

Parkview State School Replace Rooftop Units Cape Girardeau, Missouri



OWNER: STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

DESIGNER: Bernhard TME

PROJECT NUMBER: E1904-01

PROJECT
MANAGEMENT: OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT,
DESIGN AND CONSTRUCTION

SITE NUMBER: 2029
FACILITY NUMBER: 5012029003

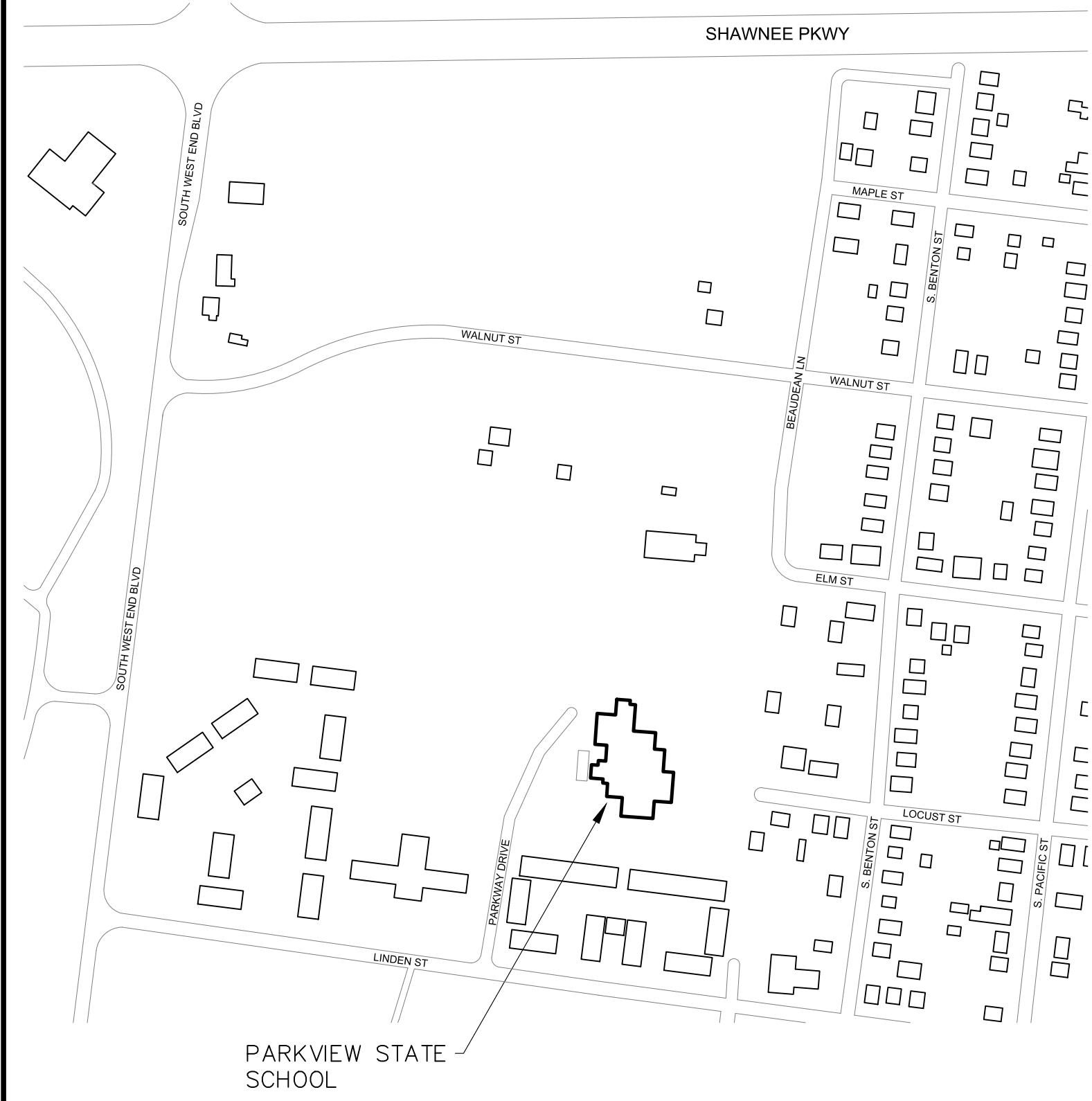
G-001

1 OF 15 SHEETS
08/19/2022

CITY LOCATION PLAN



BUILDING LOCATION PLAN

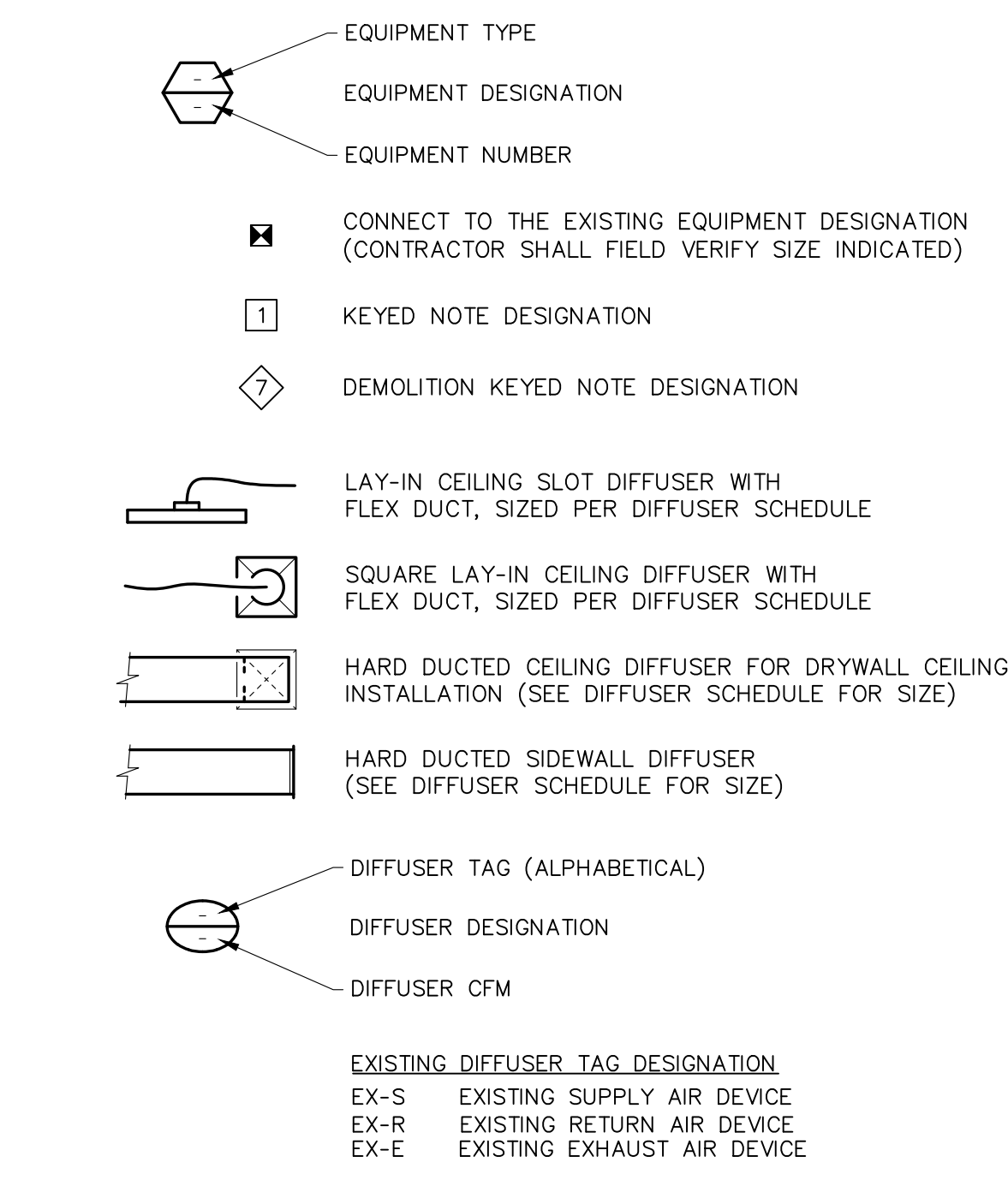
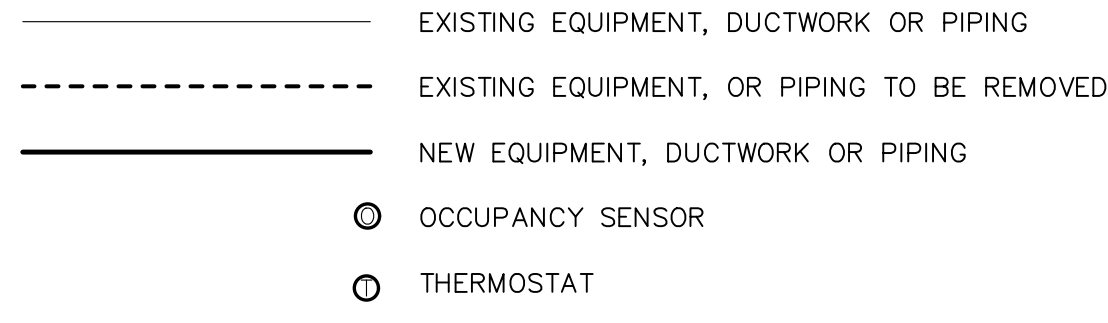
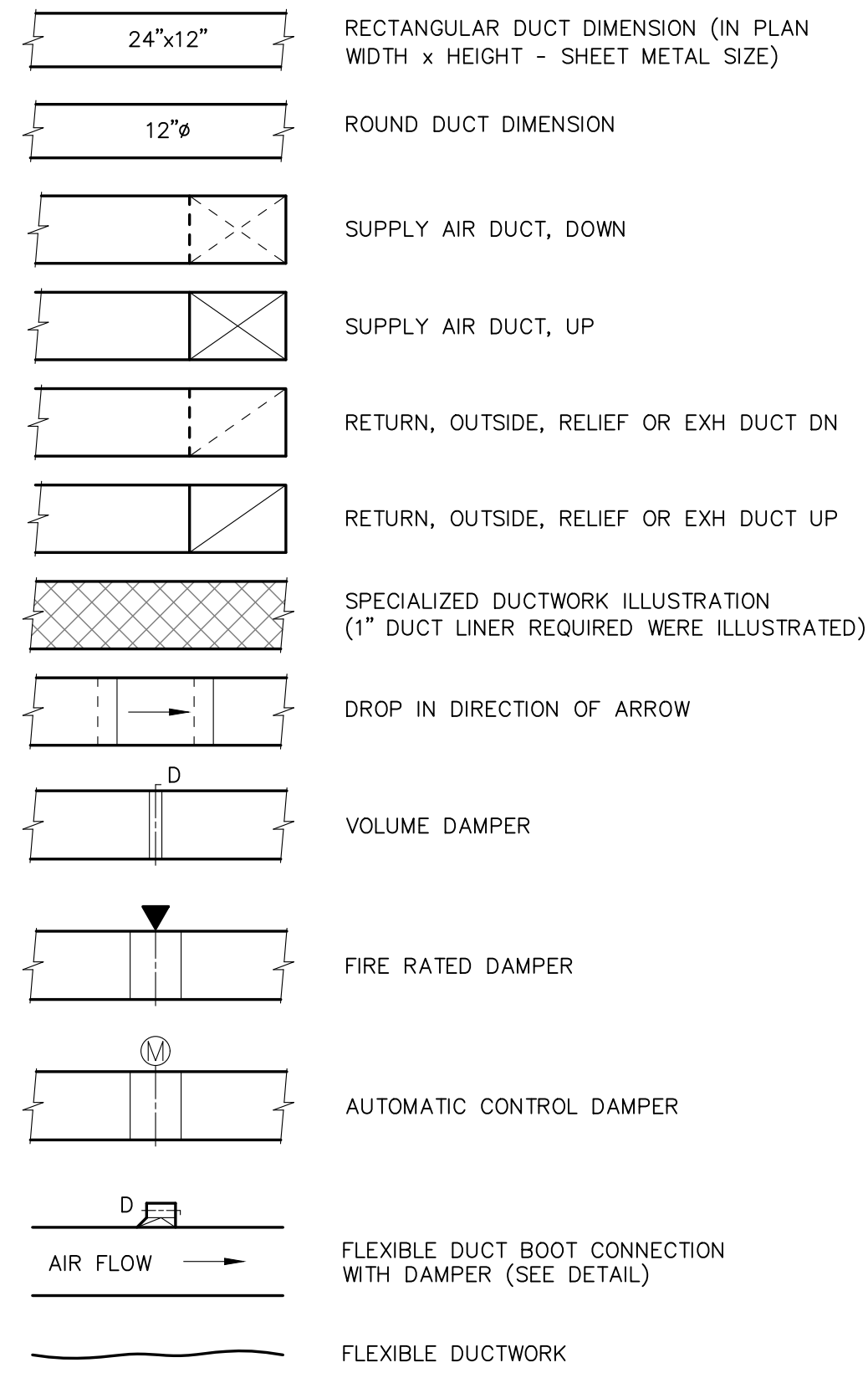


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MECHANICAL SYMBOLS AND ABBREVIATIONS

