	MAGNETIC LOCK
KP	KEY PAD

COMMUNICATION SYSTEM SYMBOLS

DESIGNATION	DESCRIPTION
E	EMERGENCY CALL FOR AID STATION
E	EMERGENCY CALL FOR AID AUDIO/VISUAL DEVICE
MC	MASTER CLOCK UNIT
AMP	AMPLIFIER
M	MICROPHONE
B	BUZZER
B	BELL
	PUSH BUTTON
	PHONE OUTLET
W	WALL PHONE OUTLET
	DATA OUTLET
	COMBINATION PHONE AND DATA OUTLET
TV	TELEVISION OUTLET
IC	INTERCOM
S	CEILING MOUNTED SPEAKER
S	WALL MOUNTED SPEAKER
C	SINGLE FACE WALL CLOCK
C DF	DOUBLE FACE WALL CLOCK

FIRE ALARM SYSTEM SYMBOLS

DESIGNATION	DESCRIPTION
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM GRAPHIC ANNUNCIATOR PANEL
S	MANUAL PULL STATION
SD X	SMOKE DETECTOR MOUNTED AT CEILING NONE = PHOTOELECTRIC
D X	HEAT DETECTOR, RATE OF RISE AND FIXED TEMPERATURE X = TEMPERATUR RATING (IF FIXED TEMPERATURE ONLY)
DD	DUCT SMOKE DETECTOR
WF	WATER FLOW SWITCH
TS	TAMPER SWITCH
PS	PRESSURE SWITCH
AIU	ADDRESSABLE INTERFACE UNIT
MRA	MANUAL RELEASE ABORT STATION (FM200)
FSR	FAN SHUTDOWN RELAY
ER	ELEVATOR RECALL
A	AUDIBLE ANNUNCIATING DEVICE
V	VISUAL ANNUNCIATING DEVICE
AV	COMBINATION AUDIBLE VISUAL ANNUNCIATING DEVICE
B	FIRE BELL
RA	REMOTE VISUAL ANNUNCIATOR
M	MAGNETIC DOOR HOLD DEVICE
FP	FIREFIGHTER PHONE OUTLET
AOR	AREA OF REFUGE TELEPHONE OUTLET
KB	KNOX BOX

ABBREVIATIONS

DESIGNATION	DESCRIPTION
AC	ALTERNATING CURRENT
AF	AMPERE FRAME, AMPERE FUST
AFF	ABOVE FINISHED FLOOR
AM	AMP METER
AMP	AMPERE
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICA WIRING GAUGE
BP	BRANCH CIRCUIT PANEL
BKR	BREAKER
C	CONDUIT
CATV	CABLE ACCESSED TELEVISION
C/B	CIRCUIT BREAKER
CKT	CIRCUIT
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DISC	DISCONNECT
DN	DOWN
DWG	DRAWING
EM	EMERGENCY
EMI	ELECTROMAGNETIC INTERFERENCE
EMT	ELECTRIC METALLIC TUBING
EPO	EMERGENCY POWER OFF
E	EXISTING
F	FUSE
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPERES
FLR	FLOOR
FMC	FLEXIBLE METAL CONDUIT
GEN	GENERATOR
GF	GROUND FAULT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
G	GROUND
HID	HIGH INTENSITY DISCHARGE
HOA	HAND OFF AUTO
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HZ	HERTZ (CYCLE)
IC	INTERRUPTING CAPACITY
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
JB	JUNCTION BOX
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KW	KILOWATT
LPS	LOW PRESSURE SODIUM
LP	LIGHTING PANEL
LRA	LOCKED ROTOR AMPERES
LRP	LIGHTING RELAY PANEL
LTG	LIGHTING
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MLO	MAIN LUGS ONLY
MIN	MINIMUM
N/A	NOT APPLICABLE
NATS	NON-AUTOMATIC TRANSFER SWITCH
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NETA	NATIONAL ELECTRICAL TESTING ASSOCIATION
NF	NON-FUSED
NO	NORMALLY OPEN
OC	OVER CURRENT
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
P	POLE
PB	PULL BOX
PDU	POWER DISTRIBUTION UNIT
PE	PROFESSIONAL ENGINEER
PF	POWER FACTOR
PH	PHASE
PM	POWER MONITORING DEVICE
PNL	PANELBOARD
PP	POWER PANEL
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
RFI	RADIO FREQUENCY INTERFERENCE
RGS	RIGID GALVANIZED STEEL CONDUIT
RMC	RIGID METAL CONDUIT
RMS	ROOT MEAN SQUARE
RP	RECEPTACLE PANEL
SCA	SHORT CIRCUIT AMPERES
SW	SWITCH
SWBD	SWITCHBOARD
T	TELEPHONE
THD	TOTAL HARMONIC DISTORTION
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTAGE
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLT METER
W	WATT
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
WM	WATT METER
XFMR	TRANSFORMER

DEMOLITION ABBREVIATIONS

DESIGNATION	DESCRIPTION
EA	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE ABANDONED
EC	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE REMOVED AND JUNCTION BOX CAPPED
EM	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE MODIFIED
ER	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO REMAIN
NL	EXISTING ELECTRICAL EQUIPMENT OR OUTLET RELOCATED (NEW LOCATION)
NR	NEW ELECTRICAL EQUIPMENT INSTALLED OVER EXISTING OUTLET
RE	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE REMOVED
RL	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE RELOCATED AND JUNCTION BOX REMOVED OR CAPPED

GENERAL

DESIGNATION	DESCRIPTION
	THIN LINES - EXISTING PIPING, DUCTWORK OR EQUIPMENT TO REMAIN
	HEAVY LINES - NEW PIPING, DUCTWORK OR EQUIPMENT
	HEAVY DASHED LINES - PIPING, DUCTWORK OR EQUIPMENT TO BE DEMOLISHED
	MATCHLINE
	POINT OF NEW CONNECTION BETWEEN NEW WORK AND EXISTING
#	CONSTRUCTION KEYED NOTE
#	DEMOLITION KEYED NOTE
1 E2.6	DETAIL OR PLAN CALLOUT
2 E2.6	SECTION
1 VIEW NAME SCALE	VIEW TITLE
TYPE MARK	EQUIPMENT TAG

SHEET LIST

SHEET NUMBER	SHEET NAME
E000	ELECTRICAL SYMBOLS AND ABBREVIATIONS
E001	ELECTRICAL GENERAL NOTES
E002	ELECTRICAL SPECIFICATIONS
E003	ELECTRICAL SCHEDULES
ED102	ELECTRICAL SECOND FLOOR PLAN - DEMOLITION
ED500	ELECTRICAL RISER DIAGRAM - DEMOLITION
E102	ELECTRICAL SECOND FLOOR PLAN - NEW WORK
E400	ELECTRICAL PANEL SCHEDULES
E500	ELECTRICAL RISER DIAGRAM - NEW WORK
E600	ELECTRICAL DETAILS

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SEAL

ELECTRICAL SYMBOLS AND ABBREVIATIONS

2ND FLOOR AHU REPLACEMENT

Skokie Public Library
5215 Oakton St.
Skokie, IL 60077

ISSUES & REVISIONS

NO.	DESCRIPTION	DATE
1	50% OWNER REVIEW	2.11.26
2	100% OWNER REVIEW	3.04.26
3	ISSUED FOR BID	3.11.26

KEYPLAN

SCALE
NO SCALE

DRAWN	CHECKED	APPROVED
JDS	SDG	APM

PROJECT NO.
P25-1226-00

E000

ELECTRICAL GENERAL NOTES FOR DEMOLITION

1. EXAMINATION

   A. THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE AREAS UNDER WHICH THE WORK IS TO BE PERFORMED AND NOTIFY THE OWNER IN WRITING OF ANY CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY COMPLETION OF THE WORK. CONTRACTOR SHALL NOT PROCEED WITH WORK UNTIL SATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

   B. VERIFY FIELD MEASUREMENTS AND CIRCUITING ARRANGEMENTS FOR DEVICES SHOWN ON DRAWINGS.

   C. DEMOLITION DRAWINGS ARE BASED ON CASUAL FIELD OBSERVATION AND EXISTING RECORD DRAWINGS. REPORT DISCREPANCIES TO OWNER BEFORE DISTURBING EXISTING INSTALLATION.

   D. COMMENCEMENT OF DEMOLITION MEANS ACCEPTANCE OF EXISTING CONDITIONS.

2. PREPARATION

   A. DISCONNECT ELECTRICAL SYSTEMS IN WALLS, FLOORS, AND CEILINGS SCHEDULED FOR REMOVAL.

   B. COORDINATE UTILITY SERVICE SHUT-DOWN WITH THE UTILITY COMPANY.

   C. NOTIFY THE OWNER AT LEAST 48 HOURS BEFORE PARTIALLY OR COMPLETELY DISABLING ANY ELECTRICAL SYSTEM.

   D. PROVIDE TEMPORARY WIRING AND CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. EXPERIENCED PERSONNEL SHALL BE USED WHEN WORKING ON ENERGIZED EQUIPMENT OR CIRCUITS.

   E. EXISTING ELECTRICAL SERVICE: MAINTAIN EXISTING ELECTRICAL SYSTEM IN SERVICE UNTIL NEW SERVICE IS COMPLETE AND READY FOR SERVICE. DISABLE ELECTRICAL SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. MINIMIZE OUTAGE DURATION. MAKE TEMPORARY CONNECTIONS TO MAINTAIN ELECTRICAL SERVICE IN AREAS ADJACENT TO WORK AREA.

   F. MAINTAIN EXISTING FIRE ALARM SYSTEM IN SERVICE UNTIL NEW SYSTEM IS ACCEPTED. DISABLE SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. WHERE FIRE ALARM DEVICES MUST BE REMOVED TO ACCOMMODATE THE REMOVAL OF WALLS, NOTIFY THE OWNER AND ENGINEER IN WRITING WITH LOCATIONS OF DEVICES.

3. DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK.

   A. REMOVE, RELOCATE, AND EXTEND EXISTING ELECTRICAL WORK AS INDICATED ON THE DRAWINGS AND AS NOTED HEREIN.

   B. REMOVE ABANDONED WIRING BACK TO SOURCE OF SUPPLY.

   C. WHERE SOURCE OF SUPPLY IS A PANELBOARD, RE-LABEL PROTECTIVE DEVICE AS "SPARE". AFTER DEMOLITION IS COMPLETE, SUBMIT REVISED PANELBOARD SCHEDULES INDICATING "SPARES" TO OWNER AND ENGINEER.

   D. REMOVE EXPOSED ABANDONED CONDUIT ABOVE ACCESSIBLE CEILING FINISHES. CUT CONDUIT FLUSH WITH WALLS AND FLOORS, AND PATCH SURFACES.

   E. DISCONNECT AND REMOVE ABANDONED OUTLETS AND ASSOCIATED DEVICES.

   F. DISCONNECT AND REMOVE ABANDONED PANELBOARDS AND DISTRIBUTION EQUIPMENT.

   G. DISCONNECT AND REMOVE ELECTRICAL DEVICES AND EQUIPMENT THAT IS NO LONGER IN USE.

   H. DISCONNECT AND REMOVE ABANDONED LUMINARIES. REMOVE BRACKETS, STEMS, HANGERS, AND ALL OTHER ACCESSORIES.

   I. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING DEMOLITION AND EXTENSION OF WORK.

4. CLEANING, REPAIR, AND REPLACEMENT

   A. GENERAL: CLEAN AND REPAIR EXISTING MATERIALS AND EQUIPMENT THAT WILL REMAIN OR ARE TO BE REUSED.

   B. PANELBOARDS: CLEAN EXPOSED SURFACES AND TIGHTEN ALL ELECTRICAL CONNECTIONS. REPLACE DAMAGED CIRCUIT BREAKERS AND PROVIDE CLOSURE PLATES FOR VACANT POSITIONS. PROVIDE TYPED SCHEDULES SHOWING REVISED CIRCUITING INFORMATION.

   C. LUMINAIRES: REMOVE EXISTING LUMINAIRES FOR CLEANING. USE MILD DETERGENT TO CLEAN EXTERIOR AND INTERIOR SURFACES, RINSE CLEAN WITH CLEAN WATER AND WIPE DRY. REPLACE EXISTING LAMPS AND BALLASTS WITH NEW.

5. DISPOSAL

   A. OWNER SHALL HAVE RIGHT TO RETAIN ANY EQUIPMENT OR MATERIALS THAT HAVE BEEN DEMOLISHED PRIOR TO DISPOSAL OR REMOVAL FROM SITE.

   B. ANY EQUIPMENT OR MATERIALS NOT WANTED BY THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM SITE.

   C. CONTRACTOR SHALL COMPLY WITH ENVIRONMENTAL LAWS AND REGULATIONS FOR DISPOSAL OF DEMOLISHED MATERIALS AND EQUIPMENT.

ELECTRICAL GENERAL NOTES

1. CODES

THE WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, MUNICIPAL, AND NATIONAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS THE CONSTRUCTION DOCUMENTS SHALL GOVERN. HOWEVER, THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.

- 2020 NATIONAL ELECTRIC CODE WITH SKOKIE AMENDMENTS.
- 2021 INTERNATIONAL ENERGY CODE W/ ILLINOIS AMENDMENTS.

2. DRAWINGS AND SPECIFICATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND COMPLYING WITH BOTH THE DRAWINGS AND SPECIFICATIONS. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN THE DRAWINGS, NOTES, SPECIFICATIONS, OR CODES, THE REFERENCE WHICH PROVIDES THE MORE COMPLETE OR HIGHER STANDARD SHALL PREVAIL.

3. INTERPRETATION OF THE DOCUMENTS

CAREFULLY COMPARE THE DRAWINGS AND SPECIFICATIONS, CHECKING MEASUREMENTS AND CONDITIONS UNDER WHICH THIS INSTALLATION IS TO BE MADE. FOR CLARIFICATION BETWEEN VARIOUS DRAWINGS, BETWEEN DRAWINGS OR SPECIFICATION, OR BETWEEN SECTIONS OF THE SPECIFICATION, THE MATTER SHALL BE REFERRED TO THE ENGINEER BEFORE ANY WORK IS EXECUTED. THE CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY EXCEPTIONS NECESSARY TO MAKE THIS A COMPLETE, READY TO USE INSTALLATION. IF NOT STATED IN THE PROPOSAL, IT WILL NOT BE CONSIDERED EXTRA.

4. ELECTRICAL DRAWINGS

THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL DOORS, WALLS, FURNITURE, EQUIPMENT, ETC. THE LOCATION OF RACEWAY SYSTEM COMPONENTS IS SCHEMATIC. THE EXACT LOCATION OF RACEWAY SYSTEM COMPONENTS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. THE CONTRACTOR SHALL CONFIRM THE DIMENSIONS OF THE ACTUAL EQUIPMENT TO BE SUPPLIED FOR THIS PROJECT, AND VERIFY CLEARANCES AND ROUGH-INS PRIOR TO STARTING WORK.

5. SITE EXAMINATION

BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL VISIT THE SITE, EXAMINE THE PREMISES, AND MAKE A THOROUGH SURVEY OF THE EXISTING CONDITIONS. THE SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. NO CONSIDERATION OR ALLOWANCE WILL BE GRANTED FOR FAILURE TO VISIT THE SITE OR FOR LATER CLAIMS FOR LABOR, EQUIPMENT, MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN SITE EXAMINATION BEEN MADE.

6. COORDINATION WITH OTHER TRADES

THE ELECTRICAL CONTRACTOR SHALL OBTAIN A COMPLETE SET OF ARCHITECTURAL AND ENGINEERING DOCUMENTS AND COORDINATE WITH MECHANICAL, PLUMBING, ARCHITECTURAL, AND OTHER TRADES FOR EXACT DIMENSIONS, CLEARANCES, ROUGH-IN LOCATIONS, AND OTHER ADDITIONAL SCOPES OF WORK THAT MAY NOT BE SHOWN ON THE ELECTRICAL PLANS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL 120 VOLT (AND HIGHER) AC POWER TO OTHER TRADES EQUIPMENT AND HARDWARE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONTROLS, FIRE AND SECURITY SYSTEMS, MOTORIZED DOORS, DAMPERS, LIFTS, AND OTHER SYSTEMS. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE ELECTRICAL PLANS, THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL SAFETY DISCONNECT SWITCHES TO MECHANICAL EQUIPMENT.

7. PERMITS, APPLICATIONS AND RELEASES

THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS INSPECTIONS, APPLICATIONS, RELEASES AND FEES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES FOR THE EXECUTION OF THIS WORK. SCHEDULING OF ALL REQUIRED INSPECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

8. FIRE STOPPING

ALL PENETRATIONS IN WALL, FLOOR OR CEILINGS SHALL BE SUITABLY CLOSED UP AND SEALED WITH AN INTUMESCENT FIRE STOPPING COMPOUND LISTED IN THE MOST RECENT FACTORY MUTUAL RESEARCH CORPORATION (FMRC) APPROVAL GUIDE. FIRE STOPPING PRODUCTS SHALL BE MANUFACTURED BY 3M COMPANY OR APPROVED EQUAL.