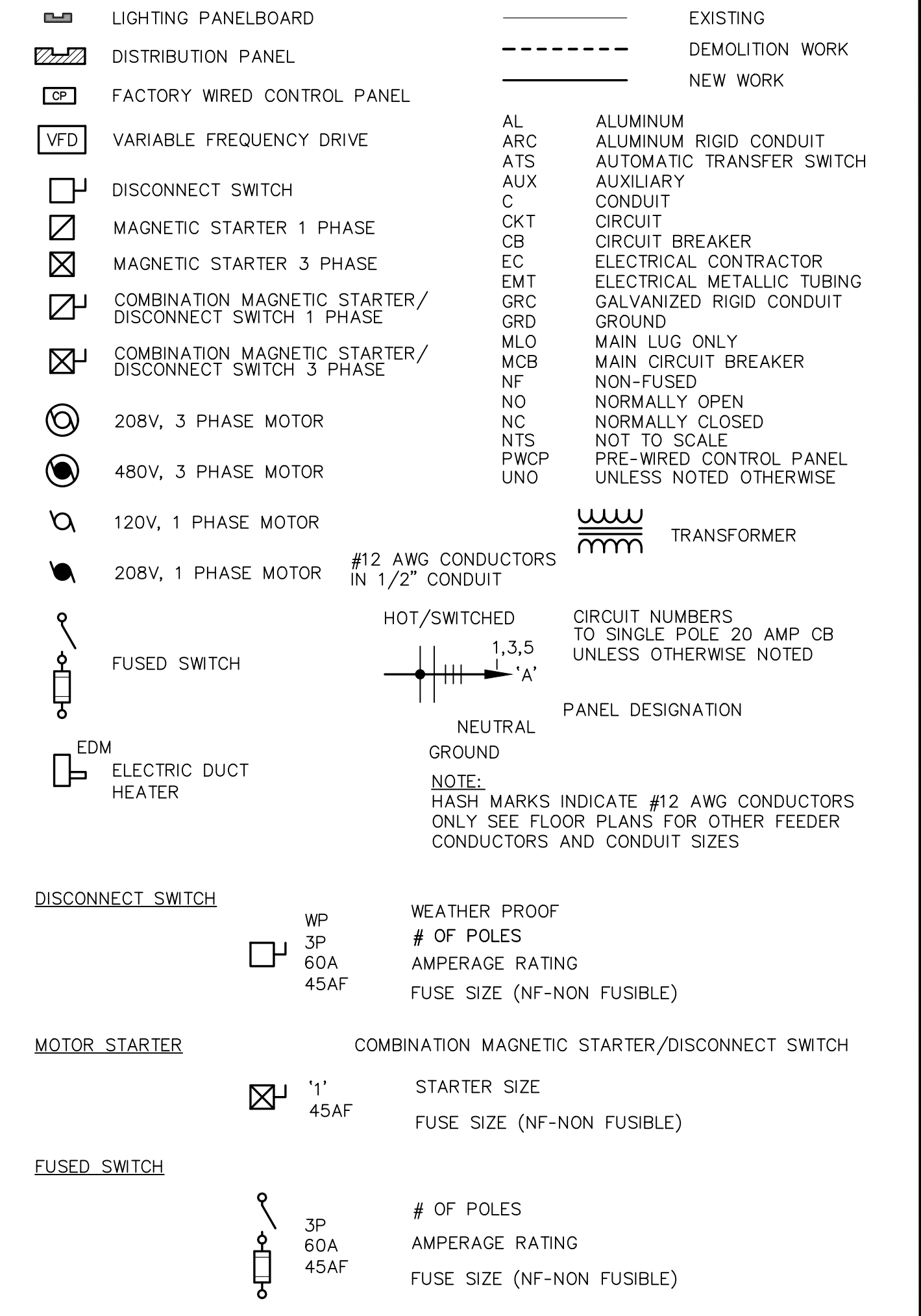
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
BOT	BOTTOM
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
D	DAMPER
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROLS
DG	DOOR GRILLE
DIA	DIAMETER
DWG	DRAWING
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EG	EXHAUST FAN
ELEC	ELECTRIC
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
F	DEGREE FAHRENHEIT
FC	FLEXIBLE CONNECTION
FLR	FLOOR
FRD	FIRE RATED DAMPER
HP	HORSE POWER
HTG	HEATING
HVAC	HEATING VENTILATION & AIR CONDITIONING
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MC	MECHANICAL CONTRACTOR
MECH	MECHANICAL
MIN	MINIMUM
MXA	MIXED AIR
NTS	NOT TO SCALE
OA	OUTSIDE AIR
QTY	QUANTITY
RA	RETURN AIR
REQ'D	REQUIRED
RF	RETURN FAN
RLA	RELIEF AIR
RLF	RELIEF FAN
RM	ROOM
RTU	ROOF TOP UNIT
SA	SUPPLY AIR
SD	SMOKE DAMPER
SF	SUPPLY FAN
SP	STATIC PRESSURE
SPEC	SPECIFICATIONS
T	THERMOSTAT
VFD	VARIABLE FREQUENCY DRIVE
VERT	VERTICAL
VOL	VOLUME
w/	WITH
w/o	WITHOUT
WB	WET BULB
WP	WEATHERPROOF



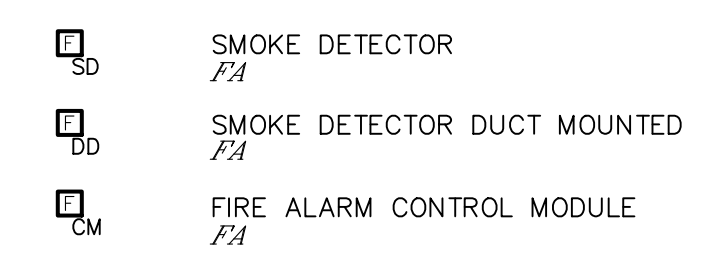
GENERAL DEMOLITION AND NEW WORK NOTES:

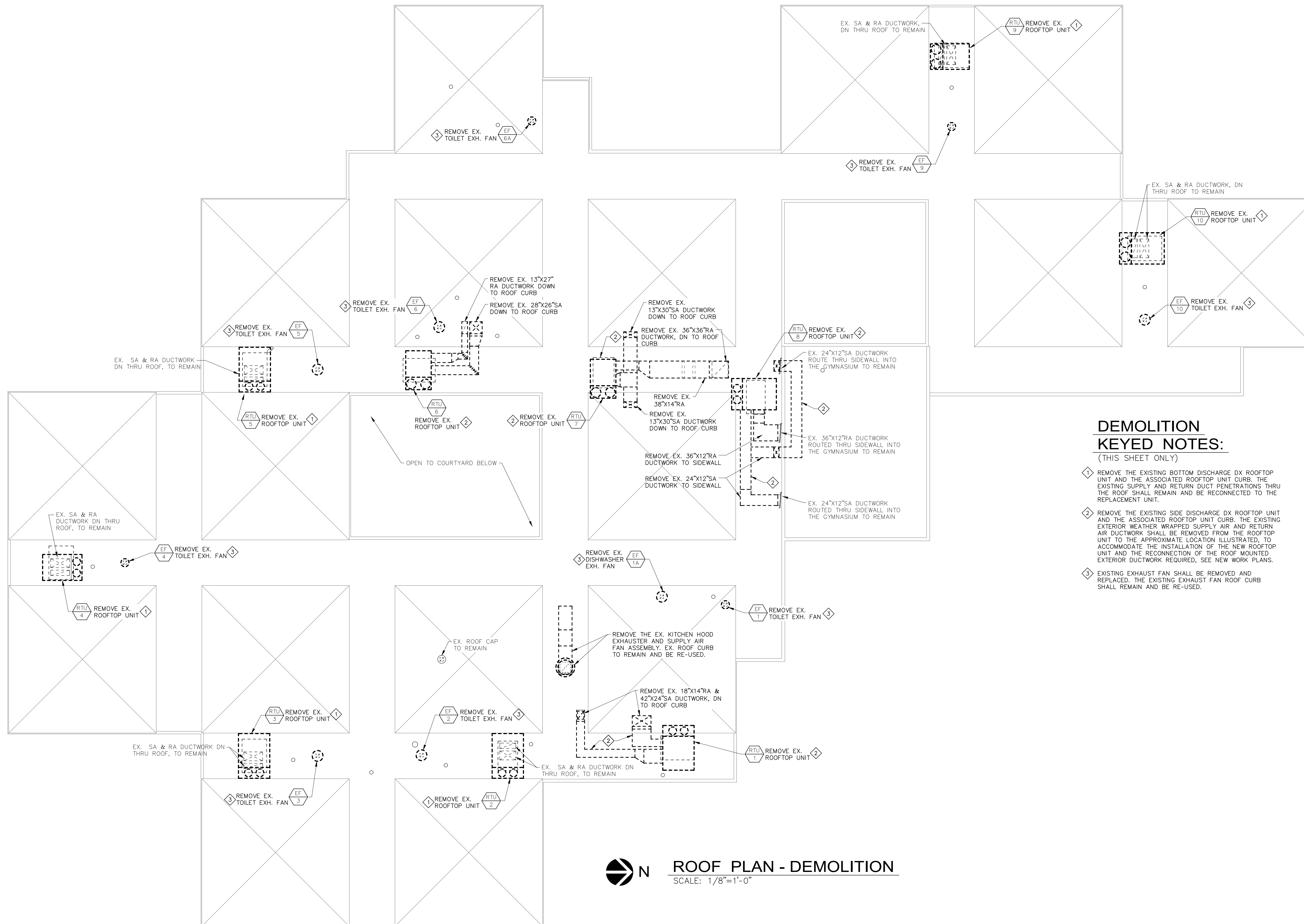
- GENERAL DEMOLITION AND NEW WORK NOTES:
- INSTALL STAINLESS STEEL COVER PLATE OVER HOLES LEFT BY DEMOLISHED THERMOSTATS. REMOVE EXISTING WIRING.
 - EQUIPMENT SHALL BE INSTALLED, AND ADEQUATE CLEARANCES FOR MAINTENANCE AND REPLACEMENT SHALL BE PROVIDED, IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS.
 - CONTRACTOR SHALL PROTECT ALL EXISTING FLOOR, WALL, ROOF, AND CEILING SURFACES IN AREAS OF WORK AND EQUIPMENT AND PERSONNEL ACCESS. CONTRACTOR SHALL PROVIDE PLASTIC FLOOR PROTECTION FILM FOR FINISHED FLOOR IN AREAS OF WORK AND ACCESS INCLUDING CORRIDORS AND TOILETS. ROOF HAS AN EXISTING WARRANTY, CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE WARRANTY INCLUDING CONTACTING AND APPROVAL BY ORIGINAL MANUFACTURER PRIOR TO STARTING WORK. CONTRACTOR SHALL PROTECT TPO ROOFING WITH TEMPORARY WALKWAYS, PLYWOOD SHEATHING, MONITORING AND CLEANING CONSTRUCTION DEBRIS, AND OTHER METHODS AS REQUIRED BY THE ROOF WARRANTY. CONTRACTOR SHALL REPAIR OR REPLACE DAMAGED FLOOR, WALL, ROOF, AND CEILING SURFACES AND BUILDING COMPONENTS.
 - PROVIDE THERMOSTAT FOR EACH CONTROL ZONE. AT LOCATIONS WHERE EXISTING THERMOSTAT LOCATION MATCHES NEW LOCATION, CONTRACTOR SHALL REUSE EXISTING BOX AND WIREWAY. IF NEW THERMOSTAT DOES NOT FULLY COVER EXISTING HOLE THEN PROVIDE OVERSIZE WALL BACK PLATE AT LOCATIONS WHERE NEW THERMOSTATS ARE PROVIDED. FIELD VERIFY PROPOSED LOCATION. IF AN ALTERNATE LOCATION IS PREFERRED CONTACT OWNER'S REPRESENTATIVE FOR APPROVAL. WIRE-MOLD SHALL NOT BE USED FOR NEW THERMOSTATS. WIRING SHALL BE CONCEALED.

ELECTRICAL SYMBOLS AND ABBREVIATIONS



FIRE ALARM SYMBOLS



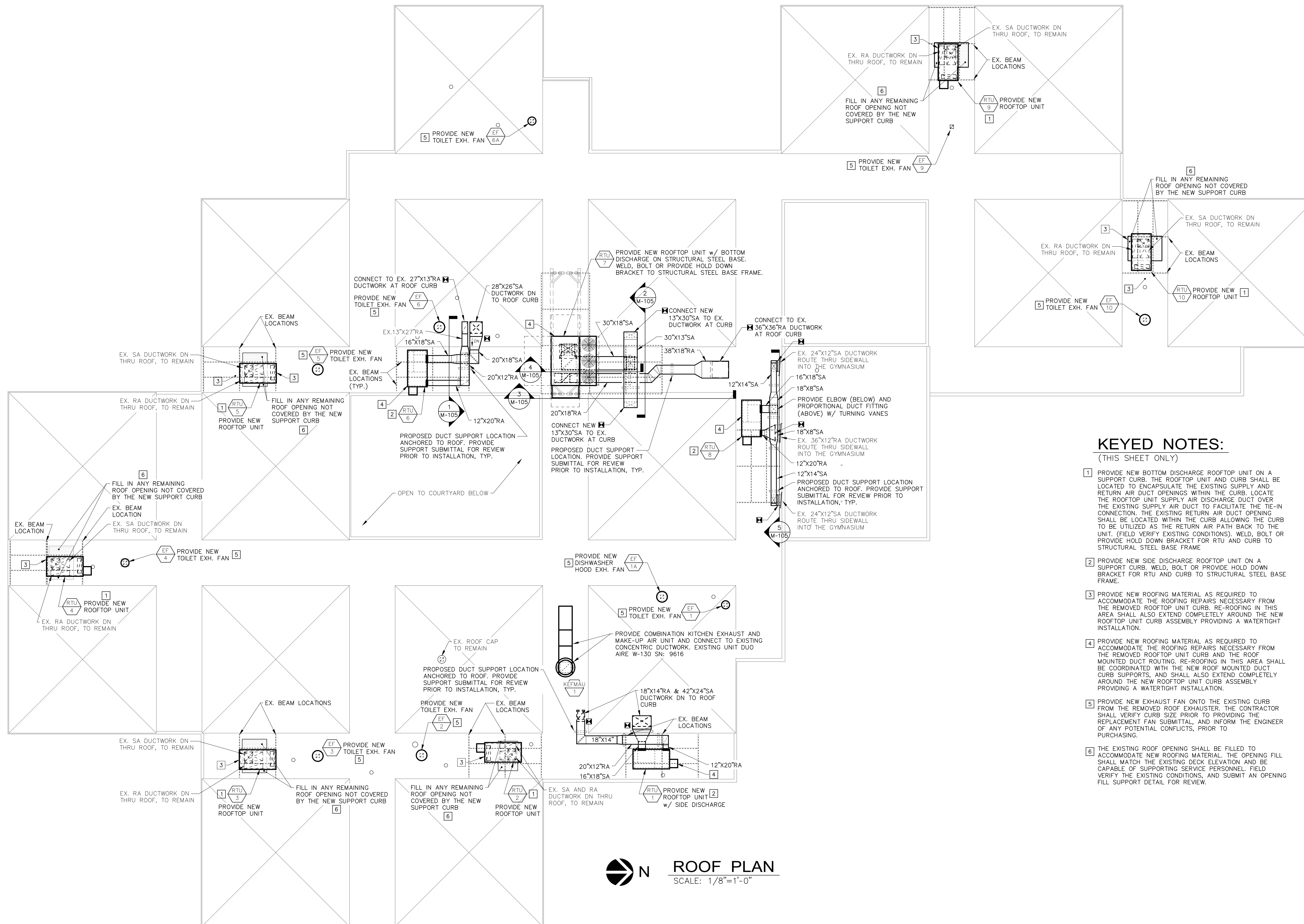


**DEMOLITION
KEYED NOTES:**
(THIS SHEET ONLY)

- 1 REMOVE THE EXISTING BOTTOM DISCHARGE DX ROOFTOP UNIT AND THE ASSOCIATED ROOFTOP UNIT CURB. THE EXISTING SUPPLY AND RETURN DUCT PENETRATIONS THRU THE ROOF SHALL REMAIN AND BE RECONNECTED TO THE REPLACEMENT UNIT.
- 2 REMOVE THE EXISTING SIDE DISCHARGE DX ROOFTOP UNIT AND THE ASSOCIATED ROOFTOP UNIT CURB. THE EXISTING EXTERIOR WEATHER WRAPPED SUPPLY AIR AND RETURN AIR DUCTWORK SHALL BE REMOVED FROM THE ROOFTOP UNIT TO THE APPROXIMATE LOCATION ILLUSTRATED, TO ACCOMMODATE THE INSTALLATION OF THE NEW ROOFTOP UNIT AND THE RECONNECTION OF THE ROOF MOUNTED EXTERIOR DUCTWORK REQUIRED, SEE NEW WORK PLANS.
- 3 EXISTING EXHAUST FAN SHALL BE REMOVED AND REPLACED. THE EXISTING EXHAUST FAN ROOF CURB SHALL REMAIN AND BE RE-USED.