9. ELECTRICAL SERVICE DISRUPTIONS

ALL WORK WHICH EXPOSES ACTIVE BUS REQUIRES A WRITTEN NOTIFICATION TO THE OWNER WHICH WILL OUTLINE THE METHOD OF PROCEDURE FOR THE WORK. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 5 DAYS NOTICE TO THE OWNER

BEFORE WORKING ON ANY ENERGIZED ELECTRICAL SYSTEM. ALL POWER DISRUPTION SHALL OCCUR AT TIMES AND OF DURATIONS ACCEPTABLE TO THE OWNER.

10. EQUIPMENT

ALL MATERIALS AND EQUIPMENT USED IN THIS INSTALLATION SHALL BE NEW, AND HAVE THE APPROPRIATE UL LISTING AND LABEL.

11. MISCELLANEOUS SUPPORTING MEMBERS

ALL ANGLES CHANNELS, AND OTHER MISCELLANEOUS STEEL, BOLTS, RODS, ETC. REQUIRED TO SUPPORT LIGHT FIXTURE, CONDUIT, RACEWAY, LADDER TRAY, OR OTHER ELECTRICAL EQUIPMENT OR DEVICES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

12. PANELBOARDS

ALL PANELBOARDS SHALL BE PROVIDED WITH TYPEWRITTEN DIRECTORIES. SEE PANEL SCHEDULES ON THE DRAWINGS AND SPECIFICATIONS FOR COMPLETE IDENTIFICATION AND LABELING REQUIREMENTS.

13. SAFETY

THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE SAFETY OF THE OWNERS EMPLOYEES, BUILDING EMPLOYEES AND GUESTS, AS WELL AS THEIR OWN FORCES, BY ADEQUATELY PROTECTING ANY EXPOSED LIVE CONDUCTORS, OR DEVICES THROUGHOUT THE COURSE OF THIS WORK.

COMPLY WITH NFPA 241 FOR SAFEGUARDING DURING CONSTRUCTION AND ALTERATION OPERATIONS. IN ADDITION, ANY OPENINGS IN FIRE RATED SEPARATIONS BETWEEN OCCUPIED AND UNOCCUPIED (OR OPERATIONAL AND NON-OPERATIONAL) AREAS SHALL BE SEALED AT THE END OF EACH WORK DAY WITH AN APPROPRIATE FIRE RATED ENCLOSURE OR SEALANT. DO NOT COMPROMISE EXISTING SECURITY OR FIRE ALARM SYSTEMS SERVING THE OCCUPIED OR OPERATIONAL AREAS.

14. EQUIPMENT CONNECTIONS

PROVIDE FINAL ELECTRICAL CONNECTIONS TO ALL EQUIPMENT FURNISHED UNDER OTHER TRADES AND FOR ALL OWNER FURNISHED EQUIPMENT. PROVIDE A FLEXIBLE LIQUID TIGHT CONNECTION TO ALL VIBRATION PRODUCING EQUIPMENT.

15. INTERFERENCE WITH OCCUPANCY

THE PRESENT BUILDING IS OCCUPIED AND WILL CONTINUE TO BE DURING THE PROGRESS OF THIS WORK. IT IS IMPERATIVE, THEREFORE, THAT THE WORK COVERED BY THESE DOCUMENTS BE EXECUTED WITH A MINIMUM OF INCONVENIENCE TO THE BUILDING PERSONNEL, AND OTHER TENANTS.

16. TEMPORARY REQUIREMENTS

PROVIDE TEMPORARY LIGHTING, POWER, AND FIRE ALARM COMPONENTS AS REQUIRED IN AREAS UNDERGOING WORK DURING CONSTRUCTION.

FURNISH AND INSTALL AN APPROVED TEMPORARY FIRE ALARM SYSTEM AS REQUIRED BY LOCAL CODES AND AUTHORITY HAVING JURISDICTION.

ALL TEMPORARY ELECTRICAL EQUIPMENT SHALL BE REMOVED BEFORE THE AREA CEILINGS ARE INSTALLED.

17. CABLING

BRANCH CIRCUITS TO RECEPTACLES, LIGHTING AND MISC. SMALL LOADS (15 OR 20 AMP CIRCUITS), UNLESS SPECIFICALLY NOTED OTHERWISE, SHALL BE 2#12, 1#12G. - 3/4" C. SEE NOTE BELOW FOR ADDITIONAL REQUIREMENTS. MINIMUM SIZE WIRE SHALL BE #12 AWG AND MINIMUM SIZE CONDUIT SHALL BE 3/4" TRADE SIZE.

18. CABLING SIZES

BRANCH CIRCUIT CABLE SIZING SHALL BE BASED ON THE VALUES INDICATED BELOW:

A. 120/208V CABLING FROM PANEL TO THE ELECTRICAL LOAD SHALL BE ADJUSTED AS FOLLOWS UNLESS SPECIFICALLY NOTED OTHERWISE:

   0' - 100' #12 AWG MINIMUM

   100' - 200' #10 AWG MINIMUM

   200' - 250' #8 AWG MINIMUM

B. 277/480V CABLING FROM PANEL TO THE ELECTRICAL LOAD SHALL BE ADJUSTED AS FOLLOWS UNLESS SPECIFICALLY NOTED OTHERWISE:

   0' - 150' #12 AWG MINIMUM

   150' - 250' #10 AWG MINIMUM

   250' - 300' #8 AWG MINIMUM

19. SPECIAL LUG REQUIREMENTS

ANY CABLE WHICH TERMINATES DIRECTLY ON TO A BUS BAR SHALL BE 2 BOLT LONG BARREL TYPE WITH INSPECTION HOLES PRODUCED WITH NON FLASHING TYPE DYES AS MANUFACTURED BY THOMAS AND BETTS OR APPROVED EQUAL, MINIMUM 10 TONS OF COMPRESSION, HEX CRIMP. THE USE OF HEAT SHRINK TUBING IS EXPLICITLY FORBIDDEN.

ELECTRICAL CONTRACTOR SHALL AMPROBE ALL PANELS REFERRED TO ON THESE DRAWINGS, AFTER DEMOLITION OF ALL EQUIPMENT. REPORT ALL FINDINGS TO THE ENGINEER, IN WRITING, BEFORE PROCEEDING WITH ANY CONNECTIONS.

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SEAL

ELECTRICAL GENERAL NOTES

2ND FLOOR AHU REPLACEMENT
Skokie Public Library
5215 Oakton St.
Skokie, IL 60077

ISSUES & REVISIONS

NO.	DESCRIPTION	DATE
1	50% OWNER REVIEW	2.11.26
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KEYPLAN

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PROJECT NO.
P25-1226-00

E001

ELECTRICAL SPECIFICATIONS

GENERAL

A. SCOPE: THE WORK SPECIFIED IN THESE NOTES INCLUDES, BUT SHALL NOT BE LIMITED TO, PROVIDING LABOR, MATERIAL, EQUIPMENT, AND SERVICES NECESSARY FOR ELECTRICAL WORK AS SHOWN ON THE DRAWINGS AND AS HEREIN SPECIFIED.

B. REFER TO ARCHITECTURAL, MECHANICAL, OR PLUMBING/FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION AND COORDINATION.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SHOP DRAWING SUBMITTALS WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO A MINIMUM OF FIVE (5) COPIES OF: PRODUCT DATA AND EQUIPMENT SPECIFICATIONS SHEETS, SCHEMATIC DIAGRAMS, WIRING DIAGRAMS, SIZES, MOUNTING DETAILS (WITH REQUIRED ELEVATIONS). TECHNICAL DESCRIPTIONS OF COMPONENTS, TEST REPORTS, CERTIFICATES, OPERATING AND MAINTENANCE MANUALS, AND PROPER CALCULATIONS TO ENSURE SPECIFIED PERFORMANCE OF THE SYSTEMS. ALL SUBMITTALS SHALL BE SENT IN DIGITAL (PDF) FORMAT. NO EQUIPMENT SHALL BE ORDERED, PURCHASED, OR INSTALLED WITHOUT PRIOR APPROVAL BY THE ENGINEER OF THE SUBMITTALS AND SHOP DRAWINGS.

D. ALL WORK SHALL COMPLY WITH THE ELECTRICAL CODE APPROVED BY THE LOCAL AUTHORITY, AND ALL OTHER APPLICABLE FEDERAL, STATE AND LOCAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS, THE CONSTRUCTION DOCUMENTS SHALL GOVERN BUT THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.

E. NOT ALL EXISTING CONVENIENCE RECEPTACLES, WALL SWITCHES, LIGHTS, ETC., AND OTHER ELECTRICAL EQUIPMENT ARE SHOWN ON THE PLANS. A SURVEY OF THE JOB SITE MUST BE MADE TO DETERMINE THE EXTENT OF EXISTING ELECTRICAL EQUIPMENT.

F. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS AND/OR SPECIFICATION NOTES OR WITH CODE REQUIREMENTS, THE NOTE, SPECIFICATION OR CODE WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR THE HIGHER STANDARD SHALL PREVAIL.

G. OMISSIONS FROM THE DRAWINGS, SPECIFICATION NOTES, OR THE OF DETAILS OF WORK WHICH ARE NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMITTED DETAILS OF THE WORK BUT THEY SHALL BE PERFORMED AS IF FULLY AND CORRECTLY SET FORTH AND DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS.

H. THE CONTRACTOR SHALL CHECK ALL DRAWINGS FURNISHED IMMEDIATELY UPON RECEIPT AND SHALL PROMPTLY NOTIFY THE OWNER OF ANY DISCREPANCIES. FIGURES MARKED ON DRAWINGS SHALL IN GENERAL BE FOLLOWED IN PREFERENCE TO SCALE MEASUREMENTS. LARGE SCALE DRAWINGS SHALL IN GENERAL GOVERN SMALL SCALE DRAWINGS. THE CONTRACTOR SHALL COMPARE ALL DRAWINGS AND VERIFY THE FIGURES BEFORE LAYING OUT THE WORK AND WILL BE RESPONSIBLE FOR ANY ERRORS WHICH MIGHT HAVE BEEN AVOIDED THEREBY.

I. THE CONTRACTOR SHALL FURNISH ALL PERMITS AND PAY ALL FEES.

PRODUCTS AND MATERIALS

A. RACEWAYS

1. CONDUIT AND FITTINGS INSTALLED FOR MOTOR CIRCUITS, FEEDER CIRCUITS, IN CONCRETE SLABS ON GRADE, EXPOSED TO WEATHER, BURIED UNDERGROUND OR EXPOSED WHERE SUBJECT TO MECHANICAL INJURY SHALL BE RIGID GALVANIZED STEEL (RGS) OR INTERMEDIATE METAL CONDUIT (IMC) COMPLYING ANSI C80.1. FITTINGS SHALL BE THREADED.
2. CONDUIT AND FITTINGS INSTALLED FOR CONCEALED INTERIOR WORK FOR LIGHTING/ RECEPTACLES/ BRANCH CIRCUITS, FIRE ALARM, PAGING, SIGNAL, AND LOW VOLTAGE CIRCUITS SHALL BE ELECTRICAL METAL TUBING (EMT) COMPLYING WITH NEMA FB C80.3. EMT FITTINGS SHALL BE ZINC PLATED COMPRESSION TYPE. SET SCREW FITTINGS ARE NOT PERMITTED.
3. FINAL CONNECTIONS TO MOTORS, TRANSFORMERS, AND VIBRATING EQUIPMENT SHALL BE MADE WITH LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC).
4. MINIMUM SIZE CONDUIT SHALL BE 3/4 INCH (19 MM) EXCEPT THAT CONTROL, SIGNAL, AND TWO-WIRE LIGHTING SWITCH LEGS MAY BE 1/2 INCH (13 MM).
5. RACEWAYS SHALL BE SECURELY SUPPORTED BY APPROVED METHODS AT FIVE FOOT (5') INTERVALS.
6. PULL BOXES ARE REQUIRED IN RUNS OVER 100 FEET, WHEN MORE THAN THE EQUIVALENT OF THREE (3) 90° BENDS ARE USED, AND AS SHOWN ON DRAWINGS.

B. BOXES

1. PULL AND JUNCTION BOXES AND COVERS SHALL BE FABRICATED FROM GALVANIZED NEC GAGE SHEET STEEL. OUTLET BOXES TO BE OF THE HOT-DIPPED GALVANIZED, PRESSED STEEL, KNOCKOUT TYPE. BOXES SHALL GENERALLY BE 4 INCHES SQUARE EXCEPT WHERE NOTED OTHERWISE.

C. WIRE AND CABLE

1. UNLESS NOTED OTHERWISE, CONDUCTORS FOR POWER AND LIGHTING SHALL BE COPPER, #12 AWG MINIMUM WITH 600 VOLT INSULATION, TYPE THHN, 90 DEGREE C, CONFORMING TO THE LATEST NEC AND SHALL BEAR UL LABEL.
2. BRANCH CIRCUIT WIRING SHALL BE SOLID COPPER WHEN #10 AWG OR SMALLER, UNLESS OTHERWISE SPECIFIED. WIRE #8 AWG AND LARGER SHALL BE STRANDED COPPER.
3. WIRE FOR SIGNAL AND CONTROL SYSTEMS SHALL BE #14 AWG, UNLESS OTHERWISE NOTED.

D. WIRING DEVICES

1. 120/277V WALL SWITCHES SHALL BE MOUNTED IN SUITABLE OUTLET BOXES IN THE WALL OR PARTITIONS. THEY SHALL BE OF THE AC QUIET DESIGN, TOGGLE HANDLE, 20 AMP RATED. THEY SHALL BE SPECIFICATION GRADE.
2. CONVENIENCE OUTLETS SHALL EACH BE SPECIFICATION GRADE, GROUNDING TYPE, THREE WIRE (TWO CIRCUIT WIRES PLUS EQUIPMENT GROUND) SINGLE OR DUPLEX AS INDICATED ON THE DRAWINGS, RATED FOR 125 VOLTS, 20 AMPS, FOR REGULAR OUTLET MOUNTING, AND WITH FACE SLOT CONFIGURATION MATCHING THE NEMA STANDARD FOR THE RATING AND WIRES.
3. SPECIAL PURPOSE NEMA OUTLETS OTHER THAN 20 AMP CONVENIENCE OUTLETS SHALL BE SHOWN ON PLANS.
4. STYLE AND COLOR OF WIRING DEVICES AND COVER PLATES SHALL BE SELECTED BY THE ARCHITECT.
5. ACCEPTABLE MANUFACTURERS: HUBBELL, LEVITON, P&S/LEGRAND, OR EATON.

E. ELECTRICAL CONNECTIONS

1. ALL WIRE CONNECTIONS SHALL BE MADE BY MEANS OF SOLDERLESS CONNECTORS.
2. BRANCH CIRCUIT JOINTS OF SPLICES FOR WIRES #10 AND SMALLER SHALL BE MADE WITH 3M BRAND SCOTCHLOK ELECTRICAL SPRING CONNECTORS.
3. SPLICES AND JOINTS FOR CONDUCTORS NO. 8 AND LARGER SHALL BE BY MEANS OF HIGH PRESS, LONG BARREL, CAST COPPER, COMPRESSION CONNECTORS.
4. JOINT AND SPLICES SHALL BE COVERED WITH 3M ELECTRICAL TAPE TO 150% OF INSULATION VALUE.
5. NO SPLICES SHALL BE MADE IN THE CONDUCTOR EXCEPT AT OUTLET BOXES, JUNCTION BOXES, OR IN SPLICE BOXES.

F. PANELBOARDS

1. EXISTING PANEL BOARDS TO BE REUSED SHALL BE PROVIDED WITH UPDATED TYPE WRITTEN DIRECTORIES AFTER NEW WORK IS COMPLETED. CONTRACTOR SHALL PROVIDE NEW CIRCUIT BREAKERS TO MATCH EXISTING PANEL BOARDS AS INDICATED ON DRAWINGS.
2. NEW BRANCH CIRCUIT AND LIGHTING PANEL BOARDS SHALL BE OF THE DEAD-FRONT, SAFETY TYPE, WITH BOLTED-TYPE UL LISTED MOLDED CASE CIRCUIT BREAKERS. CIRCUIT BREAKERS SHALL BE LISTED AS SWITCH RATED (SWD) FOR LIGHTING CIRCUITS. VOLTAGE RATINGS, NUMBER OF POLES, FRAME SIZES, TRIP RATINGS, MAIN BREAKER, NEUTRAL BUS, AND EQUIPMENT GROUND BARS ARE AS SHOWN ON THE DRAWINGS. PANEL BOARDS ARE TO BE FULLY RATED FOR THE SHORT CIRCUIT RATING SHOWN ON THE DRAWINGS BUT NOT LESS THAN 22,000 AMPS. BUS BARS SHALL BE RECTANGULAR, SOLID COPPER, MAXIMUM OF 1000 AMPS PER SQUARE INCH, SECURELY MOUNTED AND BRACED. ALL CONNECTIONS TO BUS BARS SHALL BE SECURELY BOLTED. CABINETS BOXES SHALL BE CONSTRUCTED OF CODE GRADE GALVANIZED STEEL, SIZED TO PROVIDE MINIMUM 4-INCH WIDE WIRING GUTTERS ON SIDES, TOPS AND BOTTOM. FRONTS SHALL BE CONSTRUCTED OF CODE GRADE STEEL, ADJUSTABLE INDICATING TRIM CLAMPS AND WITH DOOR PROVIDED WITH CONCEALED HINGES AND CYLINDER TYPE LOCK AND CATCH. TWO KEYS PER PANEL SHALL BE FURNISHED, AND ALL LOCKS KEYED ALIKE. FINISH SHALL BE ANSI 61 GRAY. ACCEPTABLE MANUFACTURERS: SQUARE D, EATON, AND GENERAL ELECTRIC.
3. IDENTIFICATION OF NEW PANEL BOARDS. PANEL BOARD SHALL HAVE A TYPEWRITTEN CIRCUIT DIRECTORY, MOUNTED UNDER TRANSPARENT PLASTIC ON INSIDE OF DOOR TO IDENTIFY EACH CIRCUIT LOAD AND LOCATION. EACH PANEL BOARD SHALL HAVE A LAMINATED BAKELITE NAMEPLATE ATTACHED TO THE OUTSIDE OF THE PANEL BOARD. THE NAMEPLATE SHALL INCLUDE PANEL BOARD DESIGNATION, LOCATION, VOLTAGE, AND PHASE. NAMEPLATES SHALL HAVE BLACK 1/4 INCH (6 MM) LETTERS MINIMUM ON A WHITE BACKGROUND. ATTACH THE NAMEPLATE BY SCREWS OR RIVETS.

G. TRANSFORMERS

1. GENERAL PURPOSE DRY TYPE TRANSFORMERS. FURNISH AND INSTALL DRY TYPE TRANSFORMERS WITH KVA RATING SHALL BE AS SHOWN ON THE DRAWINGS AND INDICATED HEREIN. TRANSFORMERS SHALL BE 3 PHASE, 60 HZ, TWO WINDING TYPE WITH 220 DEGREE C INSULATION, 115 DEGREE RISE, AND COPPER WINDINGS. TRANSFORMERS SHALL HAVE 480 VOLT DELTA CONNECTED PRIMARIES AND 120/208V WYE CONNECTED SECONDARIES WITH A GROUNDED NEUTRAL. TRANSFORMERS SHALL HAVE SIX (6) 2.5 PERCENT TAPS, 2 ABOVE AND 4 BELOW RATED HIGH VOLTAGE.
2. NON-LINEAR LOAD DRY TYPE TRANSFORMERS. COMPLY WITH SPECIFICATIONS ABOVE AND HAVE A K4 OR K13 RATING AS INDICATED ON THE PLANS.

H. DISCONNECT SWITCHES

1. PROVIDE HEAVY DUTY SURFACE-MOUNTED SAFETY SWITCHES FOR MOTORS UNLESS OTHERWISE INDICATED, OF TYPES, SIZES, AND ELECTRICAL CHARACTERISTICS AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS. THE SWITCHES SHALL BE FUSED OR NON-FUSED AS INDICATED ON THE DRAWINGS OR AS REQUIRED AND SHALL BE MANUFACTURED BY SQUARE D, EATON, OR GENERAL ELECTRIC.
2. SWITCHES SHALL HAVE SWITCH BLADES WHICH SHALL BE FULLY VISIBLE IN THE OFF POSITION WHEN THE ENCLOSURE DOOR IS OPEN. CURRENT CARRYING PARTS SHALL BE PLATED COPPER AND SWITCH CONTACTS SHALL BE SILVER-TUNGSTEN. SWITCHES SHALL BE QUICK-MAKE, QUICK-BREAK TYPE. THE OPERATING HANDLE SHALL BE AN INTEGRAL PART OF THE ENCLOSURE BASE AND SHALL BE PADLOCKABLE IN THE OFF POSITION. THE HANDLE POSITION SHALL INDICATE WHETHER THE SWITCH IS ON OR OFF. SWITCHES SHALL BE HORSEPOWER RATED FOR 250 AC OR DC OR 600 VOLTS AC AS REQUIRED.
3. CONTACTS: PROVIDE TWO FORM C AUXILIARY, 10 AMPERE, 300 VOLT RATED CONTACTS. THE CONTACTS SHALL PROVIDE FOR TWO NORMALLY OPEN AND TWO NORMALLY CLOSED CONTACTS FOR SWITCH OPEN OR CLOSED POSITION.

I. MOTOR STARTERS

1. WHERE INDICATED ON THE DRAWINGS PROVIDE A MOTOR STARTER SUITABLE FOR THE UTILIZATION VOLTAGE AND PHASES INDICATED AT 60 HERTZ. COORDINATE WITH THE WORK OF OTHER DIVISIONS FOR INTEGRAL STARTERS FURNISHED WITH EQUIPMENT TO AVOID OMISSION OR DUPLICATION. MINIMUM STARTER SIZE SHALL BE NEMA SIZE 1.
2. STARTERS SHALL BE OF THE MAGNETIC TYPE UNLESS NOTED OTHERWISE. COMBINATION STARTERS SHALL BE MAGNETIC WITH A DUAL ELEMENT FUSED DISCONNECT UNLESS INDICATED OTHERWISE ON THE DRAWINGS
3. STARTERS SHALL BE PROVIDED WITH STANDARD DUTY PUSH BUTTON STATIONS HAVING MAINTAINED CONTACT STOP/START BUTTONS, LOCKOUT, HOA FUNCTIONS, AND RED RUNNING INDICATING LIGHTS UNLESS NOTED OTHERWISE. MAGNETIC STARTERS SHALL HAVE A MINIMUM OF TWO NORMALLY OPEN AND TWO NORMALLY CLOSED AUXILIARY CONTACTS.
4. PROVIDE AN INDIVIDUAL 120 VOLT CONTROL TRANSFORMER IN EACH STARTER.
5. PROVIDE EACH STARTER WITH THREE MELTING ALLOY, THERMAL OVERLOAD RELAYS, SIZED IN ACCORDANCE WITH THE CURRENT RATING SHOWN IN THE MOTOR NAMEPLATE.
6. MANUAL MOTOR STARTERS SHALL BE USED FOR 120 VOLT MOTORS OF 1/3 HORSEPOWER OR LESS, UNLESS AUTOMATIC CONTROL IS REQUIRED. IF CONTROL DEVICE IS NOT CAPABLE OF CARRYING THE LOAD CURRENT, PROVIDE A SUITABLE CONTACTOR OR MAGNETIC MOTOR STARTER.
7. MOTOR STARTERS LOCATED INDOORS SHALL BE HOUSED IN NEMA TYPE 1 ENCLOSURES. STARTERS EXPOSED TO THE WEATHER SHALL BE HOUSED IN NEMA TYPE 3R ENCLOSURES. PROVIDE EACH STARTER WITH MOTOR IDENTIFICATION NAMEPLATE.
8. ACCEPTABLE MANUFACTURERS: SQUARE D, GENERAL ELECTRIC, EATON.

J. INFORMATION SYSTEMS WIRING

1. PROVIDE RACEWAY SYSTEM FOR DATA/PHONE WIRING AS INDICATED ON PLANS. FURNISH AND INSTALL DATA AND PHONE WIRING AS INDICATED ON THE ELECTRICAL/COMMUNICATIONS PLANS.

K. FIRE ALARM SYSTEM

1. ADD NEW DEVICES TO EXISTING SYSTEM AS INDICATED ON THE PLANS. DEVICES SHALL BE COMPATIBLE WITH EXISTING SYSTEM. INSTALLATION SHALL BE BY A LICENSED FIRE ALARM CONTRACTOR THAT IS FACTORY AUTHORIZED.
2. WIRING SHALL BE SOLID-COPPER CONDUCTORS WITH 600-V RATED, 90 DEG C, COLOR-CODED INSULATION PER NEC 760 FPLP TYPE CABLE INSTALLED IN CONDUIT.
3. PULL STATIONS SHALL BE DOUBLE-ACTION TYPE, FABRICATED OF METAL OR PLASTIC, AND FINISHED IN RED WITH MOLDED, RAISED-LETTER OPERATING INSTRUCTIONS OF CONTRASTING COLOR.
4. AUDIBLE/VISUAL ALARM DEVICES SHALL BE COMBINATION HORN/SPEAKER/STROBE UNITS XENON STROBE LIGHTS WITH CLEAR OR NOMINAL WHITE POLYCARBONATE LENS. MOUNT LENSES ON AN ALUMINUM FACEPLATE. THE WORD "FIRE" IS ENGRAVED IN MINIMUM 1-INCH (25-MM) HIGH LETTERS ON THE LENS. DEVICES HAVE A MINIMUM LIGHT OUTPUT TO BE ADA COMPLIANT. SPEAKERS SHALL BE CAPABLE OF PRODUCING A RANGE OF PROGRAMMABLE TONES AND/OR VOICE ANNUNCIATION AT 15DBA ABOVE AVERAGE AMBIENT SOUND LEVELS, NOT LESS THAN 75DBA AND NOT GREATER THAN 120DBA AT 10 FEET. COMBINATION DEVICES CONSIST OF FACTORY-COMBINED, AUDIBLE AND VISUAL ALARM UNITS IN A SINGLE MOUNTING ASSEMBLY.
5. SMOKE DETECTORS SHALL BE PHOTOELECTRIC OR COMBINATION PHOTOELECTRIC AND IONIZATION, AND MATCH EXISTING SYSTEM.
6. HEAT DETECTORS SHALL BE FIXED OR RATE OF RISE AS INDICATED ON THE DRAWINGS TO MATCH EXISTING SYSTEM.

L. FIXTURES AND LAMPS

1. GENERAL
   a. FIXTURES SHALL BE PROVIDED COMPLETE WITH ACCESSORIES SUCH AS PLASTER FRAMES, AND OTHER SUPPORTING DEVICES FOR RECESSED, SURFACE, OR PENDANT MOUNT AS REQUIRED. ALL FIXTURES SHALL BE SPECIFICATION GRADE UNLESS NOTED OTHERWISE.
   b. SPLICES IN INTERNAL WIRING SHALL BE MADE WITH APPROVED INSULATED "WIRE NUT" TYPE MECHANICAL CONNECTORS, SUITABLE FOR THE TEMPERATURE AND VOLTAGE CONDITIONS TO WHICH THEY ARE SUBJECTED.
   c. FIXTURES FOR USE OUTDOORS OR IN AREAS DESIGNATED AS DAMP LOCATIONS SHALL BE PROVIDED WITH A SUITABLE GASKET TO PREVENT THE ENTRANCE OF MOISTURE. FINAL ADJUSTMENT OF EXTERIOR FIXTURES SHALL BE MADE AFTER DARK AND SHALL BE APPROVED BY THE ARCHITECT/ENGINEER.
   d. EACH LIGHTING FIXTURE SHALL BE INDEPENDENTLY SUPPORTED FROM THE BUILDING STRUCTURE BY MEANS OF 12 GAUGE STEEL WIRE.
   e. MANUFACTURER MODEL TYPES SHALL BE AS NOTED OR SCHEDULED ON THE DRAWINGS.
2. FLUORESCENT FIXTURES
   a. UNLESS NOTED OTHERWISE ON DRAWINGS, LAMPS FOR FIXTURES SHALL BE T8, 4100K, MINIMUM 80 CRI. ACCEPTABLE MANUFACTURERS: SYLVANIA, GENERAL ELECTRIC, OR PHILIPS.
   b. BALLASTS SHALL BE T8 PROGRAMMED START, ELECTRONIC BALLASTS WITH A POWER FACTOR OF NOT LESS THAN 95 PERCENT, TOTAL HARMONIC DISTORTION OF NOT MORE THAT 10%, AND A LAMP FLICKER OF LESS THAT 2 PERCENT. DIMMABLE BALLASTS SHALL HAVE 0-10V DIMMING CONTROL. ACCEPTABLE MANUFACTURERS: ADVANCE, OSRAM/SYLVANIA OR APPROVED EQUAL.
3. LED FIXTURES
   a. UNLESS NOTED OTHERWISE ON DRAWINGS, LEDS IN FIXTURES SHALL BE 4000K, MINIMUM 80 CRI.
   b. LED DRIVERS SHALL BE ELECTRONIC DIMMING TYPE WITH 0TO 10V DIMMING CONTROL WITH A POWER FACTOR OF NOT LESS THAN 95 PERCENT, TOTAL HARMONIC DISTORTION OF NOT MORE THAT 10%, AND A LAMP FLICKER OF LESS THAT 2 PERCENT.

M. GROUNDING

1. THE COMPLETE ELECTRICAL INSTALLATION SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL CODE. EQUIPMENT GROUNDING SYSTEM CABLE SHALL BE COPPER.
2. EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSTALLED IN ALL RACEWAYS AND ENCLOSURES WITHIN THE BUILDING.
3. ACCESSIBLE GROUNDING CONNECTIONS SHALL BE BOLTED OR CLAMP TYPE UNLESS OTHERWISE INDICATED. SOLDERED CONNECTIONS WILL NOT BE PERMITTED IN THE GROUNDING SYSTEM.
4. WHERE CONDUITS TERMINATE AT EQUIPMENT, OR IN THE PULL BOXES OF EQUIPMENT, FOR WHICH A GROUND BUS IS SPECIFIED, PROVIDE THEM WITH BUSHINGS OF THE GROUNDING TYPE HAVING THE MAXIMUM AVAILABLE ACCOMMODATION FOR GROUND WIRES. GROUND EACH BUSHING INDIVIDUALLY TO THE EQUIPMENT GROUND BUS WITH THE CODE REQUIRED SIZE COPPER WIRE.

EXECUTION

A. AS A MINIMUM, ELECTRICAL WORK SHALL COMPLY WITH NECA STANDARDS AND RECOMMENDED PRACTICES FOR ELECTRICAL INSTALLATION AS APPLICABLE TO THIS PROJECT. NECA PHONE 201-215-4504.

B. THE CONTRACTOR SHALL MAKE POWER CONNECTIONS TO ALL MOTORS AND EQUIPMENT FURNISHED BY OTHERS. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS, SPECIFICATIONS AND NOTES FOR ADDITIONAL INFORMATION.

C. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED.

D. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BEAR THE UNDERWRITERS' LABEL (UL) AND SHALL BE INSTALLED IN THE MANNER FOR WHICH THEY ARE DESIGNED AND APPROVED.

E. ALL DEVICES INSTALLED OUTSIDE OR IN DAMP LOCATIONS SHALL BE APPROVED WEATHERPROOF.

F. THE CONTRACTOR SHALL INSTALL ALL CONDUITS AND WIRES WITH A MINIMUM NUMBER OF BENDS AND IN SUCH A MANNER AS TO CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEAD ROOM, KEEP OPENINGS AND PASSAGEWAYS CLEAR AND MEET ALL STRUCTURAL CODE REQUIREMENTS.

G. THE CONTRACTOR SHALL NOT BORE, NOTCH OR IN ANY WAY CUT INTO ANY STRUCTURAL MEMBER WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT OR STRUCTURAL ENGINEER.

H. THE CONTRACTOR SHALL PROVIDE SUPPORT FOR ALL FIXTURES AND ELECTRICAL EQUIPMENT TO COMPLY WITH THE SEISMIC REQUIREMENTS OF THE UNIFORM BUILDING CODE AND ALL LOCAL ORDINANCES.

I. ALL CONDUIT CONNECTIONS TO MACHINES, MOTORS, AND EQUIPMENT SUBJECT TO VIBRATION (INCLUDING TRANSFORMERS) SHALL BE MADE WITH LIQUIDTIGHT FLEX CONDUIT. FLEXIBLE CONNECTION SHALL BE BETWEEN 18 AND 36 INCHES IN LENGTH. ARRANGE CONNECTIONS TO PREVENT THE ENTRANCE OF MOISTURE. PROVIDE CONTINUOUS EQUIPMENT GROUND WIRE THROUGH ALL FLEXIBLE CONDUITS TO ASSURE GROUND CONTINUITY.

J. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.

K. THE ENTIRE WIRING SYSTEM SHALL BE TESTED FOR SHORT CIRCUITS, GROUNDS AND INSULATION RESISTANCE BETWEEN CONDUCTORS AND TO GROUND.

L. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUITS, WIRES, BOXES, SWITCHES, LIGHT FIXTURES (WITH LAMPS), RECEPTACLES, SERVICE DEVICES, SWITCHBOARDS AND PANELBOARDS REQUIRED FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM.

M. PROVIDE A EXTERNAL MANUAL DISCONNECTING MEANS AT ALL MOTORS OR PACKAGED MECHANICAL EQUIPMENT UNLESS NOTED OTHERWISE.

N. PROVIDE AN ENCLOSURE OF EQUAL FIRE RESISTANT RATING AROUND ALL FIXTURES AND EQUIPMENT INSTALLED IN OR PENETRATING THROUGH FIRE RATED SEPARATIONS. THROUGH STOP FIRE SEALING OF CONDUITS SHALL BE MADE WITH 3M CP25WP+ CAULK ACCORDING TO UL APPLICATION.

O. LOCATIONS SHOWN ON THE ARCHITECTURAL AND MECHANICAL DRAWINGS TAKE PRECEDENCE OVER THOSE SHOWN ON THE ELECTRICAL DRAWINGS. REFER TO THE MECHANICAL, PLUMBING AND HEAT/VENT/AC DRAWINGS FOR THE EXACT LOCATIONS, RATINGS, TYPE CONNECTIONS, WIRING DIAGRAMS AND AUXILIARY DEVICES.