ROOF PLAN - DEMOLITION
SCALE: 1/8"=1'-0"

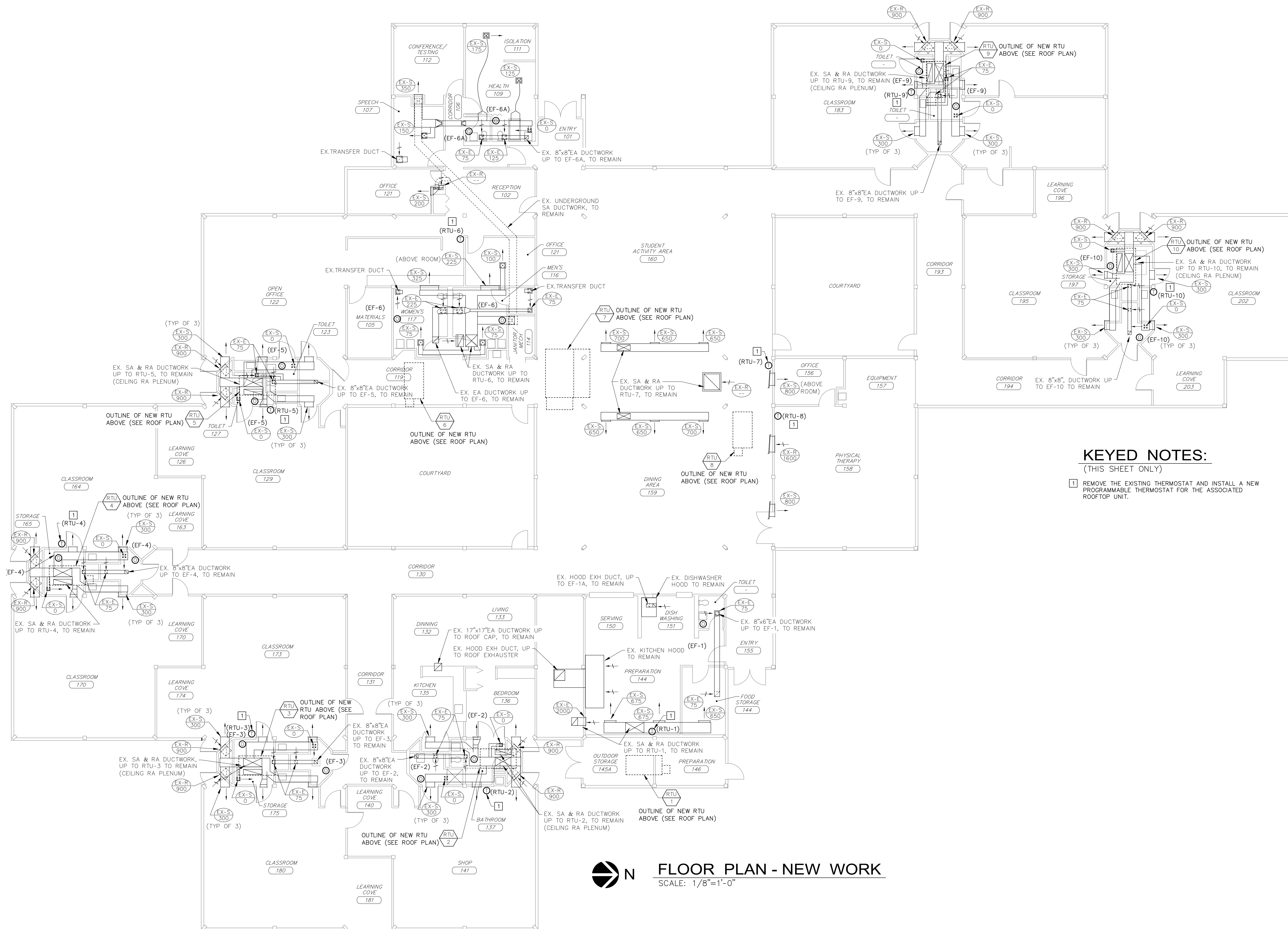




DREW FLANAKIN - PROFESSIONAL ENGINEER
MO# PE-2016017619



622 Emerson Road, Suite 250
St. Louis, MO 63141 • 314-727-8760
MO Certificate of Authority No. 2009021478



KEYED NOTES:
(THIS SHEET ONLY)

- 1 REMOVE THE EXISTING THERMOSTAT AND INSTALL A NEW PROGRAMMABLE THERMOSTAT FOR THE ASSOCIATED ROOFTOP UNIT.



FLOOR PLAN - NEW WORK
SCALE: 1/8"=1'-0"

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MANAGEMENT,
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DEPARTMENT OF
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SECONDARY EDUCATION
PARKVIEW STATE SCHOOL
REPLACE ROOFTOP UNITS

PARKVIEW STATE SCHOOL
1020 S. PARKWAY STREET
CAPE GIRARDEAU, MO 63703

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ISSUE DATE:	08/19/2022

E1904-01-2411-
CAD DWG FILE: 30011-M-103.dwg
DRAWN BY: LRH
CHECKED BY: DEF
DESIGNED BY: DEF

SHEET TITLE:
**FLOOR PLAN
NEW WORK**

SHEET NUMBER:

M-103

5 OF 15 SHEETS
08/19/2022

GENERAL NOTES

THIS SHEET ONLY

1. MANUFACTURER AND MODEL NUMBER LISTED IS THE BASIS OF DESIGN. PROVIDE THE PRODUCT INDICATED OR COMPARABLE PRODUCT BY ONE OF THE LISTED MANUFACTURERS IN THE SPECIFICATIONS.

HEAT PUMP ROOFTOP UNIT SCHEDULE (BASIS OF DESIGN - AAON MANUFACTURING. SEE SPECS FOR ALTERNATIVES)														
UNIT DESIGNATION	SERVICE	MANUFACTURER MODEL NUMBER	MINIMUM OUTSIDE AIR (CFM)	SUPPLY FAN AIRFLOW (CFM)	SUPPLY FAN EXTERNAL STATIC PRESSURE (INCHES)	SUPPLY FAN (VFD)	EXHAUST FAN AIRFLOW (CFM)	EXHAUST FAN EXTERNAL STATIC PRESSURE (INCHES)	EXHAUST FAN (VFD)	SINGLE POINT POWER CONNECTION				REMARKS
										MCA	MOP	DISCONNECT TYPE	VOLTS/PH	
RTU-1	KITCHEN AREA	AAON RQ	-	2000	1.0	YES	-	-	-	62	70	FUSED	208/3	1,4,5
RTU-2	HOME CARE CLASSROOMS	AAON RQ	-	1800	1.0	YES	-	-	-	65	70	FUSED	208/3	1,4,5
RTU-3	CLASSROOMS	AAON RQ	-	1800	1.0	YES	-	-	-	62	70	FUSED	208/3	1,4,5
RTU-4	CLASSROOMS	AAON RQ	-	1800	1.0	YES	-	-	-	62	70	FUSED	208/3	1,4,5
RTU-5	CLASSROOMS	AAON RQ	-	1800	1.0	YES	-	-	-	62	70	FUSED	208/3	1,4,5
RTU-6	ADMINISTRATION AREA	AAON RQ	-	1800	1.0	YES	-	-	-	62	70	FUSED	208/3	1,4,5
RTU-7	CAFETERIA AREA	AAON RN	3300	4000	1.2	YES	-	-	-	263	300	FUSED	208/3	1,3,5,6
RTU-8	GYMNASIUM AREA	AAON RQ	-	1600	1.0	YES	-	-	-	62	70	FUSED	208/3	1,4,5
RTU-9	CLASSROOMS	AAON RQ	-	1800	1.0	YES	-	-	-	62	70	FUSED	208/3	1,4,5
RTU-10	CLASSROOMS	AAON RQ	-	1800	1.0	YES	-	-	-	62	70	FUSED	208/3	1,4,5

ROOFTOP UNIT HEATING COIL DATA SCHEDULE									
UNIT DESIGNATION	SERVICE	AIRFLOW (CFM)	TYPE	ELECTRIC EMERGENCY COIL (KW)	ENTERING AIR TEMPERATURE (F DB)	LEAVING AIR TEMPERATURE (F DB)	STAGING AND CONTROL	MAXIMUM AIR PRESSURE DROP (INCHES)	REMARKS
RTU-1	KITCHEN AREA	2000	ELECTRIC	15	72	87	SCR	0.1	2
RTU-2	HOME CARE CLASSROOMS	1800	ELECTRIC	15	72	87	SCR	0.2	2
RTU-3	CLASSROOMS	1800	ELECTRIC	15	72	87	SCR	0.2	2
RTU-4	CLASSROOMS	1800	ELECTRIC	15	72	87	SCR	0.2	2
RTU-5	CLASSROOMS	1800	ELECTRIC	15	72	87	SCR	0.2	2
RTU-6	ADMINISTRATION AREA	1800	ELECTRIC	15	72	87	SCR	0.2	2
RTU-7	CAFETERIA AREA	4000	ELECTRIC	75	20.9	87	SCR	0.1	2
RTU-7	CAFETERIA AREA	4000	HOT GAS	-	54.5	75	MODULATING	0.1	2
RTU-8	GYMNASIUM AREA	1600	ELECTRIC	15	72	90	SCR	0.2	2
RTU-9	CLASSROOMS	1800	ELECTRIC	15	72	90	SCR	0.2	2
RTU-10	CLASSROOMS	1800	ELECTRIC	15	72	90	SCR	0.2	2

ROOFTOP UNIT COOLING COIL DATA SCHEDULE										
UNIT DESIGNATION	SERVICE	AIRFLOW (CFM)	MINIMUM ROWS	MAXIMUM FINS PER INCH	ENTERING AIR TEMPERATURE (F DB/F WB)	LEAVING AIR TEMPERATURE (F DB)	OUTSIDE AMBIENT TEMPERATURE AT RATED COOLING COIL (F DB)	REFRIGERANT TYPE	COMPLIES WITH ASHRAE STANDARD 90.1-2012	REMARKS
RTU-1	KITCHEN AREA	2000	3	14	76/64.2	53	95	R-410A	YES	-
RTU-2	HOME CARE CLASSROOMS	1800	3	14	74/62.6	54	95	R-410A	YES	-
RTU-3	CLASSROOMS	1800	3	14	74/62.6	53.7	95	R-410A	YES	-
RTU-4	CLASSROOMS	1800	3	14	74/62.6	53.7	95	R-410A	YES	-
RTU-5	CLASSROOMS	1800	3	14	74/62.6	53.7	95	R-410A	YES	-
RTU-6	ADMINISTRATION AREA	1800	3	14	74/62.6	53.7	95	R-410A	YES	-
RTU-7	CAFETERIA AREA	4000	3	14	90.5/74.9	52.8	95	R-410A	YES	-
RTU-8	GYMNASIUM AREA	1600	3	14	74/62.6	52.8	95	R-410A	YES	-
RTU-9	CLASSROOMS	1800	3	14	74/62.6	53.7	95	R-410A	YES	-
RTU-10	CLASSROOMS	1800	3	14	74/62.6	53.7	95	R-410A	YES	-

NOTES:
 1. THE DIRECT EXPANSION HEAT PUMP COIL CAPACITY IS SELECTED AT THE COOLING CONDITION.
 2. PROVIDE AUXILIARY OR SUPPLEMENTAL ELECTRIC HEAT IN ADDITION TO THE PRIMARY HEAT PUMP COIL.
 3. UNIT SHALL HAVE REFRIGERANT ONLY CONTROLS; PROVIDE SUPERVISORY CONTROLLER TO ACCEPT BAS ANALOGUE INPUTS AND PROVIDE REFRIGERANT SYSTEMS SAFETIES.
 4. UNIT SHALL HAVE MANUFACTURER SINGLE ZONE VARIABLE AIR VOLUME CONTROL SEQUENCE.
 5. UNIT SHALL HAVE THE FOLLOWING OPTIONS AND ACCESSORIES: SINGLE POINT POWER, FACTORY WIRED 15A 115V GFI CONVENIENCE OUTLET, SMOKE DETECTORS, STAINLESS STEEL DRAIN PAN.
 6. PROVIDE UV REFRIGERANT COIL DISINFECTION SYSTEM WITH DOOR INTERLOCK

COMBINATION KITCHEN EXHAUST FAN AND MAKE-UP AIR UNIT														
UNIT DESIGNATION	SERVICE	MANUFACTURER MODEL NUMBER	SUPPLY AIR				EXHAUST AIR		SINGLE POINT POWER CONNECTION				REMARKS	
			AIRFLOW (CFM)	ENTERING AIR TEMPERATURE (F DB)	LEAVING AIR TEMPERATURE (F DB)	ELECTRIC HEATING COIL (KW)	EXTERNAL STATIC PRESSURE (IN)	AIRFLOW (CFM)	EXTERNAL STATIC PRESSURE (IN)	MCA	MOP	DISCONNECT TYPE		VOLTS/PH
KEFMAU-1	KITCHEN EXHAUST HOOD	DUA-AIRE V2-HOEL	2323	10.1	75	48	1.1"	2640	1.1"	185	200	NON-FUSED	208/3	1

NOTES:
 1. PROVIDE COMBINATION KITCHEN MAKE-UP AIR UNIT AND EXHAUST FAN TO MAINTAIN THE EXISTING KITCHEN EXHAUST HOOD UL LISTING INCLUDING CONCENTRIC DUCTWORK OPERATION. UNIT SHALL HAVE SINGLE POINT POWER CONNECTION. PROVIDE RELAY OUTPUTS FOR BAS MONITORING.

FAN SCHEDULE															
FAN DESIGNATION	SERVICE	MANUFACTURER MODEL NUMBER	AIRFLOW (CFM)	FAN TYPE	WHEEL TYPE	WHEEL DIAMETER (INCHES)	FAN STATIC PRESSURE (INCHES)	RPM	BHP	CLASS	MOTOR DATA				REMARKS
											HP	RPM	VOLTS/PH	VFD	
EF-1	KITCHEN STORAGE/TOILET	GREENHECK G 80-D	200	DOWNBLAST	BI	10.875	.375	1437	0.04	-	1/20	1550	120/1	NO	1
EF-1A	DISHWASHER	GREENHECK CUE 99-VG	500	UPBLAST	BI	11.188	.375	1209	.07	-	1/4	1725	120/1	NO	1,2,3
EF-2	HOME CARE TOILET ROOMS	GREENHECK G 80-G	150	DOWNBLAST	BI	10.875	.25	1155	.02	-	1/30	1300	120/1	NO	1
EF-3	CLASSROOM TOILET ROOMS	GREENHECK G 80-G	150	DOWNBLAST	BI	10.875	.25	1155	.02	-	1/30	1300	120/1	NO	1
EF-4	CLASSROOM TOILET ROOMS	GREENHECK G 80-G	150	DOWNBLAST	BI	10.875	.25	1155	.02	-	1/30	1300	120/1	NO	1
EF-5	CLASSROOM TOILET ROOMS	GREENHECK G 80-G	150	DOWNBLAST	BI	10.875	.25	1155	.02	-	1/30	1300	120/1	NO	1
EF-6	ADMIN PUBLIC TOILET ROOMS	GREENHECK CUE 90-VG	525	UPBLAST	BI	10.876	.375	1648	.1	-	1/6	1725	120/1	NO	1,2
EF-6A	ADMIN TOILET ROOMS	GREENHECK G 80-D	200	DOWNBLAST	BI	10.875	.375	1437	0.04	-	1/20	1550	120/1	NO	1
EF-9	CLASSROOM TOILET ROOMS	GREENHECK G 80-G	150	DOWNBLAST	BI	10.875	.25	1155	.02	-	1/30	1300	120/1	NO	1
EF-10	CLASSROOM TOILET ROOMS	GREENHECK G 80-G	150	DOWNBLAST	BI	10.875	.25	1155	.02	-	1/30	1300	120/1	NO	1

NOTES:
 1. PROVIDE BACKDRAFT DAMPER AND EXTERNAL STATIC PRESSURE AS SHOWN ON SCHEDULE
 2. PROVIDE ELECTRICALLY COMMUNICATED MOTOR AND MANUAL SPEED CONTROL
 3. AIRSTREAM TEMPERATURE 180F

STATE OF MISSOURI
 MICHAEL L. PARSON,
 GOVERNOR



DREW FLANAKIN - PROFESSIONAL ENGINEER
 MO# PE-2016017619



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 St. Louis, MO 63141 • 314-727-8760
 MO Certificate of Authority No. 2009021478

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 CHECKED BY: DEF
 DESIGNED BY: DEF

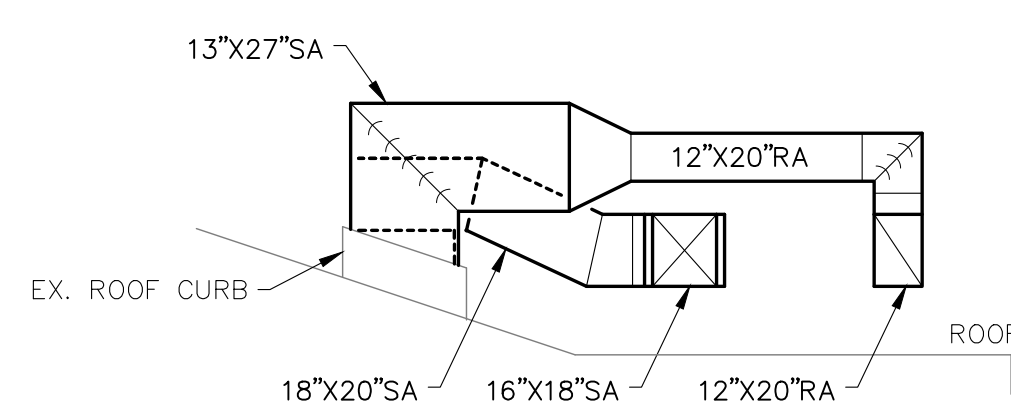
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MECHANICAL
 SCHEDULES

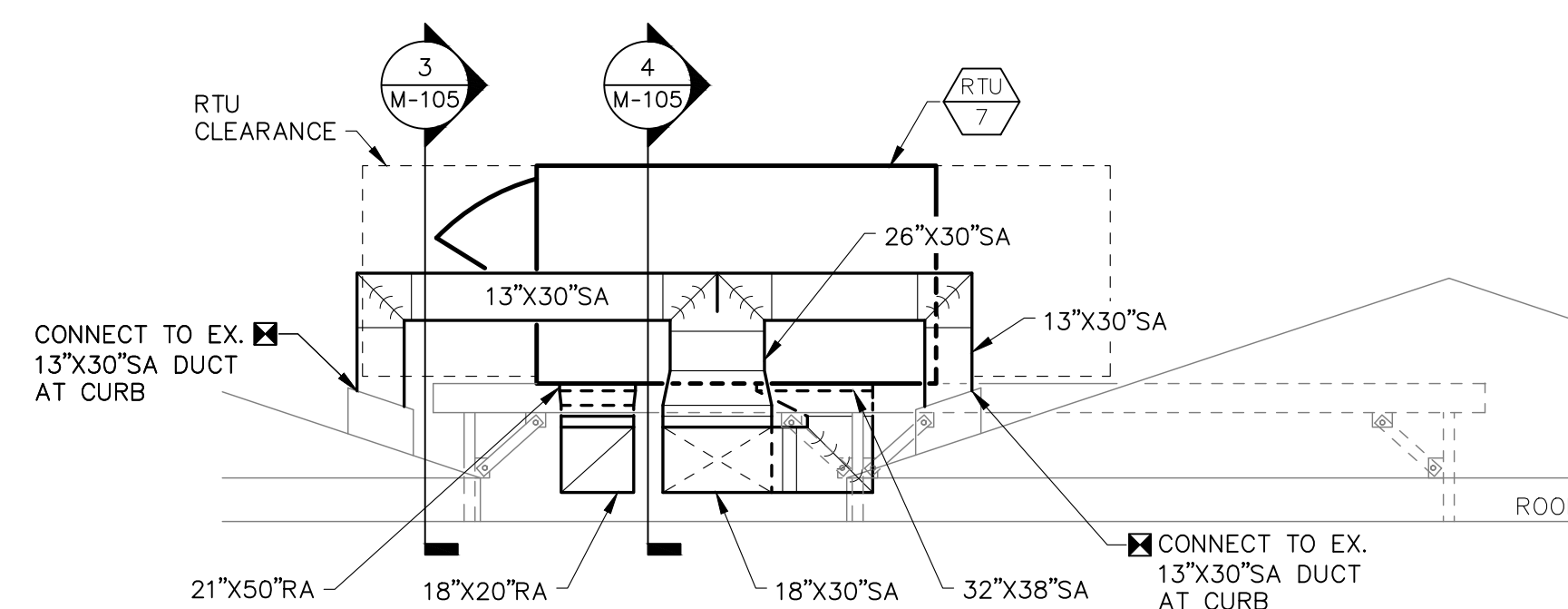
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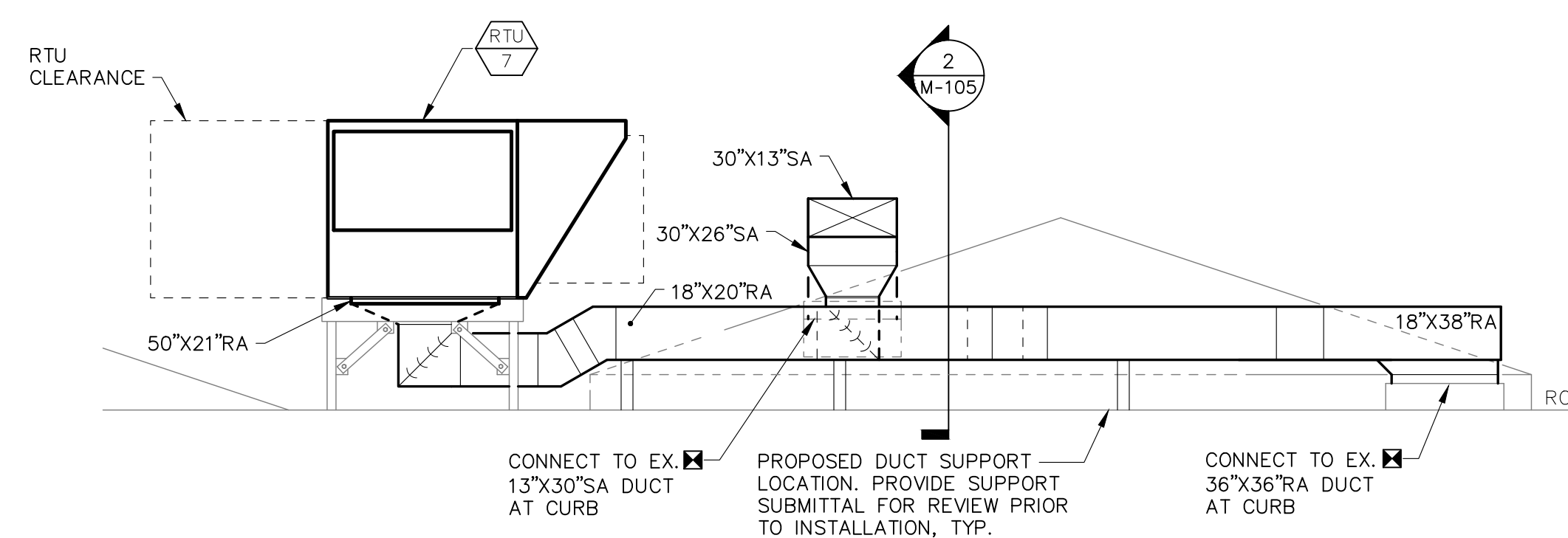
6 OF 15 SHEETS
 08/19/2022



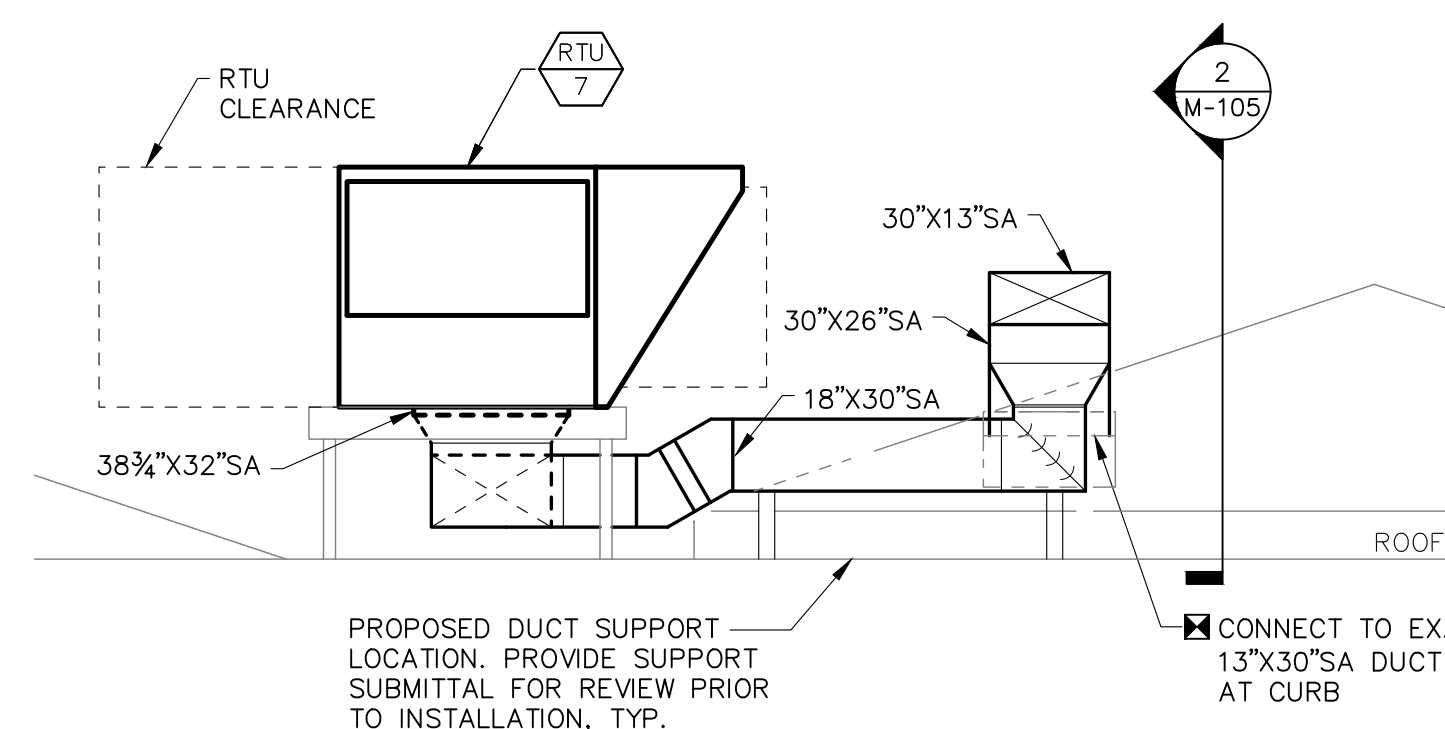
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M-105 **ROOFTOP UNIT SECTION - RTU-6**
SCALE: 1/4"=1'-0"



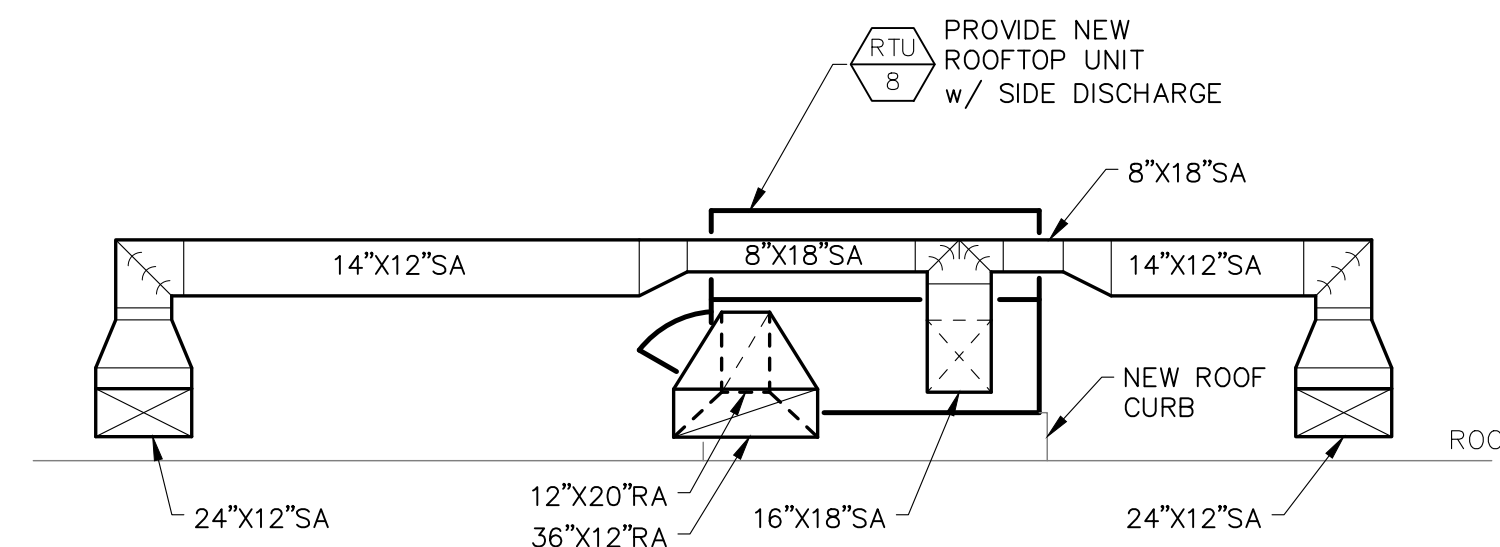
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M-105 **ROOFTOP UNIT SECTION - RTU-7**
SCALE: 1/4"=1'-0"