P. THE CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT, WIRE AND CONNECTIONS FOR LINE VOLTAGE LIGHTING CONTROLS AND LOW VOLTAGE LIGHTING CONTROL UNLESS NOTED OTHERWISE ON DRAWINGS. THE CONTRACTOR SHALL MAKE ALL POWER CONNECTIONS ALL TO A/C EQUIPMENT INCLUDING 120 VOLT POWER CONTROL, MONITORING, AND SIGNALING EQUIPMENT FURNISHED BY OTHER DISCIPLINES. COORDINATE WITH OTHER DISCIPLINES FOR REQUIREMENTS.

Q. 3THE CONTRACTOR SHALL RECEIVE, STORE AND INSTALL ALL ELECTRICAL ITEMS FURNISHED BY THE OWNER.

R. REFER TO THE REFLECTED CEILING PLAN AND THE ARCHITECTURAL FLOOR PLANS FOR THE EXACT LOCATIONS OF ALL LIGHTING FIXTURES AND DEVICES.

S. PROVIDE TYPEWRITTEN DIRECTORY CARD IN ALL NEW AND MODIFIED PANELS. IDENTIFY LOAD SERVED BY EACH CIRCUIT BREAKER.

T. PROVIDE ENGRAVED NAMEPLATES ON ALL PANEL(S), TRANSFORMERS, DISCONNECT SWITCHES, AND SWITCHBOARDS.

U. RECEPTACLES SHALL HAVE PRINTED LABELS WITH THE PANEL AND CIRCUIT NUMBER PLACED ON THE COVER. THE LABEL SHALL BE RED WITH WHITE LETTERS FOR EMERGENCY RECEPTACLES AND BLACK WITH WHITE LETTERS FOR NORMAL RECEPTACLES.

V. THE CONTRACTOR SHALL PROVIDE A SET OF AS-BUILT DRAWINGS SHOWING THE LOCATIONS AND DEPTHS OF ALL UNDERGROUND CONDUITS, INDICATE ALL CHANGES MADE DURING CONSTRUCTION, AND ANY DEVIATIONS FROM THE ELECTRICAL DRAWINGS.

W. PROVIDE PULL WIRE IN ALL EMPTY CONDUITS.

X. FOR PURPOSES OF CLEARNESS AND LEGIBILITY, THE ELECTRICAL DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND INFORMATION AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE ELECTRICAL WORK INTERFACES WITH OTHER TRADES.

Y. DISCONNECT AND REMOVE ALL EXISTING INTERIOR AND EXTERIOR ELECTRICAL DEVICES, EQUIPMENT, WIRING, EXPOSED ABANDONED CONDUIT, ETC., NO LONGER REQUIRED UNLESS OTHERWISE NOTED.

Z. CONTRACTORS SHALL VISIT THE EXISTING BUILDINGS AND GROUNDS AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY, ON THIS CONDITION, ON BEHALF OF THE CONTRACTORS FOR ANY ERROR OR NEGLIGENCE ON THEIR PART.

AA. WHERE EXISTING EQUIPMENT OR CONDUIT IS REMOVED OR CHANGED, ALL CONDUIT AND WIRE NO LONGER IN SERVICE SHALL BE REMOVED AS DIRECTED BY THE ARCHITECT. ALL BUILDING SURFACES DAMAGED AND OPENINGS LEFT BY THE REMOVAL OR RELOCATION OF EQUIPMENT, CONDUIT, ETC., SHALL BE REPAIRED BY THIS CONTRACTOR.

BB. EXISTING CONDUIT AND WIRE SHALL NOT BE REUSED IF MOVED FROM ITS PRESENT LOCATION OR IF IT IS OF INADEQUATE CAPACITY FOR THE NEW LOAD.

CC. ALL CONDUIT SHALL BE CONCEALED WHEREVER POSSIBLE. THE CONTRACTOR SHALL REVIEW THE PLANS AND SPECIFICATIONS TO DETERMINE WHERE NEW WALLS AND CEILINGS ARE TO BE INSTALLED AND SHALL MAKE USE OF THESE AREAS TO CONCEAL CONDUIT. THE CONTRACTOR SHALL USE SURFACE RACEWAYS SUCH AS WIREMOLD WHERE NECESSARY, OR AS DIRECTED.

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KEYPLAN

SCALE

DRAWN	CHECKED	APPROVED
JDS	SDG	APM

PROJECT NO.
P25-1226-00

E002

MECHANICAL EQUIPMENT ELECTRICAL CONNECTIONS

TAG	EQUIPMENT	LOAD				FED FROM				CONDUIT AND CABLE	DISCONNECT				STARTER			VFD	REMARKS
		V/Ø/Hz	CAPACITY (kW)	FULL LOAD (AMPS)	MOTOR RATED POWER (HP)	SOURCE NAME	CIRCUIT BREAKER (AMP-POLE)	SWITCH SIZE (AMP-POLE)	FUSE SIZE (AMPS)		SWITCH SIZE (AMP-POLE)	FUSE SIZE (AMP-POLE)	NEMA ENCLOSURE	FURNISHED BY	NEMA SIZE	FUSE SIZE (AMPS)	FURNISHED BY	FURNISHED BY(1)	
AHU-201 SUPPLY FAN ARRAY	AHU-201 AHU (4) SUPPLY FANS, FEEDER TO AHU CONTROL PANEL MOTOR CONTROL CABINET	480/3/60	*	58 FLA	(4) 10	ENHD2/ MCC-2A	80A-3P (SEE NOTE 3)	*	*	(SEE NOTE 2) 3#4, 1#6GND, 1"C.	100/3	70A (SEE NOTE 6)	1	WITH EQUIPMENT	*	*	*	WITH EQUIPMENT (4) VFDS IN SUPPLY FAN ARRAY MOTOR CONTROL CABINET	FLA = 55A, MCA=59A, MOP=80 PROVIDE ELECTRICAL CONNECTION TO SUPPLY FAN MOTOR CONTROL CABINET.
	SUPPLY FAN ARRAY MOTOR 1	480/3/60	*	14	10	SUPPLY FAN CONTROL CABINET	*	*	*	(SEE NOTES 4) 3#12, 1#12GND, 3/4"C	*	*	*	*	*	*	*	WITH EQUIPMENT	PROVIDE MOTOR FEEDER FROM MOTOR CONTROL CABINET VFD TO FAN MOTOR IN AHU FAN ARRAY.
	SUPPLY FAN ARRAY MOTOR 2	480/3/60	*	14	10	SUPPLY FAN CONTROL CABINET	*	*	*	(SEE NOTES 4) 3#12, 1#12GND, 3/4"C	*	*	*	*	*	*	*	WITH EQUIPMENT	PROVIDE MOTOR FEEDER FROM MOTOR CONTROL CABINET VFD TO FAN MOTOR IN AHU FAN ARRAY.
	SUPPLY FAN ARRAY MOTOR 3	480/3/60	*	14	10	SUPPLY FAN CONTROL CABINET	*	*	*	(SEE NOTES 4) 3#12, 1#12GND, 3/4"C	*	*	*	*	*	*	*	WITH EQUIPMENT	PROVIDE MOTOR FEEDER FROM MOTOR CONTROL CABINET VFD TO FAN MOTOR IN AHU FAN ARRAY.
	SUPPLY FAN ARRAY MOTOR 4	480/3/60	*	14	10	SUPPLY FAN CONTROL CABINET	*	*	*	(SEE NOTES 4) 3#12, 1#12GND, 3/4"C	*	*	*	*	*	*	*	WITH EQUIPMENT	PROVIDE MOTOR FEEDER FROM MOTOR CONTROL CABINET VFD TO FAN MOTOR IN AHU FAN ARRAY.
AHU-201 LTS. & RECPT	AHU LIGHTS AND GFI RECEPTACLE (4) 12W LIGHTS (1) 20A RECPTACLE	120/1/60	48W LTG.	16	*	SEE PLANS	20A-1P	*	*	(SEE NOTE 5) 2#10, 1#10GND, 3/4"C	*	*	*	*	*	*	*	*	EC TO PROVIDE ELECTRICAL WIRING AND CONDUIT IN AHU TO CONNECT ALL LIGHTING TO UNIT TIMER SWITCH PER VENDOR WIRING DIAGRAM
AHU-202 SUPPLY FAN ARRAY	AHU-202 AHU (4) SUPPLY FANS, FEEDER TO AHU CONTROL PANEL MOTOR CONTROL CABINET	480/3/60	*	58 FLA	(4) 10	ENHD2/ MCC-2A	80A-3P (SEE NOTE 3)	*	*	(SEE NOTE 2) 3#4, 1#6GND, 1"C.	100/3	70A (SEE NOTE 6)	1	WITH EQUIPMENT	*	*	*	WITH EQUIPMENT (4) VFDS IN SUPPLY FAN ARRAY MOTOR CONTROL CABINET	FLA = 55A, MCA=59A, MOP=80 PROVIDE ELECTRICAL CONNECTION TO SUPPLY FAN MOTOR CONTROL CABINET.
	SUPPLY FAN ARRAY MOTOR 1	480/3/60	*	14	10	SUPPLY FAN CONTROL CABINET	*	*	*	(SEE NOTES 4) 3#12, 1#12GND, 3/4"C	*	*	*	*	*	*	*	WITH EQUIPMENT	PROVIDE MOTOR FEEDER FROM MOTOR CONTROL CABINET VFD TO FAN MOTOR IN AHU FAN ARRAY.
	SUPPLY FAN ARRAY MOTOR 2	480/3/60	*	14	10	SUPPLY FAN CONTROL CABINET	*	*	*	(SEE NOTES 4) 3#12, 1#12GND, 3/4"C	*	*	*	*	*	*	*	WITH EQUIPMENT	PROVIDE MOTOR FEEDER FROM MOTOR CONTROL CABINET VFD TO FAN MOTOR IN AHU FAN ARRAY.
	SUPPLY FAN ARRAY MOTOR 3	480/3/60	*	14	10	SUPPLY FAN CONTROL CABINET	*	*	*	(SEE NOTES 4) 3#12, 1#12GND, 3/4"C	*	*	*	*	*	*	*	WITH EQUIPMENT	PROVIDE MOTOR FEEDER FROM MOTOR CONTROL CABINET VFD TO FAN MOTOR IN AHU FAN ARRAY.
	SUPPLY FAN ARRAY MOTOR 4	480/3/60	*	14	10	SUPPLY FAN CONTROL CABINET	*	*	*	(SEE NOTES 4) 3#12, 1#12GND, 3/4"C	*	*	*	*	*	*	*	WITH EQUIPMENT	PROVIDE MOTOR FEEDER FROM MOTOR CONTROL CABINET VFD TO FAN MOTOR IN AHU FAN ARRAY.
AHU-2 LTS. & RECPT	AHU LIGHTS AND GFI RECEPTACLE (4) 12W LIGHTS (1) 20A RECPTACLE	120/1/60	48W LTG.	16	*	SEE PLANS	20A-1P	*	*	(SEE NOTE 5) 2#10, 1#10GND, 3/4"C	*	*	*	*	*	*	*	*	EC TO PROVIDE ELECTRICAL WIRING AND CONDUIT IN AHU TO CONNECT ALL LIGHTING TO UNIT TIMER SWITCH PER VENDOR WIRING DIAGRAM
RF-1 RETURN FAN ARRAY	RF-1 RETURN FAN (3) RETURN FANS, FEEDER TO EF CONTROL PANEL MOTOR CONTROL CABINET	480/3/60	*	42 FLA	(3) 10	ENHD2/ MCC-2A	60A-3P (SEE NOTE 3)	*	*	(SEE NOTE 2) 3#6, 1#10GND, 3/4"C.	100/3	60A (SEE NOTE 6)	1	WITH EQUIPMENT	*	*	*	WITH EQUIPMENT (3) VFDS IN RETURN FAN ARRAY MOTOR CONTROL CABINET	FLA = 42A, MCA=45A, MOP=60 PROVIDE ELECTRICAL CONNECTION TO SUPPLY FAN MOTOR CONTROL CABINET.
	RETURN FAN ARRAY MOTOR 1	480/3/60	*	14	10	SUPPLY FAN CONTROL CABINET	*	*	*	(SEE NOTES 4) 3#12, 1#12GND, 3/4"C	*	*	*	*	*	*	*	WITH EQUIPMENT	PROVIDE MOTOR FEEDER FROM MOTOR CONTROL CABINET VFD TO FAN MOTOR IN AHU FAN ARRAY.
	RETURN FAN ARRAY MOTOR 2	480/3/60	*	14	10	SUPPLY FAN CONTROL CABINET	*	*	*	(SEE NOTES 4) 3#12, 1#12GND, 3/4"C	*	*	*	*	*	*	*	WITH EQUIPMENT	PROVIDE MOTOR FEEDER FROM MOTOR CONTROL CABINET VFD TO FAN MOTOR IN AHU FAN ARRAY.
	RETURN FAN ARRAY MOTOR 3	480/3/60	*	14	10	SUPPLY FAN CONTROL CABINET	*	*	*	(SEE NOTES 4) 3#12, 1#12GND, 3/4"C	*	*	*	*	*	*	*	WITH EQUIPMENT	PROVIDE MOTOR FEEDER FROM MOTOR CONTROL CABINET VFD TO FAN MOTOR IN AHU FAN ARRAY.
RF-1 LTS. & RECPT	RETURN FAN LIGHTS AND GFI RECEPTACLE (2) 12W LIGHTS (1) 20A RECPTACLE	120/1/60	48W LTG.	16	*	SEE PLANS	20A-1P	*	*	(SEE NOTE 5) 2#10, 1#10GND, 3/4"C	*	*	*	*	*	*	*	*	EC TO PROVIDE ELECTRICAL WIRING AND CONDUIT IN RETURN FAN TO CONNECT ALL LIGHTING TO UNIT TIMER SWITCH PER VENDOR WIRING DIAGRAM
RF-2 RETURN FAN ARRAY	RF-2 RETURN FAN (3) RETURN FANS, FEEDER TO EF CONTROL PANEL MOTOR CONTROL CABINET	480/3/60	*	42 FLA	(3) 10	ENHD2/ MCC-2A	60A-3P (SEE NOTE 3)	*	*	(SEE NOTE 2) 3#6, 1#10GND, 3/4"C.	100/3	60A (SEE NOTE 6)	1	WITH EQUIPMENT	*	*	*	WITH EQUIPMENT (3) VFDS IN RETURN FAN ARRAY MOTOR CONTROL CABINET	FLA = 42A, MCA=45A, MOP=60 PROVIDE ELECTRICAL CONNECTION TO SUPPLY FAN MOTOR CONTROL CABINET.
	RETURN FAN ARRAY MOTOR 1	480/3/60	*	14	10	SUPPLY FAN CONTROL CABINET	*	*	*	(SEE NOTES 4) 3#12, 1#12GND, 3/4"C	*	*	*	*	*	*	*	WITH EQUIPMENT	PROVIDE MOTOR FEEDER FROM MOTOR CONTROL CABINET VFD TO FAN MOTOR IN AHU FAN ARRAY.
	RETURN FAN ARRAY MOTOR 2	480/3/60	*	14	10	SUPPLY FAN CONTROL CABINET	*	*	*	(SEE NOTES 4) 3#12, 1#12GND, 3/4"C	*	*	*	*	*	*	*	WITH EQUIPMENT	PROVIDE MOTOR FEEDER FROM MOTOR CONTROL CABINET VFD TO FAN MOTOR IN AHU FAN ARRAY.
	RETURN FAN ARRAY MOTOR 3	480/3/60	*	14	10	SUPPLY FAN CONTROL CABINET	*	*	*	(SEE NOTES 4) 3#12, 1#12GND, 3/4"C	*	*	*	*	*	*	*	WITH EQUIPMENT	PROVIDE MOTOR FEEDER FROM MOTOR CONTROL CABINET VFD TO FAN MOTOR IN AHU FAN ARRAY.
E-2 LTS. & RECPT	RETURN FAN LIGHTS AND GFI RECEPTACLE (2) 12W LIGHTS (1) 20A RECPTACLE	120/1/60	48W LTG.	16	*	SEE PLANS	20A-1P	*	*	(SEE NOTE 5) 2#10, 1#10GND, 3/4"C	*	*	*	*	*	*	*	*	EC TO PROVIDE ELECTRICAL WIRING AND CONDUIT IN RETURN FAN TO CONNECT ALL LIGHTING TO UNIT TIMER SWITCH PER VENDOR WIRING DIAGRAM
	HOUSE WATER PUMP SKID DUPLEX 10HP PUMPS	480/3/60	*	14	(2) 10	ENHD2/ MCC-2A	40/3 (SEE NOTE 3)	*	*	3#8, 1#10GND, 3/4"C (SEE NOTE 8)	60/3	*	1	ON SKID CONTROL PANEL	*	*	*	EXISTING IN CNTRL PNL	*
	1ST FLOOR LECTURE ROOM EXHAUST FAN	480/3/60	*	1.1	1/2 (SEE NOTE 10)	ENHD2/ MCC-2A	15/3 (SEE NOTE 10)	*	*	3#12, 1#12GND, 3/4"C (SEE NOTE 11)	30/3	*	1	WITH STARTER	1	2.0 (SEE NOTE 10)	ELECTRICAL	*	(SEE NOTE 10, 11) PROVIDE NEW STARTER DISCONNECT TO REPLACE STARTER THAT WAS IN MCC.
	WELDING RECEPTACLE SECOND FLOOR MECHANICAL ROOM	480/3/60	*	60	*	ENHD2/ MCC-2A	15/3 (SEE NOTE 10)	*	*	3#8, 1#10GND, 1"C	60/3 (SEE NOTE 12)	60	12	ELECTRICAL	*	*	*	*	(SEE NOTE 12) PROVIDE WELDING RECEPTACLE AND PLUG CONNECTED TO FUSED DISCONNECT
	EMS PHASE MONITOR	480/3/60	*	3	*	ENHD2/ MCC-2A	15/3 (SEE NOTE 3)	*	*	3#12, 1#12GND, 3/4"C (SEE NOTE 8)	*	3	1	ELECTRICAL	*	*	*	*	(SEE NOTE 13) RECONNECT EXISTING PHASE MONITOR TO NEW PANEL.
SHWP-2	SECONDARY HOT WATER PUMP FIRST AND SECOND FLR RADIANT SYS.	480/3/60	*	3.4	2	ENHD2/ MCC-2A	15/3 (SEE NOTE 3)	*	*	3#12, 1#12GND, 3/4"C (SEE NOTE 8)	30/3	*	1	INTEGRAL WITH VFD	*	*	*	EXISTING	*
SHWP-2A	SECONDARY HOT WATER PUMP (STANDBY) FIRST AND SECOND FLR RADIANT SYS.	480/3/60	*	3.4	2	ENHD2/ MCC-2A	15/3 (SEE NOTE 3)	*	*	3#12, 1#12GND, 3/4"C (SEE NOTE 8)	30/3	*	1	INTEGRAL WITH VFD	*	*	*	EXISTING	*
SHWP-3	SECONDARY HOT WATER PUMP FIRST AND SECOND FLR TERMINAL UNITS	480/3/60	*	3	1.5	PP-2	15/3 (SEE NOTE 7)	*	*	3#12, 1#12GND, 3/4"C (SEE NOTE 9)	30/3	*	1	INTEGRAL WITH VFD	*	*	*	EXISTING	*
SHWP-4	SECONDARY HOT WATER PUMP THIRD FLR RADIANT SYS.	480/3/60	*	3.4	2	PP-2	15/3 (SEE NOTE 7)	*	*	3#12, 1#12GND, 3/4"C (SEE NOTE 9)	30/3	*	1	INTEGRAL WITH VFD	*	*	*	EXISTING	*
SHWP-5	SECONDARY HOT WATER PUMP THIRD FLR TERMINAL UNITS	480/3/60	*	7.6	5	PP-2	15/3 (SEE NOTE 7)	*	*	3#12, 1#12GND, 3/4"C (SEE NOTE 9)	30/3	*	1	INTEGRAL WITH VFD	*	*	*	EXISTING	*