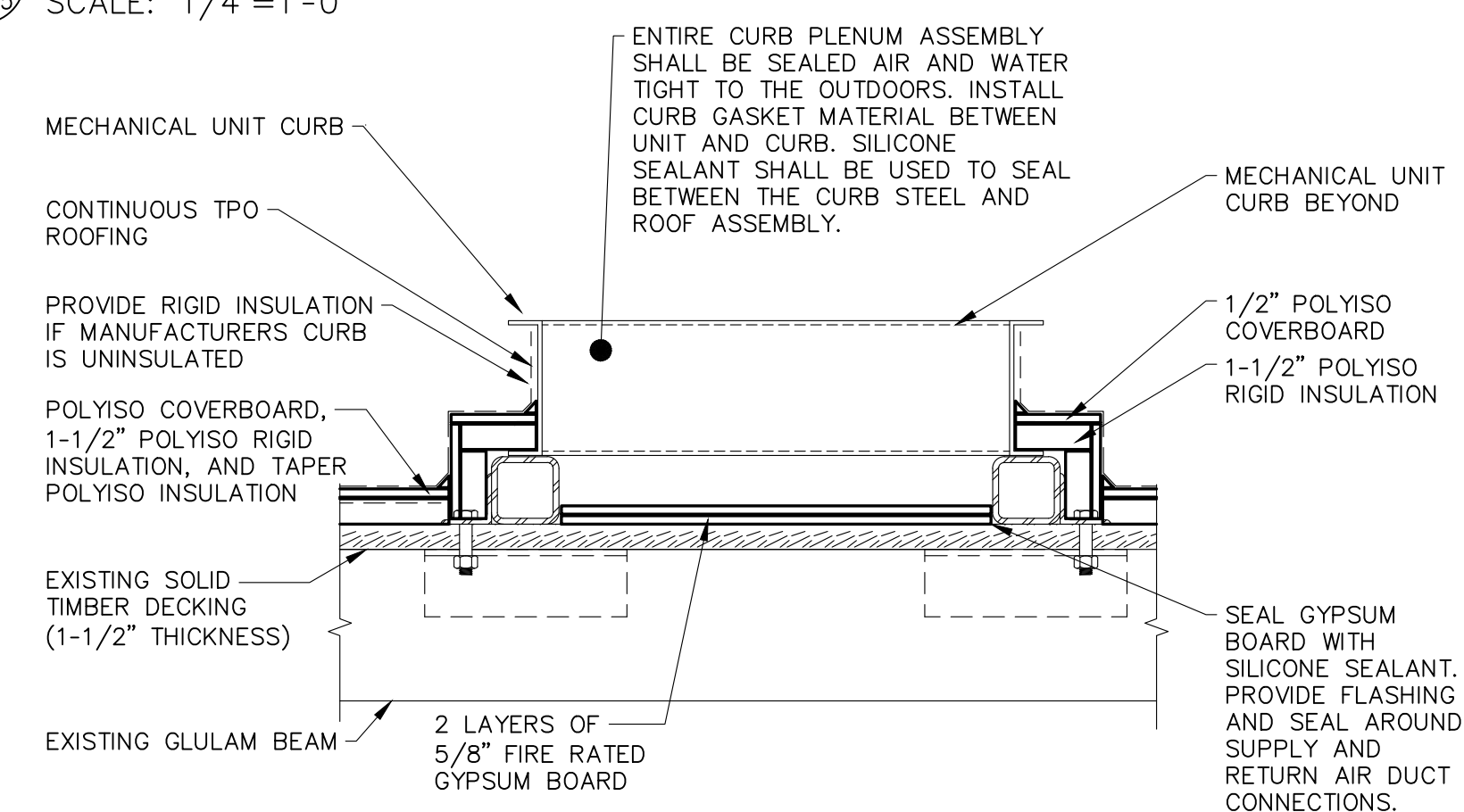
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M-105 **ROOFTOP UNIT SECTION - RTU-7**
SCALE: 1/4"=1'-0"



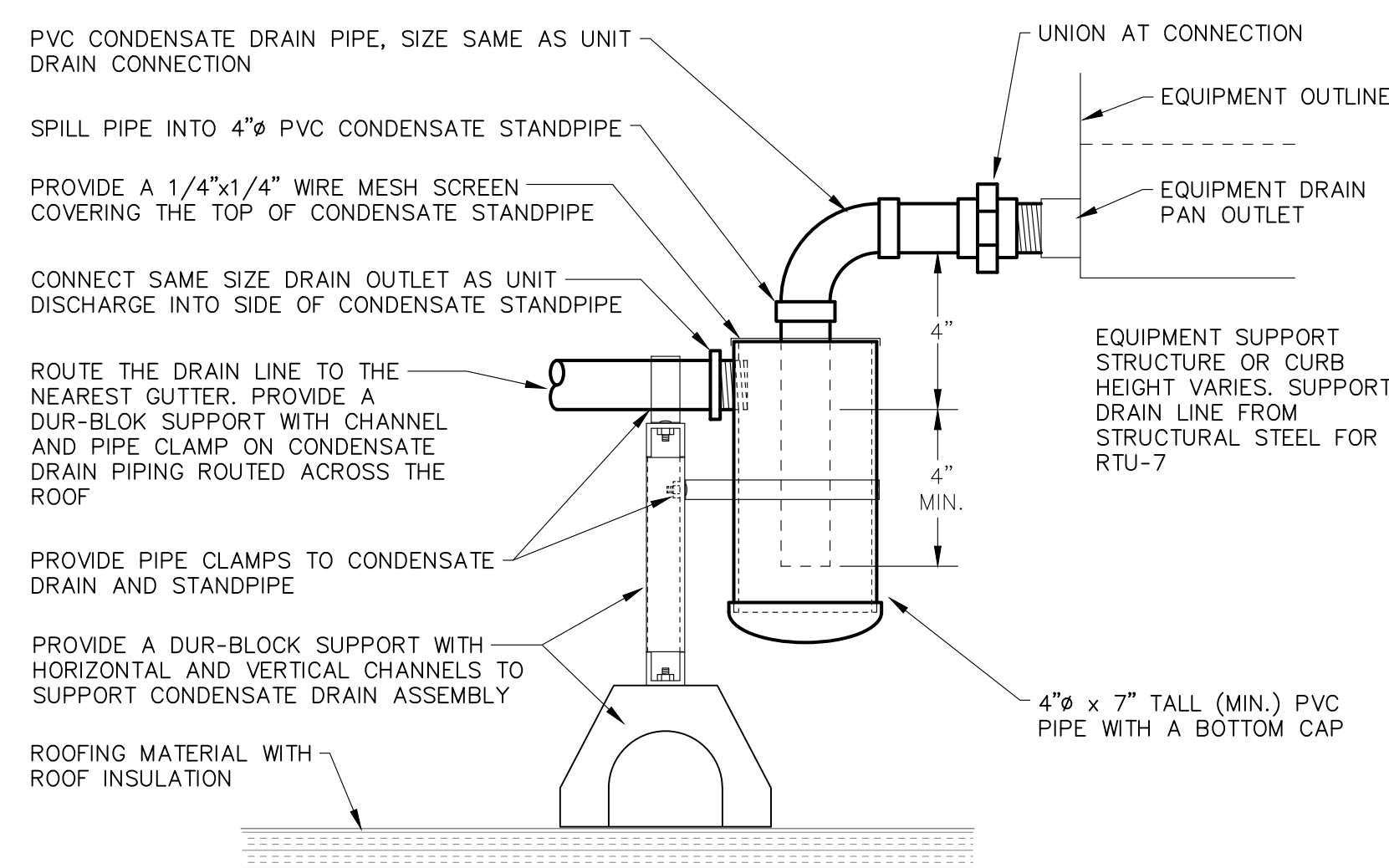
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M-105 **ROOFTOP UNIT SECTION - RTU-7**
SCALE: 1/4"=1'-0"



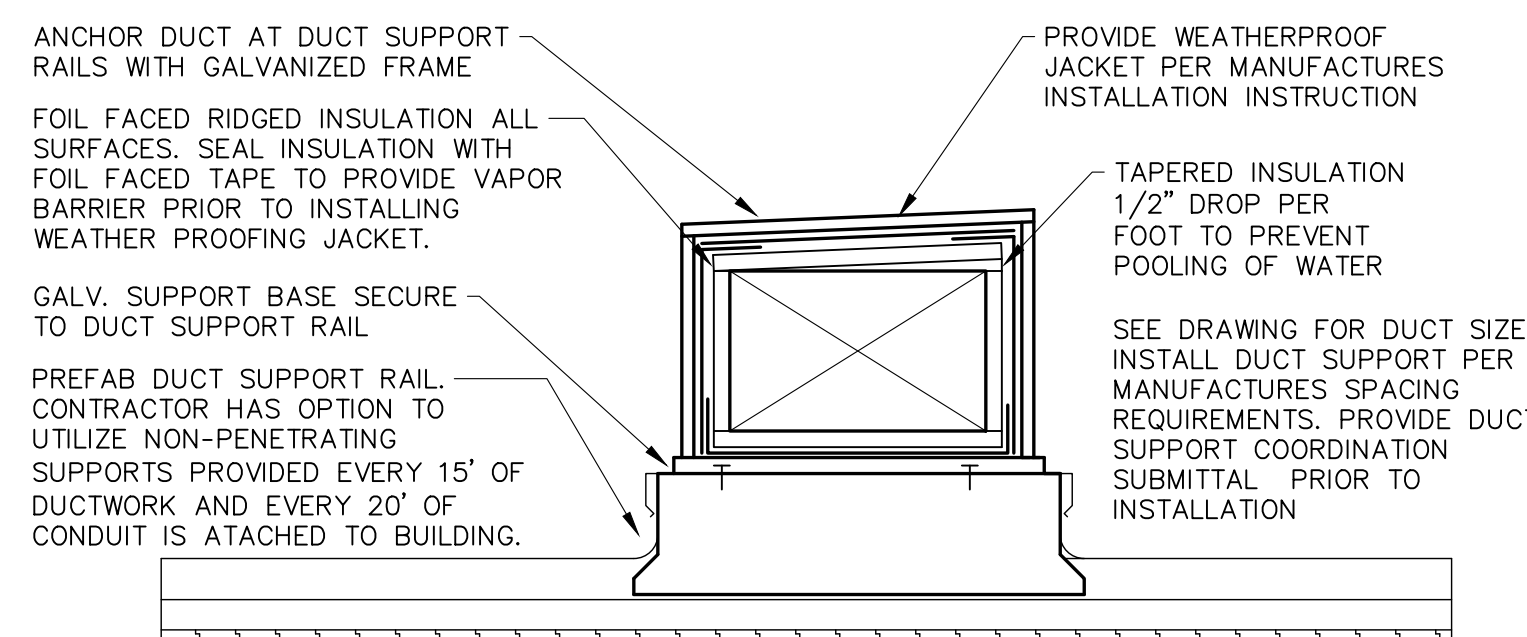
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M-105 **ROOFTOP UNIT SECTION - RTU-8**
SCALE: 1/4"=1'-0"



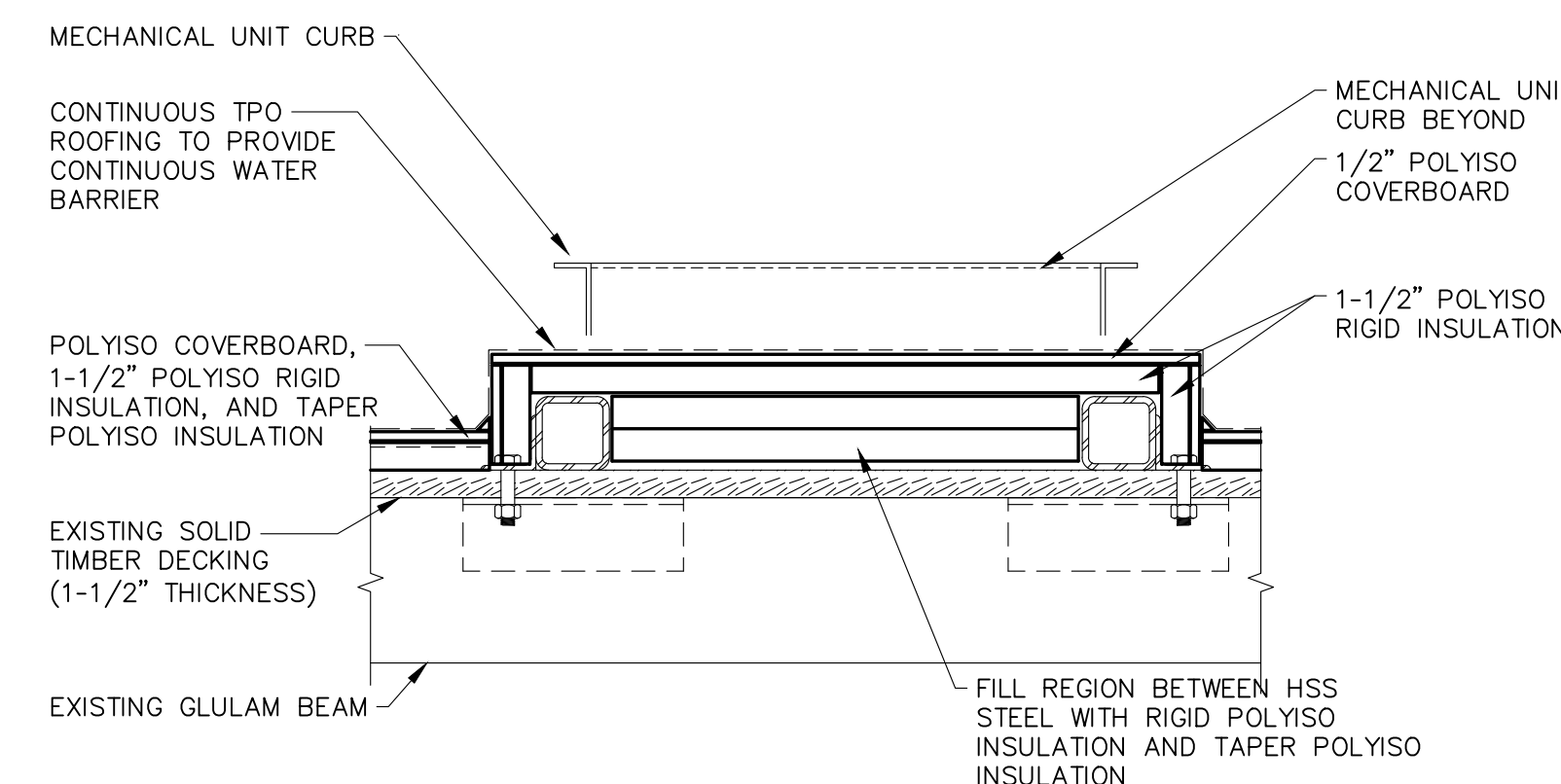
INSULATION AND ROOFING DETAIL AT ROOF CURB
SCALE: NONE



ROOFTOP UNIT CONDENSATE DRAIN DETAIL
NO SCALE (FOR DRAW-THRU AIR HANDLING UNIT)



DUCT INSULATION AND WEATHERPROOF JACKET DETAIL
SCALE: 1/2" = 1'-0"



INSULATION AND ROOFING DETAIL AT HSS 4X4X3/8 EXTENSION FROM ROOF CURB
SCALE: NONE



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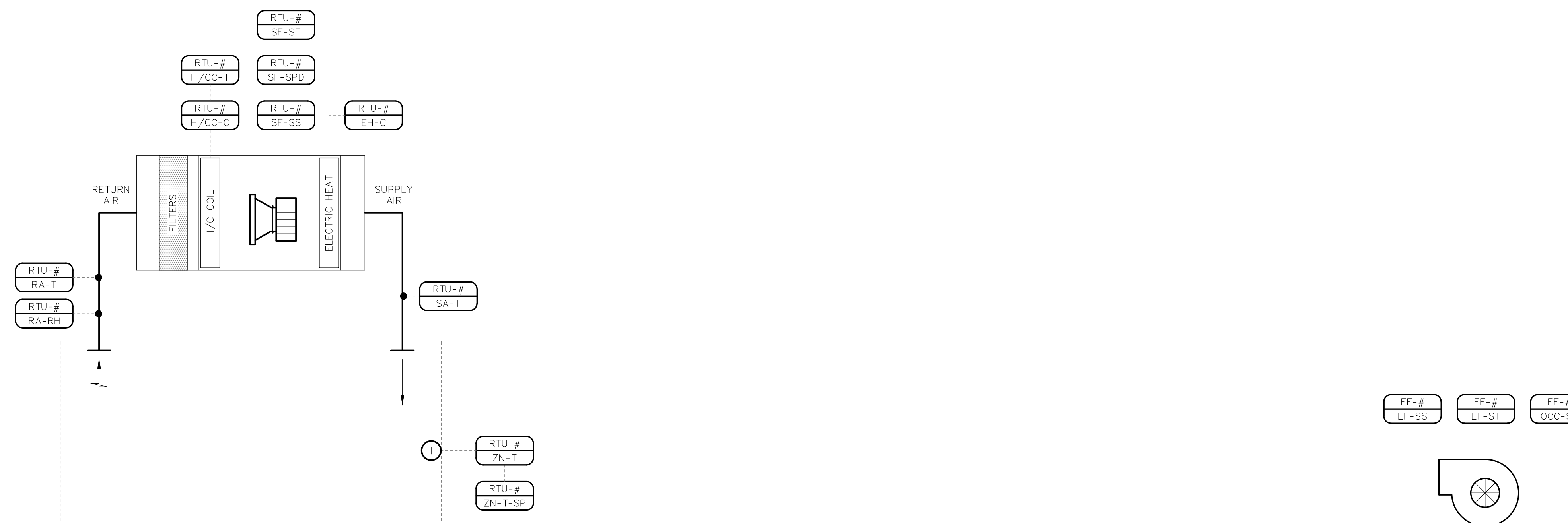
RTU-1, 2, 3, 4, 5, 6, 8, 9 & 10 TEMPERATURE CONTROL POINTS LIST																	
POINT DESCRIPTION									ALARM		TREND			FIELD DEVICE DESCRIPTION			
TYPE	CONTROLLER NAME	NAME	DESCRIPTION	TYPE	SET-POINT	UNITS	MONITOR	ADJUST	NOTIFY	THRESHOLD	TREND	FREQ	ARCHIVE	INSTRUMENT TYPE	SIGNAL	RANGE	NOTES
AI	RTU-#	H/CC-T	HEATING/COOLING COIL TEMPERATURE	TEMPERATURE	-	DEGREES F	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	FLEXIBLE AVERAGING SENSOR	OHMS	-30 TO 250 F	
DO	RTU-#	COMPX-SS	COMPRESSOR X START/STOP COMMAND	START/STOP	-	ON/OFF	X	OVERRIDE	-	-	X	COS	1 WEEK	PILOT OPERATED RELAY	CONTACT	ON/OFF	
AO	RTU-#	COMPX-C	COMPRESSOR X COMMAND	COMMAND	-	% ON	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	HEATPUMP COMPRESSOR	4-20 MA	0 TO 100%	
DI	RTU-#	COMPX-ST	COMPRESSOR X STATUS	STATUS	-	ON/OFF	X	OVERRIDE	X	SS < > ST	X	COS	1 WEEK	CURRENT SENSING SWITCH	CONTACT	OPEN/CLOSED	
AI	RTU-#	RA-T	RETURN AIR TEMPERATURE	TEMPERATURE	-	DEGREES F	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	RIGID TEMPERATURE SENSOR	OHMS	-30 TO 250 F	
AI	RTU-#	RA-RH	RETURN AIR RELATIVE HUMIDITY	HUMIDITY	-	% RH	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	DUCT HUMIDITY SENSOR	OHMS	-30 TO 250 F	
AI	RTU-#	SA-T	SUPPLY AIR TEMPERATURE	TEMPERATURE	-	DEGREES F	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	RIGID TEMPERATURE SENSOR	OHMS	-30 TO 250 F	
DI	RTU-#	SF-ST	SUPPLY FAN STATUS	STATUS	-	ON/OFF	X	OVERRIDE	X	SS < > ST	X	COS	1 WEEK	CURRENT SENSING SWITCH	CONTACT	OPEN/CLOSED	
AO	RTU-#	SF-SPD	SUPPLY FAN SPEED	COMMAND	-	% SPEED	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	DIRECT CONNECTION TO VFD	4-20 MA	0 TO 100%	
DO	RTU-#	SF-SS	SUPPLY FAN START/STOP COMMAND	START/STOP	-	ON/OFF	X	OVERRIDE	-	-	X	COS	1 WEEK	PILOT OPERATED RELAY	CONTACT	ON/OFF	
AO	RTU-#	EH-C	ELECTRIC HEAT COMMAND	COMMAND	-	% ON	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	ELECTRIC HEAT CONTROLLER	4-20 MA	0 TO 100%	
NET	RTU-#	ZN-T	ZONE AIR TEMPERATURE	TEMPERATURE	-	DEGREES F	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	DIGITAL TEMPERATURE SENSOR WITH DISPLAY SETPOINT	NET	-30 TO 250 F	
NET	RTU-#	ZN-T-SP	ZONE AIR TEMPERATURE SET POINT	TEMPERATURE	-	DEGREES F	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	ADJUST AND OCCUPANCY OVERRIDE BUTTON	NET	68-76 F	

NOTES:

BUILDING AUTOMATION SYSTEM SHALL BE CAPABLE OF MONITORING AND OVERRIDING ALL TEMPERATURE CONTROL POINTS THROUGH THE UNIT BACNET CONNECTION
1. PROVIDE POINT FOR EACH COMPRESSOR.

POINTS LIST SYMBOLS AND ABBREVIATIONS

DI	DIGITAL INPUT TO BAS	NET	NETWORKED POINTS
DO	DIGITAL OUTPUT FROM BAS	HW	HARD-WIRED INTERLOCK/SAFETY
AI	ANALOG INPUT TO BAS	COS	CHANGE OF STATE
AO	ANALOG OUTPUT FROM BAS		



EXHAUST FAN TEMPERATURE CONTROL POINTS LIST																	
POINT DESCRIPTION									ALARM		TREND			FIELD DEVICE DESCRIPTION			
TYPE	CONTROLLER NAME	NAME	DESCRIPTION	TYPE	SET-POINT	UNITS	MONITOR	ADJUST	NOTIFY	THRESHOLD	TREND	FREQ	ARCHIVE	INSTRUMENT TYPE	SIGNAL	RANGE	NOTES
EF-2, 3, 4, 5, 9, 10 CONTROLS AND MONITORING																	
	EF-X	SF-ST	EXHAUST FAN STATUS	STATUS	-	ON/OFF	X	OVERRIDE	X	SS < > ST	X	COS	1 WEEK	CURRENT SENSING SWITCH	CONTACT	OPEN/CLOSED	2
DO	EF-X	SF-SS	EXHAUST FAN START/STOP COMMAND	START/STOP	-	ON/OFF	X	OVERRIDE	-	-	X	COS	1 WEEK	PILOT OPERATED RELAY	CONTACT	ON/OFF	2
AI	EF-X	OCC-ST	OCCUPANCY SENSOR STATUS	STATUS	-	ON/OFF	X	OVERRIDE	-	-	X	COS	1 WEEK	OCCUPANCY SENSOR	CONTACT	OPEN/CLOSED	1,2,3
EF-1, 6, 6A CONTROLS AND MONITORING																	
DI	EF-X	SF-ST	EXHAUST FAN STATUS	STATUS	-	ON/OFF	X	OVERRIDE	X	SS < > ST	X	COS	1 WEEK	CURRENT SENSING SWITCH	CONTACT	OPEN/CLOSED	2
DO	EF-X	SF-SS	EXHAUST FAN START/STOP COMMAND	START/STOP	-	ON/OFF	X	OVERRIDE	-	-	X	COS	1 WEEK	PILOT OPERATED RELAY	CONTACT	ON/OFF	4
AI	EF-X	OCC-ST	OCCUPANCY SENSOR STATUS	STATUS	-	ON/OFF	X	OVERRIDE	-	-	X	COS	1 WEEK	OCCUPANCY SENSOR	CONTACT	OPEN/CLOSED	1,2,3
EF-1A MONITORING																	
DI	EF-X	SF-ST	EXHAUST FAN STATUS	STATUS	-	ON/OFF	X	OVERRIDE	X	SS < > ST	X	COS	1 WEEK	CURRENT SENSING SWITCH	CONTACT	OPEN/CLOSED	5
DO	EF-X	SF-SS	EXHAUST FAN START/STOP COMMAND	STATUS	-	ON/OFF	X	OVERRIDE	-	-	X	COS	1 WEEK	PILOT OPERATED RELAY	CONTACT	ON/OFF	5

NOTES:

1. BASE BID INCLUDES STANDALONE OCCUPANCY SENSOR SYSTEM FOR EXHAUST FAN START/STOP CONTROL.
2. ALTERNATE 1: BUILDING AUTOMATION CONTROL OF THE EXHAUST FAN INCLUDING OCCUPANCY SENSOR INPUT TO THE BAS SYSTEM.
3. SEE PLANS FOR LOCATIONS AND QUANTITIES OF OCCUPANCY SENSORS.
4. BASE BID INCLUDES A STANDALONE 7 DAY TIME CLOCK FOR EXHAUST FAN START/STOP CONTROL.
5. ALTERNATE 1: BUILDING AUTOMATION MONITORING OF THE EXISTING DISHWASHER STANDALONE CONTROLS

POINTS LIST SYMBOLS AND ABBREVIATIONS

DI	DIGITAL INPUT TO BAS	NET	NETWORKED POINTS
DO	DIGITAL OUTPUT FROM BAS	HW	HARD-WIRED INTERLOCK/SAFETY
AI	ANALOG INPUT TO BAS	COS	CHANGE OF STATE
AO	ANALOG OUTPUT FROM BAS		

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REPLACE ROOFTOP UNITS

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1020 S. PARKWAY STREET
CAPE GIRARDEAU, MO 63703

PROJECT # E1904-01
SITE # 2029
FACILITY # 5012029003

REVISION: _____
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REVISION: _____
DATE: _____
ISSUE DATE: 08/19/2022

E1904-01-2411-
CAD DWG FILE: 30011-M-106.dwg
DRAWN BY: LRH
CHECKED BY: DEF
DESIGNED BY: DEF

SHEET TITLE:

AIR FLOW DIAGRAM
AND TEMP. CONTROL
POINTS LIST

SHEET NUMBER:

M-106

8 OF 15 SHEETS
08/19/2022



DREW FLANAKIN - PROFESSIONAL ENGINEER
MO# PE-2016017619



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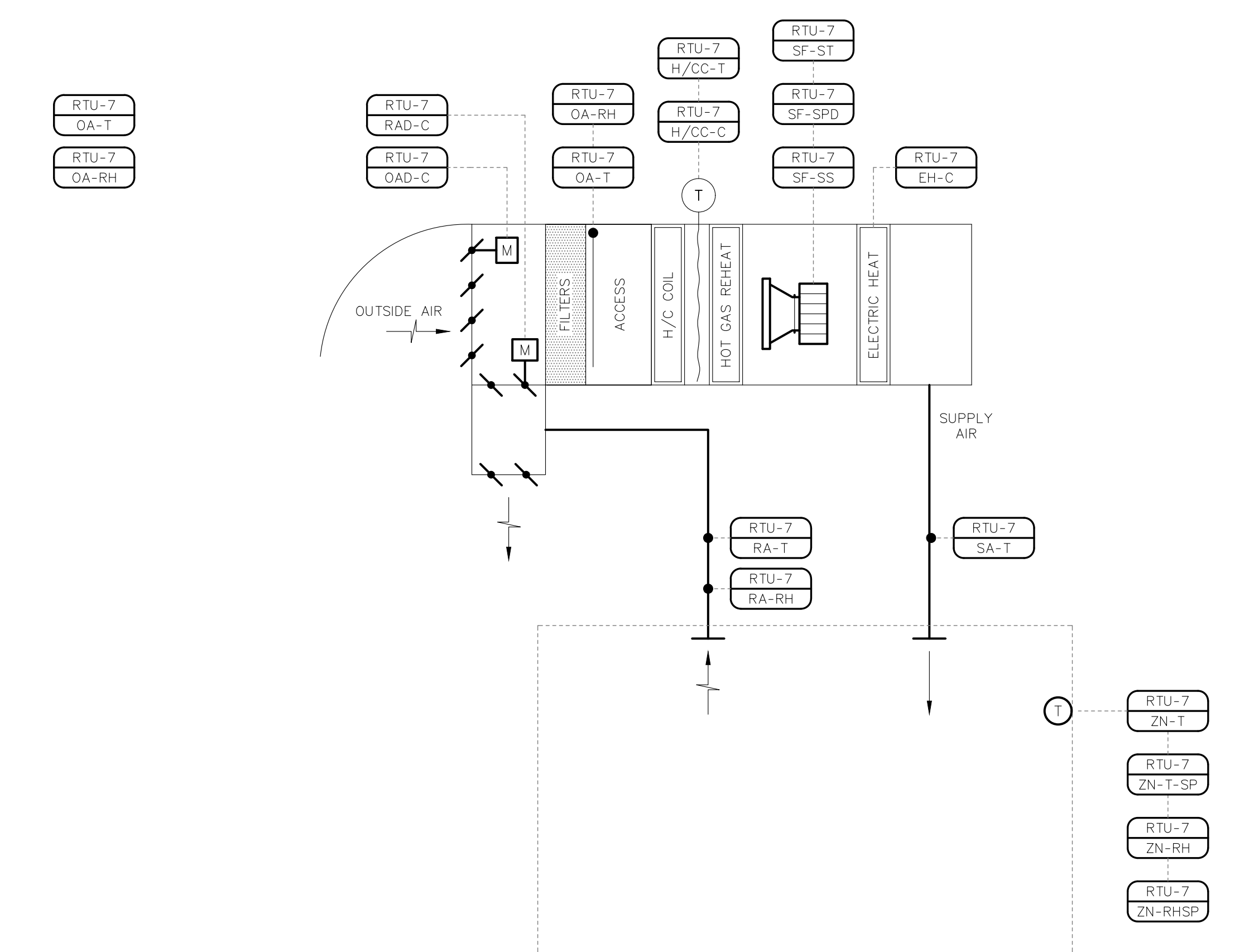
RTU-7 TEMPERATURE CONTROL POINTS LIST