NOTES:
(1) WHERE VFDS ARE SHOWN FURNISHED BY THE MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR SHALL INSTALL AND WIRE.
(2) PROVIDE NEW FEEDER FROM SOURCE BREAKER TO AHU MOTOR CONTROL CABINET.
(3) BREAKER IN NEW PANEL REPLACING MCC-2A. PROVIDE BREAKER PER PANEL SCHEDULE AND RISER DIAGRAM
(4) PROVIDE FAN MOTOR INTERCONNECT WIRING FROM FAN MOTOR CONTROL CABINETS TO EACH FAN ARRAY MOTOR.
(5) THE 120V POWER FEEDS TO AHU LIGHTING AND RECEPTACLES, (2) 120V 20A CIRCUITS, CAN BE RUN IN A COMMON CONDUIT. EACH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR.
(6) FUSING IN AHU MOTOR CONTROL CABINET MAIN DISCONNECT SUPPLIED WITH AHU BY AHU VENDOR.
(7) EXISTING BREAKER IN SOURCE PANEL TO BE REUSED TO REFEED PUMP. PROJECT SCOPE IS TO PROVIDE REWORK EXISTING FEEDER TO EXISTING PUMP VFD TO COORDINATE WITH AHU REPLACEMENT. EXISTING SOURCE BREAKER TO BE REUSED.
(8) REWORK FEED TO CONNECT TO NEW SOURCE BREAKER IN NEW PANEL REPLACING THE EXISTING MCC. IN ADDITION, PROJECT SCOPE IS TO REWORK EXISTING FEEDER TO EXISTING PUMP VFD TO COORDINATE WITH AHU REPLACEMENT. FIELD VERIFY IF FEEDER IS IMPACTED BY AHU REPLACEMENT.
(9) PUMP FEEDER CONDUIT AND WIRING TO BE REWORKED TO REVISE FEEDER TO COORDINATE WITH NEW AHU AND RETURN FAN INSTALLATION. REWORK CONDUIT AND PROVIDE NEW WIRING FROM SOURCE BREAKER TO PUMP VFD.
(10) FIELD VERIFY EXISTING FAN SIZE AND EXISTING BREAKER IN MCC. PROVIDE FUSING FOR STARTER DISCONNECT BASED ON MOTOR HP.
(11) EXISTING FAN STARTER IN MCC-2A REPLACED BY PROJECT. REWORK FAN FEEDER AND INTERLOCK CONTROL WIRING TO CONNECT TO NEW STARTER DISCONNECT MOUNTED NEXT TO NEW PANEL IN 2ND FLOOR MECHANICAL ROOM PROVIDE NEW FEEDER BETWEEN NEW PANEL AND STARTER.
(12) PROVIDE A NEW 480V 3-PHASE 60A WELDING DISCONNECT FOR SECOND FLOOR MECHANICAL ROOM. PROVIDE FUSED DISCONNECT CONNECTED TO A 480V 3PH WELDING RECEPTACLE. WELDING RECPTACLE TO BE PIN AND SHEEVE TYPE. PROVIDE A MATCHING PLUG FOR THE RECEPTACLE BEING PROVIDED. TURN PLUG OVER TO LIBRARY REPRESENTATIVES.
(13) PROVIDE FUSHE BLOCK AND FUSE ON FEED TO EXISITNG EMS PHASE MONITOR.

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SEAL

ELECTRICAL SCHEDULES

2ND FLOOR AHU REPLACEMENT
Skokie Public Library
5215 Oakton St.
Skokie, IL 60077

ISSUES & REVISIONS

NO.	DESCRIPTION	DATE
1	50% OWNER REVIEW	2.11.26
2	100% OWNER REVIEW	3.04.26
3	ISSUED FOR BID	3.11.26

KEYPLAN

SCALE

DRAWN	CHECKED	APPROVED
JDS	SDG	APM

PROJECT NO.
P25-1226-00

E003

ELECTRICAL GENERAL DEMOLITION NOTES

A. SEE DRAWING E000 FOR SYMBOLS AND ABBREVIATIONS.

B. SEE DRAWING E001 FOR ADDITIONAL GENERAL DEMOLITION NOTES.

C. CONTRACTOR SHALL OBTAIN A COMPLETE SET OF MECHANICAL PLANS AND SPECIFICATIONS FOR EXACT LOCATIONS AND QUANTITIES OF ALL EQUIPMENT.

D. VERIFY EXTENT OF DEMOLITION WITH ENGINEER AND SPL REPRESENTATIVES PRIOR TO STARTING DEMOLITION.

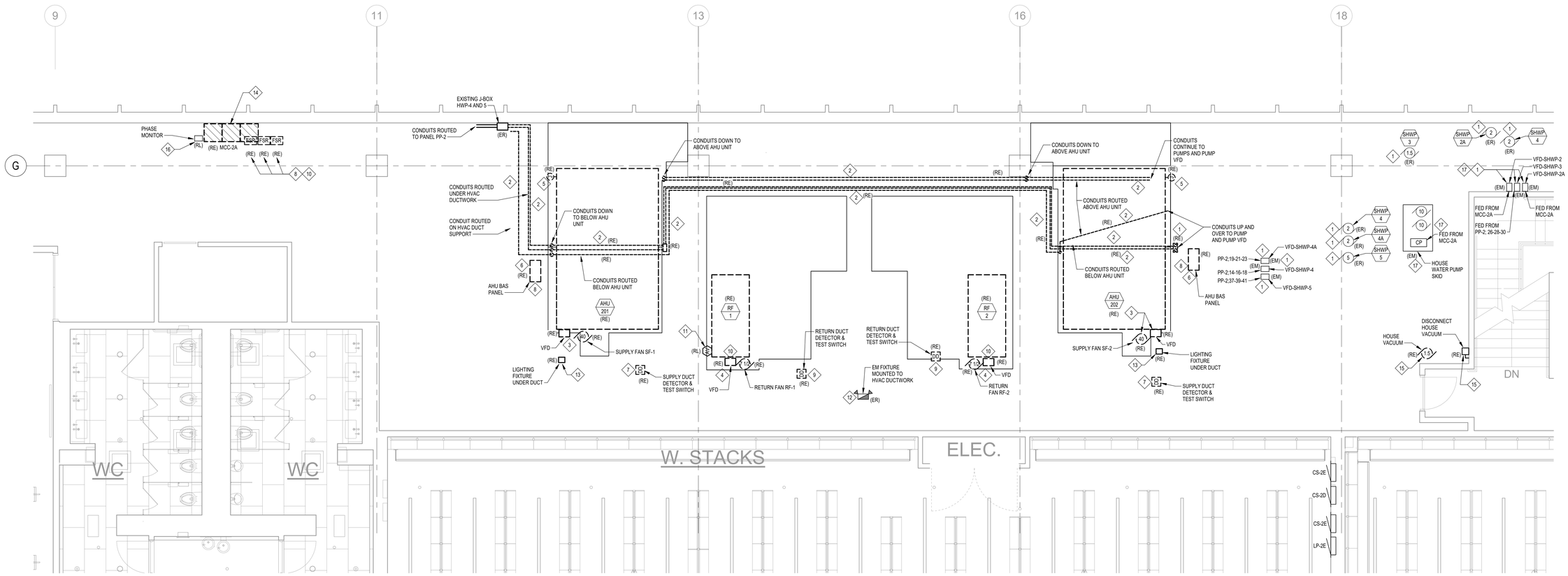
E. ABANDONED CONDUIT AND WIRING SHALL BE COMPLETELY REMOVED BACK TO THE SOURCE.

F. WHERE DEVICES ARE REMOVED FROM WALLS TO REMAIN, CONTRACTOR SHALL PATCH WALLS TO MATCH EXISTING AS REQUIRED.

G. WHERE COMPLETE REMOVAL OF ABANDONED CONDUIT IS NOT POSSIBLE OR PRACTICAL, ABANDONED CONDUIT SHALL BE CUT AND CAPPED AT NEAREST STRUCTURAL PENETRATION. FIRESTOP PENETRATION AS REQUIRED.

8 DEMOLITION PLAN NOTES

1. EXISTING 480V FEED TO EXISTING HOT WATER PUMP TO BE REWORKED TO COORDINATE WITH REMOVAL OF EXISTING AHU AND RETURN FANS. FIELD VERIFY THE EXISTING CONDUIT ROUTING TO THE PUMP VFD FROM THE SOURCE PANEL OR MCC. CONDUIT TO BE REWORKED TO REROUTE THE CONDUIT SUCH THAT THE EXISTING AHU, RETURN FANS, AND SECTIONS OF THE HVAC DUCT WORK CAN BE REMOVED AND REPLACED WITHOUT IMPACTING THE ELECTRICAL FEED TO THE PUMP.
2. REWORK EXISTING ELECTRICAL FEEDS FOR HOT WATER PUMPS HWP-4 AND 5 ROUTED UNDER THE AND AROUND THE EXISTING AIR HANDLERS AND RETURN FANS. INTERCEPT THE EXISTING 480V POWER FEED CONDUITS AND REWORK THE CONDUITS TO ROUTE THE CONDUIT ABOVE THE AHU AND RETURN FANS TO ALLOW FOR THE EXISTING EQUIPMENT AND DUCT WORK REMOVAL AND REPLACEMENT WITH NEW IN SIMILAR LOCATIONS.
3. DISCONNECT EXISTING 480V ELECTRICAL FEED TO AHU FAN MOTOR TO ALLOW FOR AHU REMOVAL. REMOVE VFD, CONDUIT AND WIRING ROUTED BACK TO THE SOURCE MCC BUCKET IN THE MOTOR CONTROL CENTER. COORDINATE DISCONNECT REMOVAL OF FAN FEEDER WITH THE PROJECT PHASING PER THE MECHANICAL DRAWINGS, ENGINEER, AND LIBRARY REPRESENTATIVES.
4. DISCONNECT EXISTING 480V ELECTRICAL FEED TO RETURN FAN MOTOR TO ALLOW FOR RETURN FAN ASSEMBLY REMOVAL. REMOVE VFD, CONDUIT AND WIRING ROUTED BACK TO THE SOURCE MCC BUCKET IN THE MOTOR CONTROL CENTER. COORDINATE DISCONNECT REMOVAL OF FAN FEEDER WITH THE PROJECT PHASING PER THE MECHANICAL DRAWINGS, ENGINEER, AND LIBRARY REPRESENTATIVES.
5. DISCONNECT EXISTING 120V ELECTRICAL FEED TO AHU LIGHTING TO ALLOW FOR AHU REMOVAL AND REPLACEMENT. REMOVE EXISTING 120V CIRCUIT BACK TO THE NEAREST JUNCTION BOX TO ALLOW CIRCUIT TO BE REWORKED AND REUSED IN FEEDING LIGHTING IN THE NEW AHU UNIT.
6. EXISTING BAS CONTROL PANEL FOR AHU UNIT TO BE RELOCATED AS PART OF THE AHU REPLACEMENT. DISCONNECT 120V ELECTRICAL FEED TO PANEL TO ALLOW FOR PANEL REMOVAL AND RELOCATION. REMOVE WIRING AND CONDUIT BACK TO NEAREST JUNCTION BOX. CIRCUIT TO REMAIN TO BE REWORKED AND REUSED IN FEEDING BAS PANEL IN NEW LOCATION. REFER TO NEW WORK ELECTRICAL PLAN ON DRAWING E102 FOR NEW PANEL LOCATION AND ADDITIONAL INFORMATION.
7. DISCONNECT AND REMOVE EXISTING DUCT MOUNTED SMOKE DETECTOR AND REMOTE TEST SWITCH FOR AHU SUPPLY DUCT. REMOVE EXISTING FIRE ALARM CIRCUIT BACK TO A POINT WHERE IT CAN BE REWORKED TO THE NEW DUCT DETECTOR IN SIMILAR LOCATION ON NEW AHU DUCTWORK. PROVIDE ALL PROGRAMMING REQUIRED TO TEMPORARY REMOVE THE DETECTOR FROM THE LIBRARY FIRE ALARM SYSTEM. TEMPORARILY REWORK FIRE ALARM WIRING TO ALLOW REMAINING FIRE ALARM SYSTEM TO CONTINUE TO OPERATE AFTER DETECTOR IS REMOVED. REFER TO NEW WORK ELECTRICAL PLAN ON DRAWING E102 FOR NEW PANEL LOCATION AND ADDITIONAL INFORMATION.
8. FIELD VERIFY LOCATION OF EXISTING FIRE ALARM SHUT DOWN RELAY FOR AHU SUPPLY FAN. DISCONNECT AND REMOVE RELAY. FIRE ALARM FAN SHUT DOWN RELAY TO BE RELOCATED TO NEXT TO NEW AHU MOTOR CONTROL CABINET AS PART OF NEW AHU INSTALLATION. REFER TO NEW WORK ELECTRICAL PLAN ON DRAWING E102 FOR NEW PANEL LOCATION AND ADDITIONAL INFORMATION.
9. DISCONNECT AND REMOVE EXISTING DUCT MOUNTED SMOKE DETECTOR AND REMOTE TEST SWITCH FOR RETURN FAN RETURN DUCT. REMOVE EXISTING FIRE ALARM CIRCUIT BACK TO A POINT WHERE IT CAN BE REWORKED TO THE NEW DUCT DETECTOR IN SIMILAR LOCATION ON NEW AHU DUCTWORK. PROVIDE ALL PROGRAMMING REQUIRED TO TEMPORARY REMOVE THE DETECTOR FROM THE LIBRARY FIRE ALARM SYSTEM. TEMPORARY REWORK FIRE ALARM WIRING TO ALLOW REMAINING FIR ALARM SYSTEM TO CONTINUE TO OPERATE AFTER DETECTOR IS REMOVED. REFER TO NEW WORK ELECTRICAL PLAN ON DRAWING E102 FOR NEW PANEL LOCATION AND ADDITIONAL INFORMATION.
10. FIELD VERIFY LOCATION OF EXISTING FIRE ALARM SHUT DOWN RELAY FOR RETURN FAN. DISCONNECT AND REMOVE RELAY. FIRE ALARM FAN SHUT DOWN RELAY TO BE RELOCATED TO NEXT TO NEW AHU MOTOR CONTROL CABINET AS PART OF NEW AHU INSTALLATION. REFER TO NEW WORK ELECTRICAL PLAN ON DRAWING E102 FOR NEW PANEL LOCATION AND ADDITIONAL INFORMATION.
11. FIRE ALARM STROBE UNIT MOUNTED TO RETURN FAN ASSEMBLY TO BE DISCONNECTED AND REMOVED TO ALLOW FOR RETURN FAN REMOVAL AND REPLACEMENT. REFER TO NEW WORK ELECTRICAL PLAN ON DRAWING E102 FOR NEW NOTIFICATION DEVICE LOCATION AND ADDITIONAL INFORMATION.
12. EXISTING EMERGENCY LIGHTING FIXTURE MOUNTED TO HVAC DUCTWORK. RELOCATE EM FIXTURE AS NEEDED TO ALLOW FOR INSTALLATION TO ALLOW FOR AHU DUCTWORK REMOVAL AND REWORK AND TEMPORARY HVAC DUCT INSTALLATION. IF REQUIRED, TEMPORARY RELOCATE EM FIXTURE TO ALLOW IT TO CONTINUE TO PROVIDE EM LIGHTING ON THE EXIT PATHWAY. IF RELOCATED FIXTURE TO BE REINSTALLED IN EXISTING LOCATION AFTER TEMPORARY DUCTWORK IS REMOVED.
13. DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURE MOUNTED UNDER EXISTING HVAC DUCTWORK TO ALLOW FOR DUCTWORK REWORK. REMOVE EXISTING CONDUIT AND WIRING BACK TO THE NEAREST JUNCTION BOX STILL IN SERVICE NOT UNDER THE HVAC DUCTWORK.
14. EXISTING MOTOR CONTROL CENTER TO BE REPLACED WITH NEW DISTRIBUTION PANEL. DISCONNECT FEEDER TO MCC-2A AND DISCONNECT EXISTING BRANCH CIRCUITS FED FROM MCC TO ALLOW FOR MCC REMOVAL AND REPLACEMENT WITH NEW DISTRIBUTION PANEL. FIELD VERIFY EXISTING CIRCUIT BREAKERS AND HARDWARE STILL FEEDING REMAINING LOADS IN THE MOTOR CONTROL CENTER. DOCUMENT EXISTING INFORMATION AND REVIEW VERSUS NEW PANEL BEING PROVIDED TO REPLACE THE MCC. REFER TO ELECTRICAL RISER DIAGRAMS, NEW WORK ELECTRICAL PLAN, AND ELECTRICAL PANEL SCHEDULE FOR THE ALTERNATE PANEL FOR ADDITIONAL INFORMATION.
15. DISCONNECT 480V ELECTRICAL FEED FOR HOUSE VACUUM AND REMOVE CONDUIT AND WIRING BACK TO MOTOR CONTROL CENTER.
16. DISCONNECT AND REMOVE EXISTING PHASE MONITOR. CLEAN AND STORE PHASE MONITOR TO ALLOW MONITOR TO BE REINSTALLED AND CONNECTED TO NEW BREAKER IN REPLACEMENT DISTRIBUTION PANEL.
17. EXISTING PUMP FEED FROM MCC-2A BEING REPLACED BY NEW DISTRIBUTION PANEL. DISCONNECT ELECTRICAL FEED FROM MCC AND PULL BACK TO A POINT WERE IT CAN BE REWORKED TO CONNECT TO NEW DISTRIBUTION PANEL.



1 PARTIAL ELECTRICAL SECOND FLOOR PLAN - DEMOLITION
SCALE: 1/4" = 1'-0"

0 2' 4' 8'
0 1' 2'
1/4" = 1'-0"

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ELECTRICAL SECOND FLOOR PLAN - DEMOLITION

2ND FLOOR AHU REPLACEMENT
Skokie Public Library
5215 Oakton St.
Skokie, IL 60077

ISSUES & REVISIONS

NO.	DESCRIPTION	DATE
1	50% OWNER REVIEW	2.11.26
2	100% OWNER REVIEW	3.04.26
3	ISSUED FOR BID	3.11.26

KEYPLAN

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SCALE
As indicated

DRAWN	CHECKED	APPROVED
JDS	SDG	APM

PROJECT NO.
P25-1226-00

ED102

ELECTRICAL GENERAL DEMOLITION NOTES

A. SEE DRAWING E000 FOR SYMBOLS AND ABBREVIATIONS.

B. SEE DRAWING E001 FOR ADDITIONAL GENERAL DEMOLITION NOTES.

C. CONTRACTOR SHALL OBTAIN A COMPLETE SET OF MECHANICAL PLANS AND SPECIFICATIONS FOR EXACT LOCATIONS AND QUANTITIES OF ALL EQUIPMENT.

D. VERIFY EXTENT OF DEMOLITION WITH ENGINEER AND SPL REPRESENTATIVES PRIOR TO STARTING DEMOLITION.

E. ABANDONED CONDUIT AND WIRING SHALL BE COMPLETELY REMOVED BACK TO THE SOURCE.

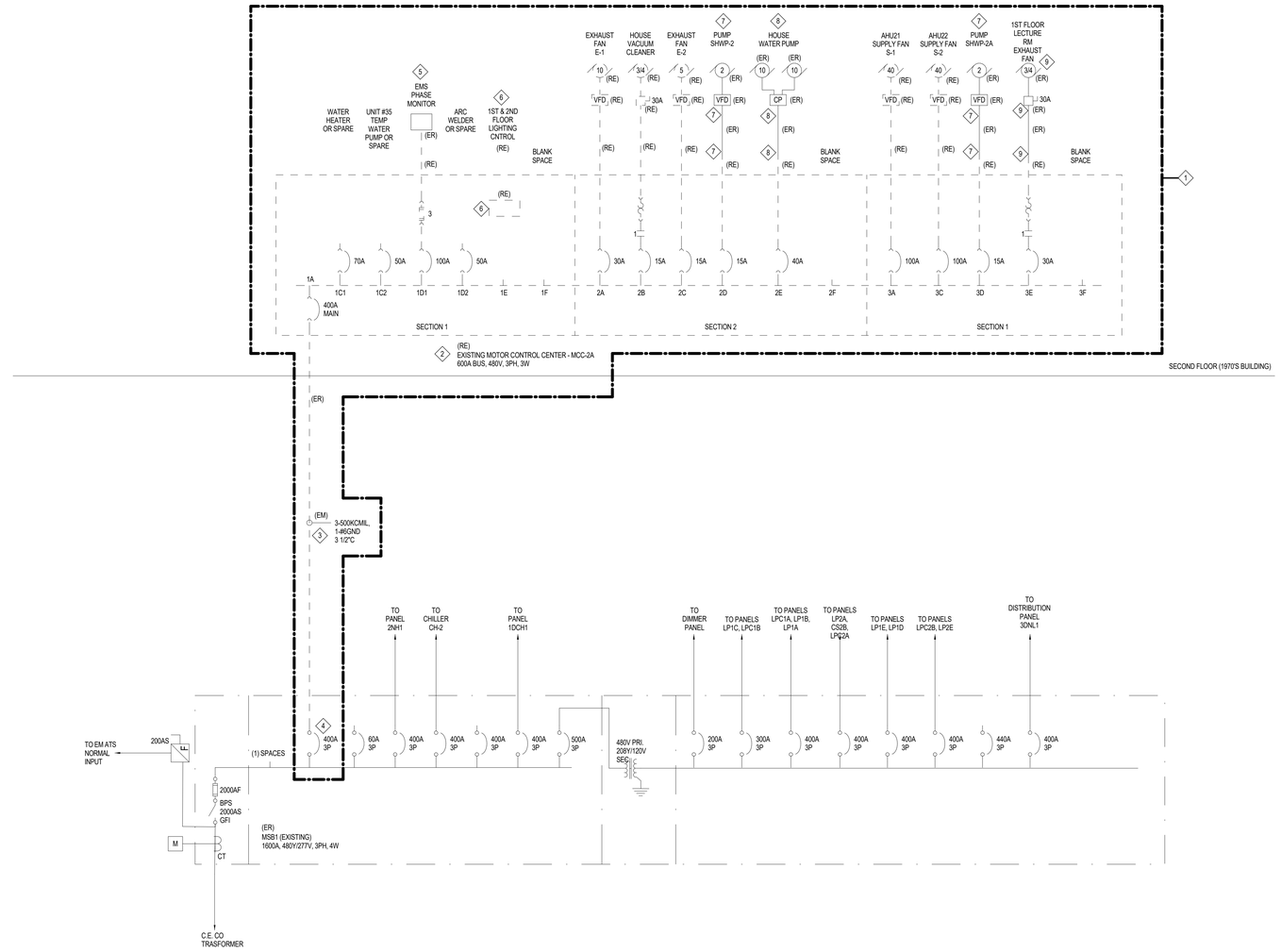
F. WHERE DEVICES ARE REMOVED FROM WALLS TO REMAIN, CONTRACTOR SHALL PATCH WALLS TO MATCH EXISTING AS REQUIRED.

G. WHERE COMPLETE REMOVAL OF ABANDONED CONDUIT IS NOT POSSIBLE OR PRACTICAL, ABANDONED CONDUIT SHALL BE CUT AND CAPPED AT NEAREST STRUCTURAL PENETRATION. FIRESTOP PENETRATION AS REQUIRED.

H. CONTRACTOR TO NOTE THAT THE BUILDING IS TO REMAIN IN OPERATION DURING CONSTRUCTION. DEMOLITION SHALL BE COORDINATED WITH NEW EQUIPMENT INSTALLATION AND PROJECT PHASING TO REDUCE OR ELIMINATE BUILDING POWER OUTAGES. ANTICIPATED POWER OUTAGE TO BE COORDINATE WITH HOSPITAL REPRESENTATIVES NO LESS THAN 10 WORKING DAYS PRIOR TO REQUESTED SHUT DOWN DATE.

DEMOLITION KEYED NOTES

1. BOXED AREA ON RISER DIAGRAM INDICATED THE PROJECT SCOPE OF WORK.
2. EXISTING MOTOR CONTROL CENTER TO BE DISCONNECTED AND REMOVED. MCC TO BE REPLACED WITH NEW DISTRIBUTION PANEL. FIELD VERIFY AND DOCUMENT ALL LOADS ON MCC. REFER TO NEW WORK ELECTRICAL RISER DIAGRAM ON ES00, ELECTRICAL PANEL SCHEDULE, AND ELECTRICAL SPECIFICATIONS FOR INFORMATION NEW DISTRIBUTION PANEL.
3. EXISTING MCC FEEDER FROM FIRST FLOOR SWITCHBOARD MSB2 TO BE MODIFIED AND REWORKED TO FEED NEW DISTRIBUTION PANEL REPLACING MCC. FIELD VERIFY EXISTING CONDUIT SIZE OF FEEDER. EXISTING 3 1/2" CONDUIT PATHWAY IS TO REMAIN IN PLACE TO BE REWORKED TO CONNECT TO NEW DISTRIBUTION PANEL. DISCONNECT AND REMOVE EXISTING FEEDER WIRING IN ITS ENTIRETY FROM THE SWITCHBOARD TO THE MCC.. PROTECT CONDUIT FROM DEMOLITION AND CONSTRUCTION ACTIVITIES.
4. EXISTING CIRCUIT BREAKER IN SWITCHBOARD FEEDING THE MCC TO REMAIN IN PLACE TO FEED NEW DISTRIBUTION PANEL.
5. DISCONNECT ELECTRICAL FEED TO EMS PHASE MONITOR TO ALLOW PHASE MONITOR TO BE RE-FED FROM NEW DISTRIBUTION PANEL.
6. EXISTING ABANDONED LIGHTING CONTROL HARDWARE IN MCC BUCKET TO BE DEMOLISHED.
7. EXISTING HOT WATER PUMP TO REMAIN IN PLACE. DISCONNECT ELECTRICAL FEED FROM SOURCE BREAKER. PULL BACK FEED TO A POINT NEAR THE MCC WHERE THE FEED CAN BE REWORKED AND CONNECT TO NEW SOURCE BREAKER IN NEW DISTRIBUTION PANEL REPLACING THE MCC. CONTRACTOR TO ALSO NOTE PROJECT SCOPE OF REWORKING PUMP FEEDERS ROUTED UNDER AND ABOVE EXISTING AIR HANDLERS.
8. EXISTING HOUSE WATER PUMP SKID TO REMAIN IN PLACE. DISCONNECT ELECTRICAL FEED FROM SOURCE BREAKER IN MCC. PULL BACK FEED TO A POINT NEAR THE MCC WHERE THE FEED CAN BE REWORKED AND CONNECT TO NEW SOURCE BREAKER IN NEW DISTRIBUTION PANEL REPLACING THE MCC.
9. EXISTING LECTURE ROOM EXHAUST FAN TO REMAIN IN PLACE. DISCONNECT ELECTRICAL FEED FROM SOURCE STARTER BUCKET IN MCC. PULL ELECTRICAL FEED BACK TO A POINT NEAR THE MCC WHERE THE FEED CAN BE REWORKED AND CONNECT TO NEW STAND ALONE STARTER DISCONNECT AND NEW SOURCE BREAKER IN NEW DISTRIBUTION PANEL REPLACING THE MCC. DOCUMENT INTERLOCK WIRING FOR EXHAUST FAN CONTROL WITH CONTROLS VENDOR. PULL CONTROL WIRING BACK TO A POINT WHERE IS CAN BE REWORKED AND RECONNECTED TO NEW STARTER FOR FAN.



1 ELECTRICAL RISER DIAGRAM - DEMOLITION
SCALE: NO SCALE

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ELECTRICAL RISER DIGRAM - DEMOLITION

2ND FLOOR AHU REPLACEMENT
Skokie Public Library
5215 Oakton St.
Skokie, IL 60077

ISSUES & REVISIONS

NO.	DESCRIPTION	DATE
1	50% OWNER REVIEW	3.11.26
2	100% OWNER REVIEW	3.04.26
3	ISSUED FOR BID	3.11.26

KEYPLAN

SCALE: As indicated

DRAWN	CHECKED	APPROVED
JDS	SDG	APM

PROJECT NO. P25-1226-00

ED500

ELECTRICAL GENERAL CONSTRUCTION NOTES

A. SEE DRAWING E000 FOR SYMBOLS AND ABBREVIATIONS.

B. SEE DRAWING E001 FOR ELECTRICAL GENERAL NOTES.

C. SEE DRAWING E002 FOR ELECTRICAL SPECIFICATIONS.

D. SEE EQUIPMENT ELECTRICAL CONNECTION SCHEDULE ON DRAWING E003 FOR ELECTRIC CONNECTION REQUIREMENTS TO EQUIPMENT.

E. UNLESS NOTED, ALL WORK SHOWN ON THE DRAWING IS TO BE CONSIDERED NEW.

F. CONTRACTOR SHALL OBTAIN A COMPLETE SET OF MECHANICAL PLANS AND SPECIFICATIONS FOR EXACT LOCATIONS AND QUANTITIES OF ALL EQUIPMENT.

G. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN THE FIELD TO INSURE THAT THE NEW WORK WILL FIT TO THE EXISTING STRUCTURE AS SHOWN ON THE DRAWINGS. SHOULD ANY CONDITIONS EXIST OR BE DISCOVERED THAT PREVENT THE INSTALLATION OF WORK AS SHOWN, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO THE COMMENCEMENT OF ANY WORK.

H. VERIFY EXACT LOCATION OF NEW EQUIPMENT WITH ENGINEER AND OWNER'S REPRESENTATIVES PRIOR TO RENOVATION.

I. FIELD VERIFY EXACT LOCATION OF ALL EXISTING EQUIPMENT, BRANCH CIRCUIT PANELS AND COMMUNICATIONS EQUIPMENT PRIOR TO ROUGH-IN.

J. CIRCUIT NUMBERS SHOWN ARE DIAGRAMMATIC. THEY ARE INDICATED ON THE PLAN TO SHOW CIRCUITING INTENT FOR THE PROJECT AND ARE BASED UPON A LIMITED FIELD REVIEW OF AVAILABLE CIRCUITS IN THE PANEL(S). VERIFY CIRCUIT AVAILABILITY IN THE FIELD INCLUDING CIRCUITS THAT BECOME AVAILABLE THROUGH DEMOLITION OF THE EXISTING AREA AND UPDATE THE ROOM CIRCUITING AS REQUIRED.

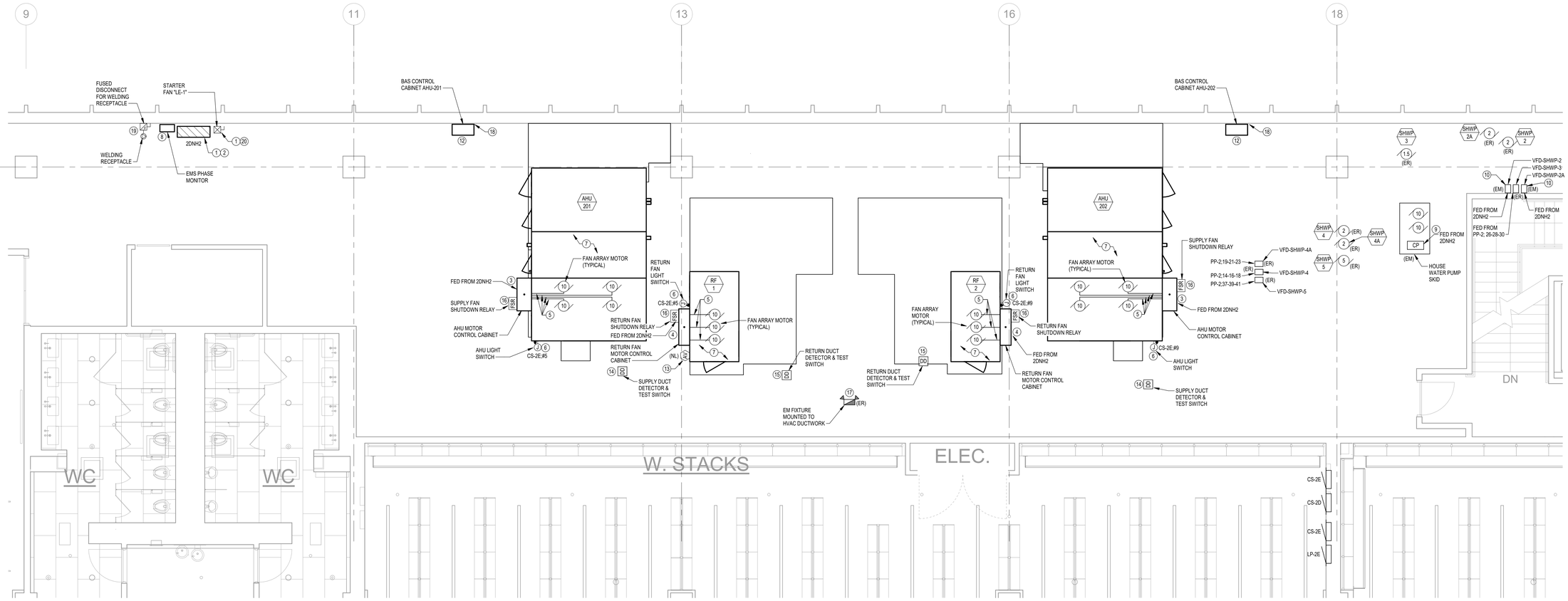
K. ALL WIRING AND CONDUIT SHALL BE NEW UNLESS NOTED OTHERWISE.

L. SOME AREAS WERE NOT ACCESSIBLE DURING DESIGN. EXISTING ELECTRICAL DEVICES IN THESE AREAS ARE NOT SHOWN, BUT ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.

M. ELECTRICAL CONTRACTOR SHALL UPDATE ALL PANEL DIRECTORIES FOR ALL PANELS IMPACTED BY THIS PROJECT.

(E) CONSTRUCTION PLAN NOTES

1. PROVIDE NEW 480V DISTRIBUTION PANEL TO REPLACE EXISTING MOTOR CONTROL CENTER PER ELECTRICAL RISER DIAGRAM, ELECTRICAL PANEL SCHEDULE, AND ELECTRICAL SPECIFICATIONS.
2. INTERCEPT EXISTING ELECTRICAL CONDUIT FEEDING FORMER MCC AND REWORK AND EXTEND CONDUIT TO CONNECT TO NEW DISTRIBUTION PANEL. PROVIDE NEW FEEDER WIRING BACK TO SOURCE CIRCUIT BREAKER IN SWITCHBOARD MSB-2 PER THE ELECTRICAL RISER DIAGRAM.
3. PROVIDE A NEW 480V POWER FEED TO AHU SUPPLY FAN ARRAY MOTOR CONTROL CABINET PANEL FOR AHU-201 AND AHU-202 PER THE EQUIPMENT CONNECTION SCHEDULE ON DRAWING SHEET E0.03. PROVIDE 480V 3 PHASE CONNECTION FROM NEW DISTRIBUTION PANEL TO MOTOR CONTROL CABINET.
4. PROVIDE A NEW 480V POWER FEED TO AHU RETURN FAN ARRAY MOTOR CONTROL CABINET PANEL FOR RF-1 AND RF-2 PER THE EQUIPMENT CONNECTION SCHEDULE ON DRAWING SHEET E0.03. PROVIDE 480V 3 PHASE CONNECTION FROM NEW DISTRIBUTION PANEL TO MOTOR CONTROL CABINET.
5. PROVIDE MOTOR FEEDER WIRING IN CONDUIT(S) FOR MOTOR FEEDER FROM EACH VFD IN MOTOR CONTROL PANEL TO CONNECTION POINT ON FAN ARRAY SUPPLY FAN PER EQUIPMENT CONNECTION SCHEDULE. ELECTRICAL MOTOR FEEDER INSTALLATION INSIDE AHU AND RETURN FAN SHALL MEET THE REQUIREMENTS TO THE NEC FOR INSTALLATION IN AN ENVIRONMENTAL AIR PLENUM. COORDINATE WIRING WORK WITH AHU INSTALLER AND AHU MANUFACTURER DOCUMENTATION. CONDUIT PENETRATIONS THROUGH AHU CASING SHALL BE DONE BY AHU INSTALLER. AFTER WIRING IS INSTALLED CONDUIT SHALL BE AIR SEALED AT PENETRATION LOCATION.
6. PROVIDE 120V ELECTRICAL FEEDS TO THE ELECTRICAL CONNECTION POINT FOR THE AHU AND RETURN FAN UNIT MOUNTED LIGHTING AND GFI RECEPTACLE PROVIDED WITH THE UNIT. FIELD VERIFY CONNECTION POINT LOCATION PRIOR TO ROUGH-IN. REWORK THE EXISTING AHU LIGHTING 120V CIRCUIT MADE AVAILABLE BY DEMOLITION OF THE EXISTING AHU AND CONNECT TO ELECTRICAL CONNECTION POINT FOR UNIT LIGHTING PER THE EQUIPMENT CONNECTION SCHEDULE ON DRAWING E003. PROVIDE WIRING AND CONDUIT TO REWORK AND EXTEND THE EXISTING CIRCUIT TO CONNECT TO NEW AHU AND RETURN FAN UNITS. FIELD VERIFY THE EXISTING PANEL AND CIRCUIT SERVING THE AHU LIGHTING AND UPDATE PANEL DIRECTORY FOR NEW LOAD.
7. PROVIDE INTERNAL INTERCONNECTION WIRING FOR UNIT LIGHTING AND RECEPTACLES PER VENDOR REQUIREMENTS AND THE NEC WITH LOCAL AMENDMENTS. ELECTRICAL INSTALLATION INSIDE AHU SHALL MEET THE REQUIREMENTS TO THE NEC FOR INSTALLATION IN AN ENVIRONMENTAL AIR PLENUM. COORDINATE WIRING WORK WITH AHU INSTALLER AND AHU MANUFACTURER DOCUMENTATION. CONDUIT PENETRATIONS THROUGH AHU CASING SHALL BE DONE BY AHU INSTALLER. AFTER WIRING IS INSTALLED CONDUIT SHALL BE AIR SEALED AT PENETRATION LOCATION.
8. MOUNT EXISTING EMS PHASE MONITOR TO ROOM WALL AND CONNECT TO NEW BREAKER IN NEW DISTRIBUTION PANEL REPLACING THE MOTOR CONTROL CENTER PER THE ELECTRICAL RISER DIAGRAM. PROVIDE A FUSE BLOCK WITH 3A FUSES MOUNTED IN AN ELECTRICAL ENCLOSURE ON FEED TO PHASE MONITOR BETWEEN SOURCE BREAKER AND EMS MONITOR. FUSING SHOULD MATCH THE EXISTING FUSES ON FEED TO PHASE MONITOR WHEN IT WAS FED FROM MCC. PROVIDE ALL MATERIALS AND WIRING TO REWORK MONITOR AND ALLOW IT TO BE CONNECTED TO THE DISTRIBUTION PANEL.
9. EXISTING HOUSE WATER PUMP SKID TO BE RE-FED FROM NEW DISTRIBUTION PANEL. INTERCEPT EXISTING ELECTRICAL CONDUIT AND WIRING NEAR LOCATION OF FORMER MOTOR CONTROL CENTER REMOVED BY DEMOLITION AND REWORK AND EXTEND THE CONDUIT TO CONNECT TO NEW PANEL. REWORK FEEDER WIRING TO CONNECT TO BREAKER IN NEW PANEL PER ELECTRICAL RISER DIAGRAM AND PANEL SCHEDULE.
10. EXISTING HOT WATER PUMP TO BE RE-FED FROM NEW DISTRIBUTION PANEL. INTERCEPT EXISTING ELECTRICAL CONDUIT AND WIRING FEEDING THE PUMP VFD NEAR LOCATION OF FORMER MOTOR CONTROL CENTER REMOVED BY DEMOLITION AND REWORK AND EXTEND THE CONDUIT TO CONNECT TO NEW PANEL. REWORK FEEDER WIRING TO CONNECT TO BREAKER IN NEW PANEL PER ELECTRICAL RISER DIAGRAM AND PANEL SCHEDULE.
11. EXISTING FIRST FLOOR LECTURE ROOM EXHAUST FAN TO BE RE-FED FROM NEW DISTRIBUTION PANEL. INTERCEPT EXISTING FAN FEEDER CONDUIT AND WIRING NEAR LOCATION OF FORMER MOTOR CONTROL CENTER REMOVED BY DEMOLITION. REWORK AND EXTEND THE CONDUIT TO CONNECT TO NEW COMBINATION STARTER DISCONNECT MOUNTED ON ROOM WALL NEXT TO NEW DISTRIBUTION PANEL. PROVIDE NEW WIRING AND CONDUIT FROM PANEL TO STARTER. REWORK MOTOR FEEDER CONDUIT AND WIRING TO CONNECT NEW WALL MOUNTED STARTER DISCONNECT PER ELECTRICAL RISER DIAGRAM. PROVIDE NEW WIRING AND CONDUIT TO CONNECT STARTER TO BREAKER IN NEW PANEL PER ELECTRICAL RISER DIAGRAM AND PANEL SCHEDULE. MOUNT STARTER ON WALL NEXT TO NEW DISTRIBUTION PANEL.
12. PROVIDE 120V POWER CONNECTION TO NEW BUILDING CONTROL PANEL. REWORK EXISTING BAS CONTROL PANEL 120V CIRCUIT MADE AVAILABLE BY DEMOLITION OF THE EXISTING AHU CONTROL PANEL AND REWORK AND EXTEND THE CIRCUIT TO THE NEW CONTROL PANEL LOCATION. FIELD VERIFY EXISTING PANEL AND CIRCUIT FEEDING EACH PANEL. DOCUMENT CIRCUIT ON PANEL AND IF NOT INDICATED ON PANEL SCHEDULE PROVIDE UPDATED TYPE WRITTEN PANEL DIRECTORY(S) INDICATING THE PANEL LOAD.
13. NEW LOCATION FOR EXISTING FIRE ALARM NOTIFICATION DEVICE. COORDINATE NEW MOUNTING LOCATION WITH NEW RETURN FAN EQUIPMENT. PROVIDE ALL HARDWARE TO MOUNT AV DEVICE. REWORK FIRE ALARM NOTIFICATION CIRCUITS TO NEW DEVICE LOCATION AND RECONNECT TO AV STROBE UNIT.
14. PROVIDE A NEW DUCT MOUNTED SMOKE DETECTORS FOR AHU 201 AND AHU 202 IN DUCTWORK AND REMOTE TEST SWITCH WITH INDICATOR LIGHT FOR EACH DUCT DETECTOR. THE SUPPLY DUCT SMOKE DETECTOR TO CONTROL THE SUPPLY FAN(S). DUCT SMOKE DETECTOR IS TO BE MOUNTED AND INSTALLED IN DUCTWORK BY MECHANICAL CONTRACTOR. CONNECT EACH DUCT DETECTOR TO THE LIBRARY BUILDING FIRE ALARM SYSTEM. COORDINATE MOUNTING LOCATION FOR REMOTE TEST SWITCH LIBRARY REPRESENTATIVES PRIOR TO ROUGH-IN. REWORK EXISTING FIRE ALARM SMOKE DETECTOR WIRING TO NEW DETECTOR LOCATION AND CONNECT TO NEW DETECTOR. PROVIDE ANY ADDITIONAL WIRING AND CONDUIT REQUIRED TO COMPLETE THE INSTALLATION. COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR AND SKOKIE PUBLIC LIBRARY FACILITIES PRIOR TO ROUGH-IN. MECHANICAL CONTRACTOR IS TO INSTALL SMOKE DETECTOR IN DUCTWORK. PROVIDE ALL PROGRAMMING AND TESTING TO COMPLETE INSTALLATION AND INTEGRATE INTO LIBRARY FIRE ALARM SYSTEM.
15. PROVIDE A NEW DUCT MOUNTED SMOKE DETECTORS FOR RF-1 AND RF-2 IN DUCTWORK AND REMOTE TEST SWITCH WITH INDICATOR LIGHT FOR EACH DUCT DETECTOR. THE RETURN DUCT SMOKE DETECTOR TO CONTROL THE RETURN FAN(S). DUCT SMOKE DETECTOR IS TO BE MOUNTED AND INSTALLED IN DUCTWORK BY MECHANICAL CONTRACTOR. CONNECT EACH DUCT DETECTOR TO THE LIBRARY BUILDING FIRE ALARM SYSTEM. COORDINATE MOUNTING LOCATION FOR REMOTE TEST SWITCH LIBRARY REPRESENTATIVES PRIOR TO ROUGH-IN. REWORK EXISTING FIRE ALARM SMOKE DETECTOR WIRING TO NEW DETECTOR LOCATION AND CONNECT TO NEW DETECTOR. PROVIDE ANY ADDITIONAL WIRING AND CONDUIT REQUIRED TO COMPLETE THE INSTALLATION. COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR AND SKOKIE PUBLIC LIBRARY FACILITIES PRIOR TO ROUGH-IN. MECHANICAL CONTRACTOR IS TO INSTALL SMOKE DETECTOR IN DUCTWORK. PROVIDE ALL PROGRAMMING AND TESTING TO COMPLETE INSTALLATION AND INTEGRATE INTO LIBRARY FIRE ALARM SYSTEM. PROVIDE NEW DUCT MOUNTED SMOKE DETECTOR AND REMOTE TEST SWITCH CONNECT TO BUILDING FIRE ALARM SYSTEM.
16. PROVIDE NEW FAN SHUTDOWN RELAYS FOR SUPPLY FAN ARRAYS IN NEW AHU-201 AND AHU-202 AND RETURN FAN ARRAYS IN RF-1 AND RF-2. PROVIDE A SHUTDOWN RELAY FOR EACH MOTOR CONTROLLER. THE SUPPLY OR RETURN DUCT DETECTOR TO BE LINKED TO THE CORRESPONDING SHUT DOWN RELAY SUCH THAT IS SMOKE IS DETECTED THE FIRE ALARM WILL CONTROL THE RELAY TO SHUT DOWN THE CORRESPONDING FAN. MOUNT ADDRESSABLE RELAY(S) AT MOTOR CONTROL CABINET. ATTEMPT TO KEEP THE NEW SHUTDOWN WIRE LENGTH BETWEEN THE SHUTDOWN RELAY AND THE VFD SHUT DOWN CONTACTS TO 3 FEET OR LESS. EXTEND THE EXISTING FIRE ALARM SYSTEM CIRCUITS TO THE NEW RELAY LOCATIONS AND PROVIDE ANY ADDITIONAL WIRING AND CONDUIT REQUIRED TO COMPLETE THE INSTALLATION. PROVIDE ALL PROGRAMMING AND TESTING TO COMPLETE INSTALLATION AND INTEGRATE INTO LIBRARY BUILDING FIRE ALARM SYSTEM.
17. EXISTING EMERGENCY LIGHTING FIXTURE TO REMAIN IN PLACE. REINSTALL EXISTING EMERGENCY FIXTURE IS THE FIXTURE WAS RELOCATED DUE TO THE TEMPORARY HVAC DUCT WORK.
18. PROVIDE A STRUT SUPPORT FROM GROUND FOR NEW CONTROL PANEL IF REQUIRED AND COORDINATE FINAL MOUNTING LOCATION AND REQUIREMENTS WITH CONTROL CONTRACTOR FOR CONTROL PANEL BEING PROVIDED.
19. PROVIDE NEW 480V 3-PHASE 60A WELDING RECEPTACLE PER THE EQUIPMENT CONNECTION SCHEDULE. CONNECT RECEPTACLE TO NEW 60A 3-POLE BREAKER IN NEW PANEL REPLACING MOTOR CONTROL CENTER. LOCATION SHOWN IS DIAGRAMMATIC, COORDINATE FINAL RECEPTACLE LOCATION FIELD CONDITIONS AND WITH LIBRARY REPRESENTATIVES PRIOR TO ROUGH-IN.
20. REWORK EXISTING FAN CONTROL/ INTERLOCK WIRING FOR FIRST FLOOR LECTURE ROOM EXHAUST FAN TO RECONNECT THE CONTROL CIRCUIT TO THE NEW STARTER FOR THE LECTURE ROOM EXHAUST FAN THAT IS REPLACING THE EXISTING STARTER IN THE MCC REMOVED BY DEMOLITION.



1 PARTIAL ELECTRICAL SECOND FLOOR PLAN - NEW WORK
SCALE: 1/4" = 1'-0"

0 2' 4' 8'
0 2'
1/4" = 1'-0"

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CONSULTANTS

SEAL

ELECTRICAL SECOND FLOOR PLAN - NEW WORK

2ND FLOOR AHU REPLACEMENT
Skokie Public Library
5215 Oakton St.
Skokie, IL 60077

ISSUES & REVISIONS

NO.	DESCRIPTION	DATE
1	50% OWNER REVIEW	2.11.26
2	100% OWNER REVIEW	3.04.26
3	ISSUED FOR BID	3.11.26

KEYPLAN

N

SCALE
As indicated

DRAWN	CHECKED	APPROVED
JDS	SDG	APM

PROJECT NO.
P25-1226-00

E102

1

PANEL: 2NHD2 (WAS MCC-2A)

NEW OR EXISTING:	NEW					VOLTAGE/PHASE :	480V, 3Ø, 3W						NEUTRAL BUS:	N/A			
LOCATION :	2ND FLOOR MECH ROOM					BUS AMPS :	400A						GROUND BUS:	YES- BOLTED			
MOUNTING :	SURFACE					MAIN BREAKER :	400A						ISO. GRND. BUS:	NONE			
ENCLOSURE:	NEMA 1					FED FROM :	MSB-2						FULLY RATED AIC:	65,000			

LOAD DESCRIPTION	LOAD TYPE	NOTE	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	CKT	BKR/ POLE	A B C	BKR/ POLE	CKT	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	NOTE	LOAD TYPE	LOAD DESCRIPTION
	M	1	16,073			1		*--		2	16,073			1	M	
AHU-201 SUPPLY FAN ARRAY	M	1		16,073		3	80/3	-*-	80/3	4		16,073		1	M	AHU-202 (SUPPLY FAN ARRAY)
	M	1			16,073	5		--*		6			16,073	1	M	
	M	1	11,639			7		*--		8	11,639			1	M	
RF-1 RETURN FAN ARRAY	M	1		11,639		9	60/3	-*-	60/3	10		11,639		1	M	RF-2 (RETURN FAN ARRAY)
	M	1			11,639	11		--*		12			11,639	1	M	
	E	1	0			13		*--		14	942			1	M	
EMS PHASE MONITOR	E	1		0		15	15/3	-*-	15/3	16		942		1	M	SHWP-2
	E	1			0	17		--*		18			942	1	M	
	M	1	3,879			19		*--		20	942			1	M	
HOUSE WATER PUMP	M	1		3,879		21	40/3	-*-	15/3	22		942		1	M	SHWP-2A
	M	1			3,879	23		--*		24			942	1	M	
	M	1	443			25		*--		26	0			1	S	
FIRST FLOOR LECTURE ROOM FAN	M	1		443		27	15/3	-*-	15/3	28		0		1	S	SPARE
	M	1			443	29		--*		30			0	1	S	
	R	1	13,302			31		*--		32	0				S	
WELDING RECPTACLE	R	1		13,302		33	60/3	-*-		34		0			S	100A SPACE
	R	1			13,302	35		--*		36			0		S	
	S		0			37		*--		38	0				S	
200A SPACE	S			0		39		-*-		40		0			S	200A SPACE
	S				0	41		--*		42			0		S	

BREAKER NOTES	CONNECTED PHASE LOADS		LOAD TYPES	CONNECTED	DEMAND
1) THERMAL MAGNETIC	TOTAL ØA =	74,932 VA	LIGHTING (L) =	0	0
2) SHUNT TRIP	TOTAL ØB =	74,932 VA	RECEPTACLES (R) =	39,906	24,953
3) LOCK-OUT DEVICE	TOTAL ØC =	74,932 VA	MOTORS (M) =	184,890	147,912
4) GFIC			ELECTRIC HEATING (H) =	0	0
5) AFCI			EQUIPMENT (E) =	0	0
6) HACR			PANELS (P) =	0	0
7) EXISTING BREAKER			TOTAL VA =	224,796	172,865
			TOTAL AMPS =	270.8	208.3

KEYED NOTES

1. BOXED AREA ON RISER DIAGRAM INDICATES THE PROJECT SCOPE OF WORK ON THE DRAWING.

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CONSULTANTS

SEAL

ELECTRICAL PANEL SCHEDULES

2ND FLOOR AHU REPLACEMENT
Skokie Public Library
5215 Oakton St.
Skokie, IL 60077

ISSUES & REVISIONS

NO.	DESCRIPTION	DATE
1	50% OWNER REVIEW	2.11.26
2	100% OWNER REVIEW	3.04.26
3	ISSUED FOR BID	3.11.26

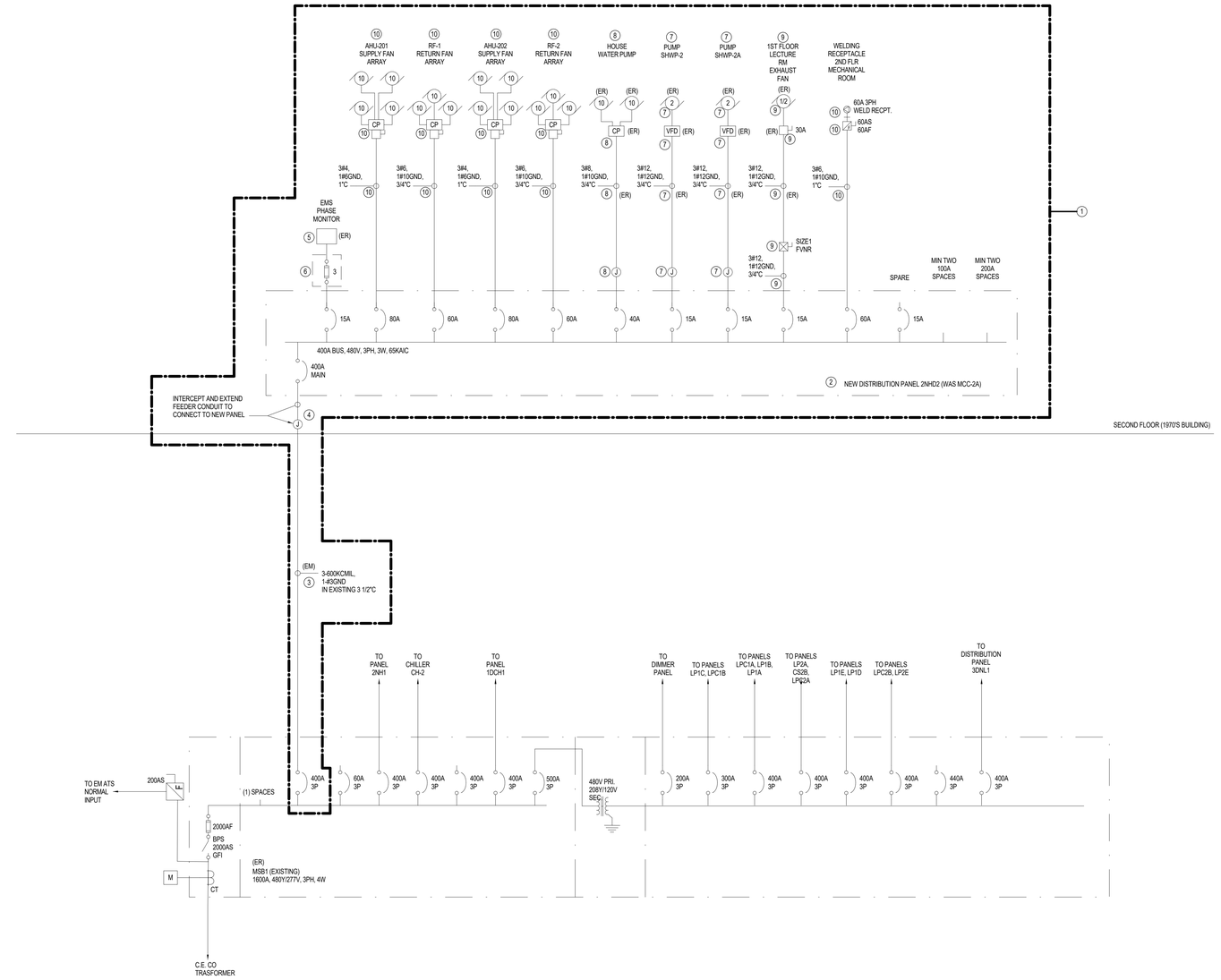
KEYPLAN

SCALE
1/8" = 1'-0"

DRAWN	CHECKED	APPROVED
JDS	SDG	APM

PROJECT NO.
P25-1226-00

E400



1 ELECTRICAL RISER DIAGRAM - NEW WORK
SCALE: NO SCALE

ELECTRICAL GENERAL CONSTRUCTION NOTES

A. SEE DRAWING E000 FOR SYMBOLS AND ABBREVIATIONS.

B. SEE DRAWING E001 FOR ELECTRICAL GENERAL NOTES.

C. SEE DRAWING E002 FOR ELECTRICAL SPECIFICATIONS.

D. SEE EQUIPMENT SCHEDULE ON DRAWING SHEETS E003 FOR ADDITIONAL INFORMATION AND FOR WIRING AND OVERCURRENT PROTECTION INFORMATION.

E. CONTRACTOR TO NOTE THAT THE BUILDING IS TO REMAIN IN OPERATION DURING CONSTRUCTION. DEMOLITION SHALL BE COORDINATED WITH NEW EQUIPMENT INSTALLATION AND PROJECT PHASING TO REDUCE OR ELIMINATE BUILDING POWER OUTAGES. ANTICIPATED POWER OUTAGE TO BE COORDINATE WITH HOSPITAL REPRESENTATIVES NO LESS THAN 10 WORKING DAYS PRIOR TO REQUESTED SHUT DOWN DATE.

F. CONDUCTOR SIZES BASED ON COPPER THHN/THWN IN METALLIC RACEWAY. 60 DEG.C CONDUCTOR RATING USED FOR AMPERAGES LESS THAN 100. 75 DEG.C USED FOR AMPERAGES GREATER THAN 100.

G. VERIFY EQUIPMENT LOCATIONS AND CONDUCTOR LENGTHS PRIOR TO INSTALLATION. CONSULT ENGINEER IF INCREASED CONDUCTOR LENGTHS RESULT IN UNACCEPTABLE VOLTAGE DROP.

H. PROVIDE 4" CONCRETE HOUSEKEEPING PAD FOR FLOOR MOUNTED EQUIPMENT.

I. SEE PANEL SCHEDULES FOR PANEL INTERNAL COMPONENTS, RATINGS, AND BRANCH LOAD INFORMATION.

J. USE 2020 NEC TABLE 250.66 FOR TRANSFORMER BONDING JUMPER SIZE.

CONSTRUCTION KEYED NOTES

1. BOXED AREA ON RISER DIAGRAM INDICATES THE PROJECT SCOPE OF WORK ON THE DRAWING.
2. PROVIDE NEW DISTRIBUTION PANEL TO REPLACE EXISTING MOTOR CONTROL CENTER MCC-2A. PROVIDE DISTRIBUTION PANEL PER THE RISER DIAGRAM, ELECTRICAL PANEL SCHEDULE, ELECTRICAL SPECIFICATIONS, AND ANY SKOKIE LIBRARY ELECTRICAL STANDARDS.
3. 480V 3 PHASE ELECTRICAL CONNECTION FOR NEW DISTRIBUTION PANEL IN EXISTING REWORKED CONDUIT. PROVIDE NEW FEEDER WIRING INSTALLED IN REWORKED EXISTING 3 1/2" CONDUIT MADE AVAILABLE BY DEMOLITION OF THE EXISTING MCC FEEDER.
4. REWORK AND EXTEND EXISTING 3 1/2" FEEDER CONDUIT TO ALLOW FOR CONNECTION TO THE NEW DISTRIBUTION PANEL.
5. REWORK EXISTING EMS PHASE MONITOR TO ALLOW FOR IT TO BE CONNECTED TO NEW DISTRIBUTION PANEL. PROVIDE ALL CONDUIT AND WIRING REQUIRED TO CONNECT TO NEW BREAKER IN NEW DISTRIBUTION PANEL.
6. PROVIDE NEW PANEL/ ENCLOSURE FOR FUSE BLOCK AND FUSING FOR FEED TO EMS PHASE MONITOR. COORDINATE FUSE INSTALLATION ON FEED TO PHASE MONITOR.
7. EXISTING HOT WATER PUMP TO REMAINING IN PLACE. INTERCEPT EXISTING FEEDER CONDUIT AND REWORK AND EXTEND FEEDER TO CONNECT TO NEW DISTRIBUTION PANEL. CONNECT FEEDER WIRING TO SOURCE BREAKER IN NEW PANEL.
8. EXISTING HOUSE WATER PUMP SKID REMAINING IN PLACE. INTERCEPT EXISTING FEEDER CONDUIT AND REWORK AND EXTEND FEEDER TO CONNECT TO NEW DISTRIBUTION PANEL. CONNECT FEEDER WIRING TO SOURCE BREAKER IN NEW PANEL.
9. EXISTING LECTURE ROOM EXHAUST FAN REMAINING IN PLACE. PROVIDE NEW SIZE 1 STARTER DISCONNECT PER ELECTRICAL SPECIFICATIONS TO REPLACE STARTER THAT WAS IN THE MCC. INTERCEPT EXISTING FEEDER CONDUIT AND REWORK AND EXTEND FEEDER TO CONNECT TO NEW STARTER DISCONNECT. PROVIDE NEW WIRING AND CONDUIT TO CONNECT STARTER TO SOURCE BREAKER IN NEW DISTRIBUTION PANEL. COORDINATE WITH CONTROLS CONTRACTOR TO REWORK AND RECONNECT INTERLOCK/ CONTROL WIRING TO NEW FAN STARTER FOR FAN OPERATION.
10. PROVIDE ELECTRICAL CONNECTION TO NEW HVAC EQUIPMENT PER THE ELECTRICAL CONNECTION SCHEDULE .
11. PROVIDE NEW WELDING RECEPTACLE PER EQUIPMENT CONNECTION SCHEDULE.

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CONSULTANTS

SEAL

ELECTRICAL RISER DIGRAM - NEW WORK

2ND FLOOR AHU REPLACEMENT
Skokie Public Library
5215 Oakton St.
Skokie, IL 60077

ISSUES & REVISIONS

NO.	DESCRIPTION	DATE
1	50% OWNER REVIEW	2.11.26
2	100% OWNER REVIEW	3.04.26
3	ISSUED FOR BID	3.11.26

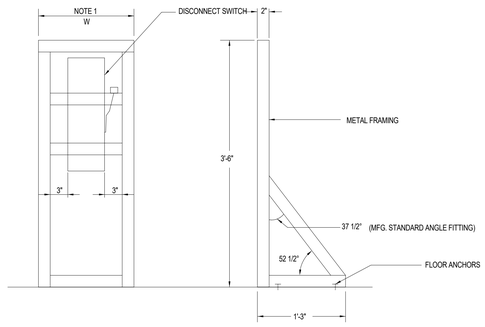
KEYPLAN

SCALE
As indicated

DRAWN	CHECKED	APPROVED
JDS	SDG	APM

PROJECT NO.
P25-1226-00

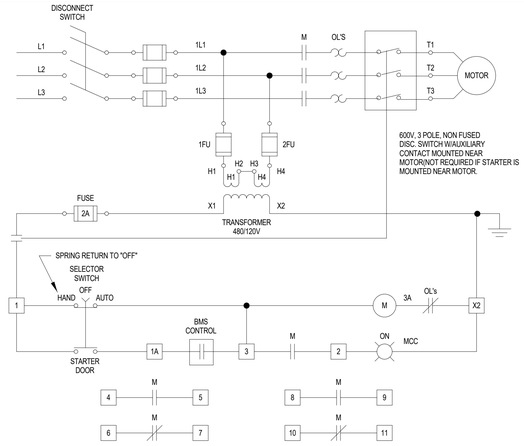
E500



TYPICAL FOR DISCONNECT SWITCH WHERE WALL MOUNTING IS NOT POSSIBLE

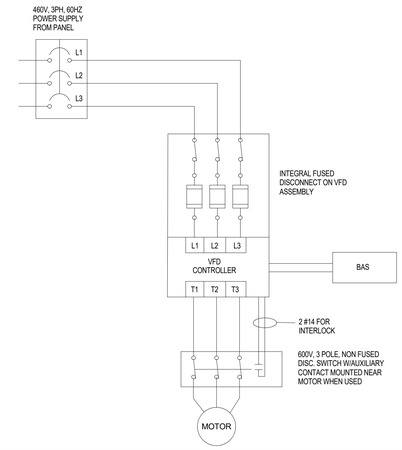
1 FLOOR MOUNTED DISCONNECT SWITCH

NO SCALE



2 TYPICAL MOTOR STARTER SCHEMATIC

NO SCALE

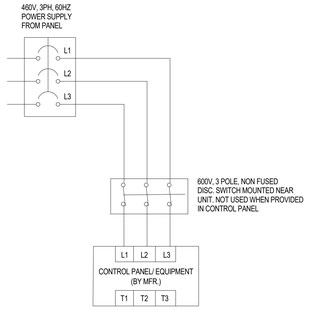


3 TYPICAL MOTOR VARIABLE FREQUENCY DRIVE SCHEMATIC - WITH LOCAL DISCONNECT

NO SCALE

4 TYPICAL VARIABLE FREQUENCY DRIVE SCHEMATIC - NO LOCAL DISCONNECT

NO SCALE



5 TYPICAL EQUIPMENT CONNECTION - 3 PHASE

NO SCALE

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ELECTRICAL DETAILS

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KEYPLAN

SCALE
NO SCALE

DRAWN	CHECKED	APPROVED
JDS	SDG	APM

PROJECT NO.
P25-1226-00

E600