TYPE	CONTROLLER NAME	NAME	DESCRIPTION	TYPE	SET-POINT	UNITS	MONITOR	ADJUST	ALARM		TREND			FIELD DEVICE DESCRIPTION			NOTES
									NOTIFY	THRESHOLD	TREND	FREQ	ARCHIVE	INSTRUMENT TYPE	SIGNAL	RANGE	
DO	RTU-7	OAD-C	OUTSIDE AIR DAMPER COMMAND	DAMPER	-	% OPEN	X	OVERRIDE	-	-	X	COS	1 WEEK	CONTROL DAMPER WITH ELECTRONIC ACTUATOR	4-20 MA	0 TO 100%	
AI	RTU-7	OA-RH	OUTSIDE AIR RELATIVE HUMIDITY	TEMPERATURE	-	DEGREES F	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	RIGID TEMPERATURE SENSOR	OHMS	-30 TO 250 F	
AI	RTU-7	OA-T	OUTDOOR AIR TEMPERATURE	TEMPERATURE	-	DEGREES F	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	FLEXIBLE AVERAGING SENSOR	OHMS	-30 TO 250 F	
AI	RTU-7	H/CC-T	HEATING/COOLING COIL TEMPERATURE	TEMPERATURE	-	DEGREES F	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	FLEXIBLE AVERAGING SENSOR	OHMS	-30 TO 250 F	
DO	RTU-7	COMPX-SS	COMPRESSOR X START/STOP COMMAND	START/STOP	-	ON/OFF	X	OVERRIDE	-	-	X	COS	1 WEEK	PILOT OPERATED RELAY	CONTACT	ON/OFF	1
AO	RTU-7	COMPX-C	COMPRESSOR X COMMAND	COMMAND	-	% ON	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	HEATPUMP COMPRESSOR	4-20 MA	0 TO 100%	
DI	RTU-7	COMPX-ST	COMPRESSOR X STATUS	STATUS	-	ON/OFF	X	OVERRIDE	X	SS < > ST	X	COS	1 WEEK	CURRENT SENSING SWITCH	CONTACT	OPEN/CLOSED	1
AI	RTU-7	SA-T	SUPPLY AIR TEMPERATURE	TEMPERATURE	-	DEGREES F	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	RIGID TEMPERATURE SENSOR	OHMS	-30 TO 250 F	
DI	RTU-7	SF-ST	SUPPLY FAN STATUS	STATUS	-	ON/OFF	X	OVERRIDE	X	SS < > ST	X	COS	1 WEEK	CURRENT SENSING SWITCH	CONTACT	OPEN/CLOSED	
AO	RTU-7	SF-SPD	SUPPLY FAN SPEED	COMMAND	-	% SPEED	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	DIRECT CONNECTION TO VFD	4-20 MA	0 TO 100%	
DO	RTU-7	SF-SS	SUPPLY FAN START/STOP COMMAND	START/STOP	-	ON/OFF	X	OVERRIDE	-	-	X	COS	1 WEEK	PILOT OPERATED RELAY	CONTACT	ON/OFF	
AI	RTU-7	RA-RH	RETURN AIR RELATIVE HUMIDITY	HUMIDITY	-	% RH	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	DUCT HUMIDITY SENSOR	OHMS	-30 TO 250 F	
AO	RTU-7	RAD-C	RETURN AIR DAMPER COMMAND	DAMPER	-	% OPEN	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	CONTROL DAMPER WITH ELECTRONIC ACTUATOR	4-20 MA	0 TO 100%	
AO	RTU-7	EH-C	ELECTRIC HEAT COMMAND	COMMAND	-	% ON	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	CONTROL DAMPER WITH ELECTRONIC ACTUATOR	4-20 MA	0 TO 100%	
NET	RTU-7	ZN-T	ZONE AIR TEMPERATURE	TEMPERATURE	-	DEGREES F	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	DIGITAL TEMPERATURE AND HUMIDITY SENSOR WITH DISPLAY SETPOINT ADJUST AND OCCUPANCY OVERRIDE BUTTON	NET	-30 TO 250 F	
NET	RTU-7	ZN-T-SP	ZONE AIR TEMPERATURE SET POINT	TEMPERATURE	-	DEGREES F	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	DIGITAL TEMPERATURE AND HUMIDITY SENSOR WITH DISPLAY SETPOINT ADJUST AND OCCUPANCY OVERRIDE BUTTON	NET	68-76	
AI	RTU-7	ZN-RH	ZONE RELATIVE HUMIDITY	HUMIDITY	-	% RH	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	DIGITAL TEMPERATURE AND HUMIDITY SENSOR WITH DISPLAY SETPOINT ADJUST AND OCCUPANCY OVERRIDE BUTTON	NET	0 - 100%	
AI	RTU-7	ZN-RHSP	ZONE RELATIVE HUMIDITY SET POINT	HUMIDITY	-	% RH	X	OVERRIDE	-	-	X	15 MIN	1 WEEK	DIGITAL TEMPERATURE AND HUMIDITY SENSOR WITH DISPLAY SETPOINT ADJUST AND OCCUPANCY OVERRIDE BUTTON	NET	20 - 65%	

NOTES:
1. PROVIDE POINT FOR EACH COMPRESSOR.

POINTS LIST SYMBOLS AND ABBREVIATIONS

DI	DIGITAL INPUT TO BAS	NET	NETWORKED POINTS
DO	DIGITAL OUTPUT FROM BAS	HW	HARD-WIRED INTERLOCK/SAFETY
AI	ANALOG INPUT TO BAS	COS	CHANGE OF STATE
AO	ANALOG OUTPUT FROM BAS		



COMBINATION KITCHEN MAKE-UP AND EXHAUST TEMPERATURE CONTROL POINTS LIST

TYPE	CONTROLLER NAME	NAME	DESCRIPTION	TYPE	SET-POINT	UNITS	MONITOR	ADJUST	ALARM		TREND			FIELD DEVICE DESCRIPTION			NOTES
									NOTIFY	THRESHOLD	TREND	FREQ	ARCHIVE	INSTRUMENT TYPE	SIGNAL	RANGE	
DI	CMU	SF-ST	EXHAUST FAN STATUS	STATUS	-	ON/OFF	X	OVERRIDE	X	SS < > ST	X	COS	1 WEEK	CURRENT SENSING SWITCH	CONTACT	OPEN/CLOSED	1
DO	CMU	SF-SS	EXHAUST FAN START/STOP COMMAND	STATUS	-	ON/OFF	X	OVERRIDE	-	-	X	COS	1 WEEK	PILOT OPERATED RELAY	CONTACT	ON/OFF	1
DI	CMU	SF-ST	SUPPLY FAN STATUS	STATUS	-	ON/OFF	X	OVERRIDE	X	SS < > ST	X	COS	1 WEEK	CURRENT SENSING SWITCH	CONTACT	OPEN/CLOSED	1
DO	CMU	SF-SS	SUPPLY FAN START/STOP COMMAND	STATUS	-	ON/OFF	X	OVERRIDE	-	-	X	COS	1 WEEK	PILOT OPERATED RELAY	CONTACT	ON/OFF	1

NOTES:
1. ALTERNATE 1: BUILDING AUTOMATION MONITORING OF THE STANDALONE EQUIPMENT CONTROLS. COORDINATE WITH UNIT MANUFACTURE

POINTS LIST SYMBOLS AND ABBREVIATIONS

DI	DIGITAL INPUT TO BAS	NET	NETWORKED POINTS
DO	DIGITAL OUTPUT FROM BAS	HW	HARD-WIRED INTERLOCK/SAFETY
AI	ANALOG INPUT TO BAS	COS	CHANGE OF STATE
AO	ANALOG OUTPUT FROM BAS		

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REPLACE ROOFTOP UNITS

PARKVIEW STATE SCHOOL
1020 S. PARKWAY STREET
CAPE GIRARDEAU, MO 63703

PROJECT # E1904-01
SITE # 2029
FACILITY # 5012029003

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DATE: _____
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DATE: _____

ISSUE DATE: 08/19/2022

E1904-01-2411-
CAD DWG FILE: 30011-M-107.dwg
DRAWN BY: LRH
CHECKED BY: DEF
DESIGNED BY: DEF

SHEET TITLE:

AIR FLOW DIAGRAM
AND TEMP. CONTROL
POINTS LIST

SHEET NUMBER:

M-107

9 OF 15 SHEETS
08/19/2022



DREW FLANAKIN - PROFESSIONAL ENGINEER
MO# PE-2016017619



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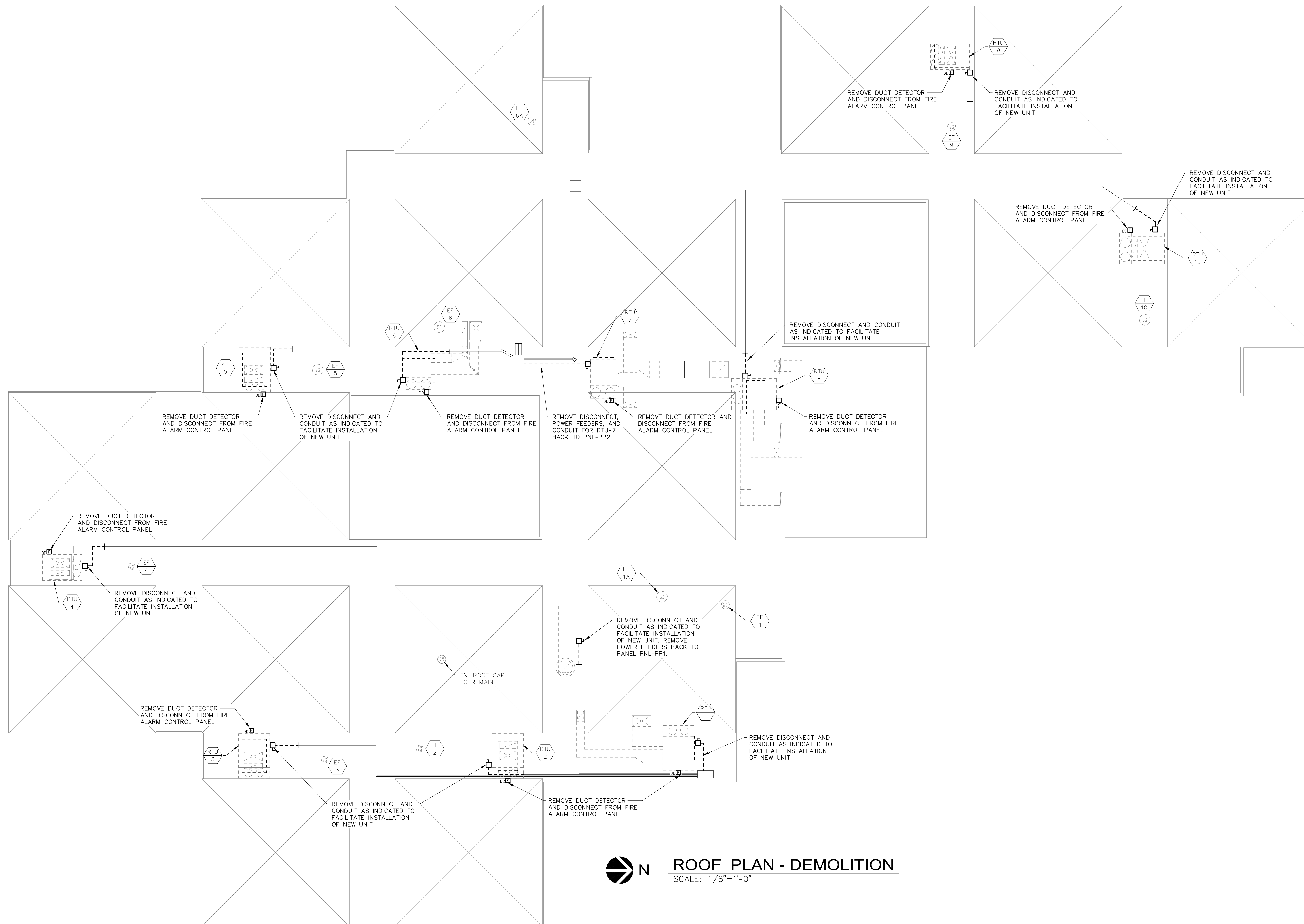
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CAD DWG FILE: 30011-E-101.dwg
DRAWN BY: LRH
CHECKED BY: DEF
DESIGNED BY: DEF

SHEET TITLE:
**ROOF PLAN
DEMOLITION**

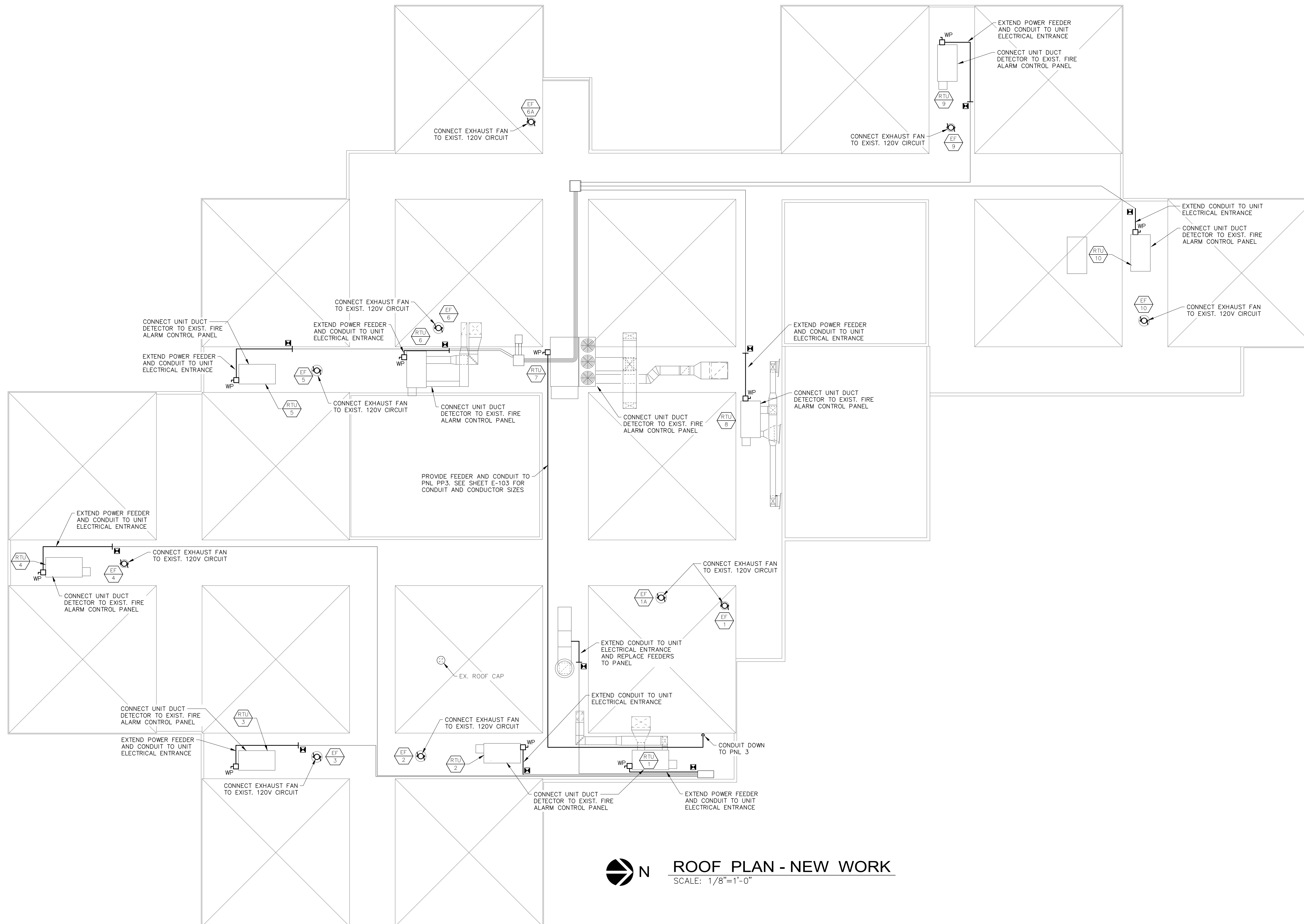
SHEET NUMBER:

E-101

10 OF 15 SHEETS
08/19/2022



ROOF PLAN - DEMOLITION
SCALE: 1/8"=1'-0"



ROOF PLAN - NEW WORK
SCALE: 1/8"=1'-0"



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ISSUE DATE: 08/19/2022

E1904-01-2411-
CAD DWG FILE: 30011-E-103.dwg
DRAWN BY: LRH
CHECKED BY: DEF
DESIGNED BY: DEF

SHEET TITLE:
FLOOR PLAN
NEW WORK

SHEET NUMBER:

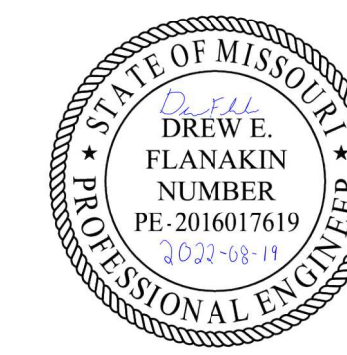
E-103

12 OF 15 SHEETS
08/19/2022



FLOOR PLAN - NEW WORK

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



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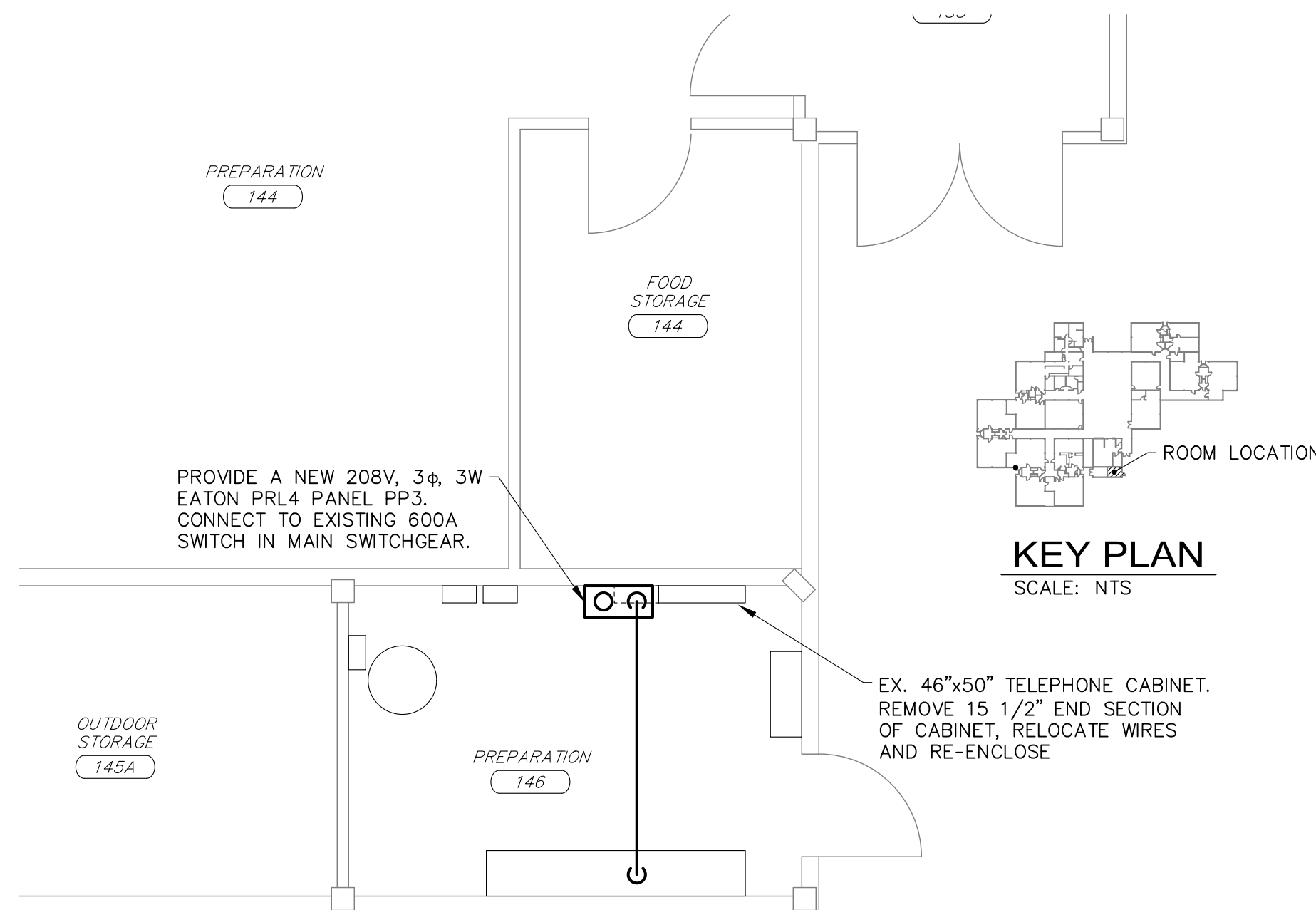
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CAD DWG FILE: 30011-E-104dwg
DRAWN BY: LRH
CHECKED BY: DEF
DESIGNED BY: DEF

SHEET TITLE:
**ONE-LINE RISER
DIAGRAM**

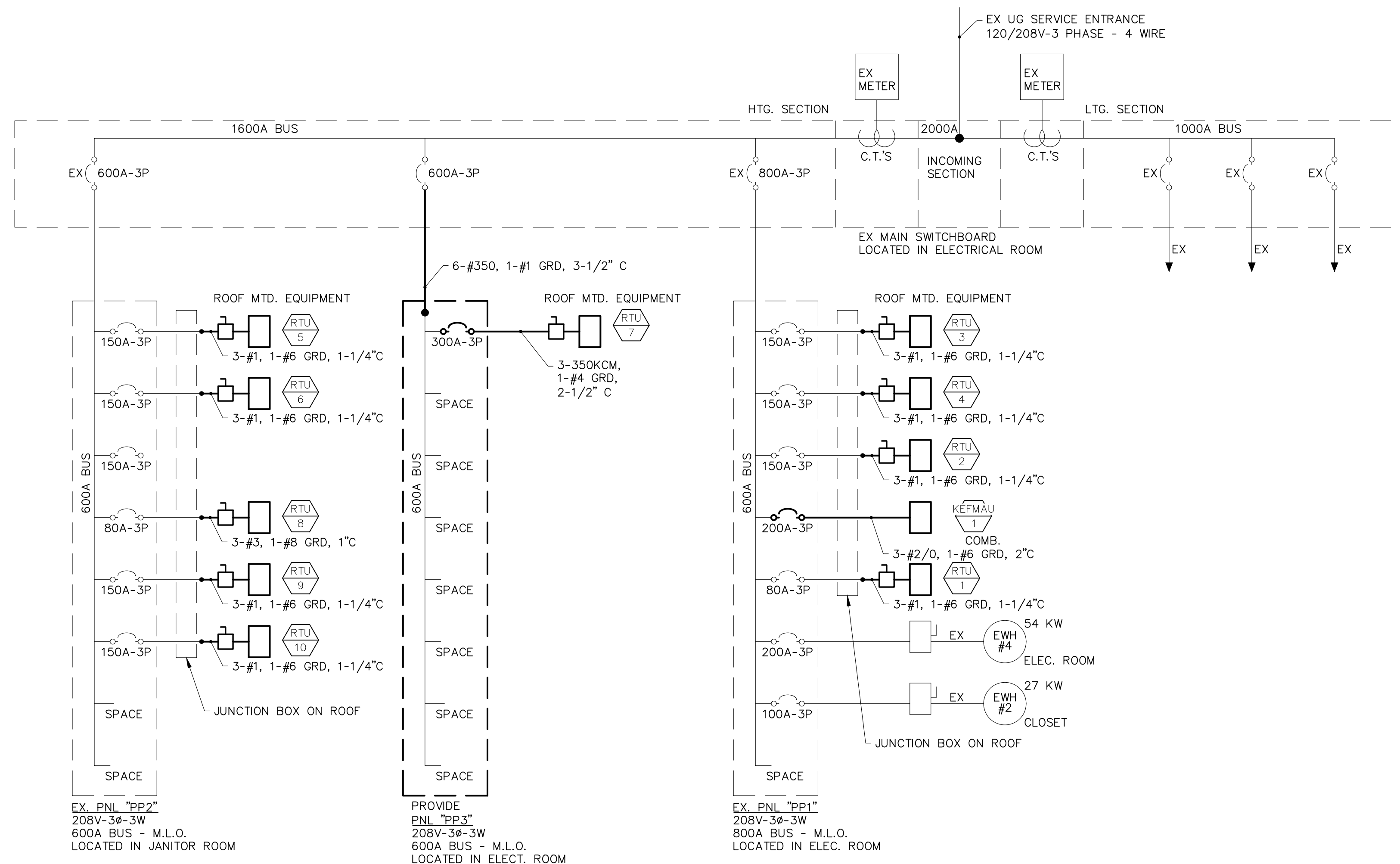
SHEET NUMBER:

E-104

13 OF 15 SHEETS
08/19/2022



PARTIAL FLOOR PLAN - ELEC ROOM
SCALE: 1/4"=1'-0"

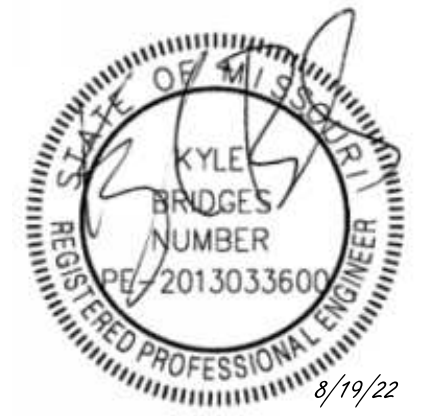


ONE-LINE RISER DIAGRAM

N.T.S.

TAG	DESCRIPTION	MOTOR DATA				MOTOR STARTER			DISCONNECT SWITCH			REMARKS
		HORSEPOWER	VOLTAGE	PHASE	FLA	SIZE	POLES	TYPE	SIZE	LOCATION	BREAKER/FUSE AMPS	
RTU-1	KITCHEN AREA RTU	-	208	3	49	-	3	PWCP	100/3	AT UNIT	70	-
RTU-2	HOME CARE CLASSROOMS RTU	-	208	3	53	-	3	PWCP	100/3	AT UNIT	70	-
RTU-3	CLASSROOMS RTU	-	208	3	49	-	3	PWCP	100/3	AT UNIT	70	-
RTU-4	CLASSROOMS RTU	-	208	3	49	-	3	PWCP	100/3	AT UNIT	70	-
RTU-5	CLASSROOMS RTU	-	208	3	49	-	3	PWCP	100/3	AT UNIT	70	-
RTU-6	ADMINISTRATION AREA RTU	-	208	3	49	-	3	PWCP	100/3	AT UNIT	70	-
RTU-7	CAFETERIA AREA VENT UNIT	-	208	3	261	-	3	PWCP	400/3	AT UNIT	300	-
RTU-8	GYMNASIUM AREA RTU	-	208	3	49	-	3	PWCP	100/3	AT UNIT	70	-
RTU-9	CLASSROOMS RTU	-	208	3	49	-	3	PWCP	100/3	AT UNIT	70	-
RTU-10	CLASSROOMS RTU	-	208	3	49	-	3	PWCP	100/3	AT UNIT	70	-
KEFMAU-1	KITCHEN EXHAUST & MAU	-	208	3	150	-	3	PWCP	FURNISHED W/UNIT		-	-

NOTES:
COORDINATE EQUIPMENT MCA, FLA, AND MOP WITH ACTUAL PURCHASED EQUIPMENT



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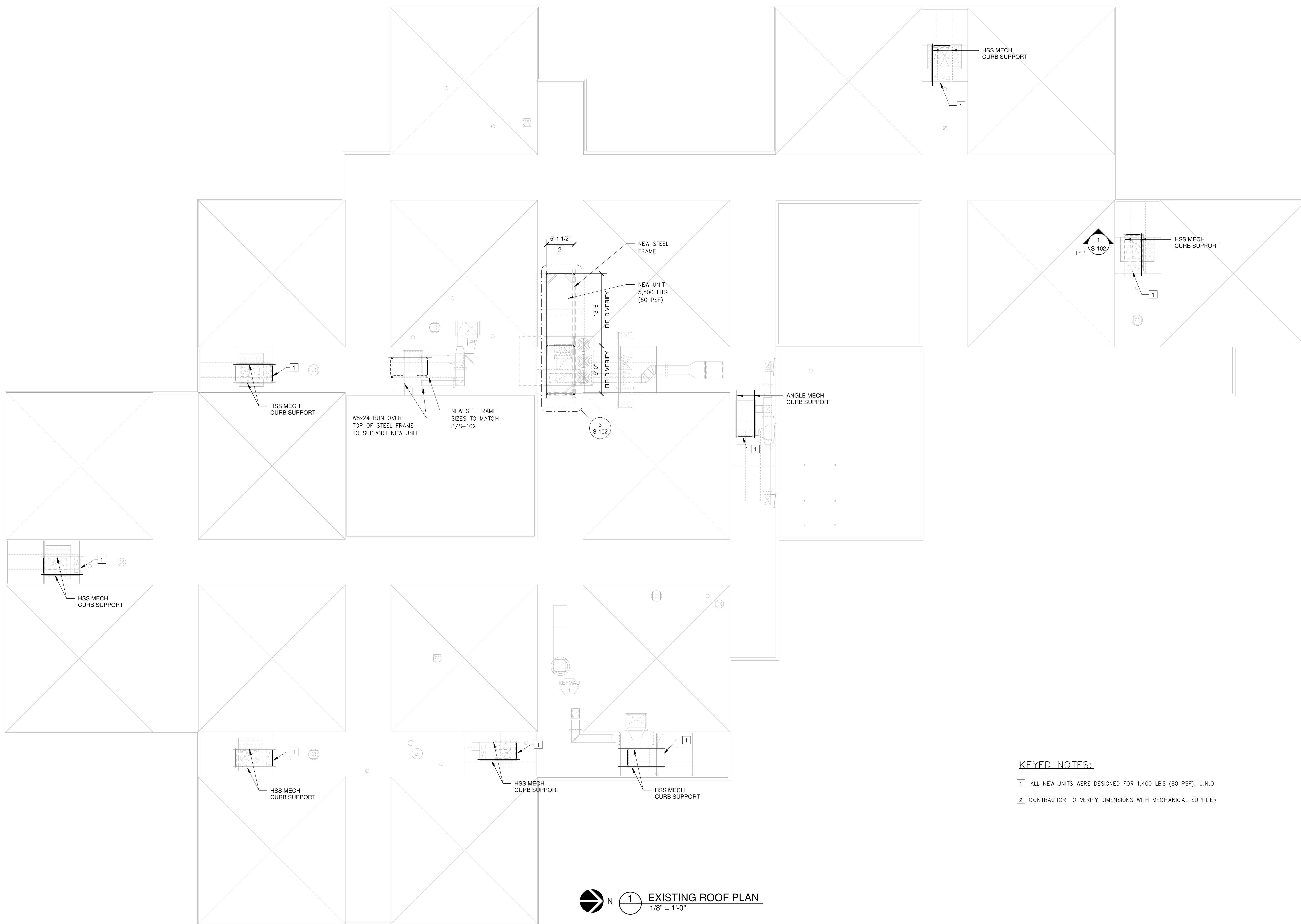
E1904-01-2411-
CAD DWG FILE: 30011-S-101.dwg
DRAWN BY: DKB
CHECKED BY: CAW
DESIGNED BY: DKB

SHEET TITLE:

**STRUCTURAL
ROOF PLAN**

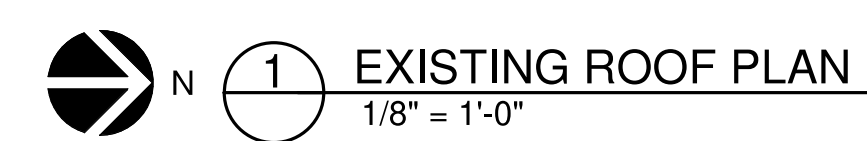
SHEET NUMBER:

S-101



KEYED NOTES:

- 1 ALL NEW UNITS WERE DESIGNED FOR 1,400 LBS (80 PSF), U.N.O.
- 2 CONTRACTOR TO VERIFY DIMENSIONS WITH MECHANICAL SUPPLIER



STRUCTURAL DESIGN CRITERIA

PER INTERNATIONAL BUILDING CODE (IBC 2012)

4. ROOF LOADS:
 DEAD LOAD:
 2X6 SOLID TIMBER DECKING: 2.5 PSF
 MECH/ELEC: 4 PSF
- LIVE LOAD:
 ROOF: 20 PSF (UNREDUCIBLE)
 UNIT: VARIES SEE PLAN

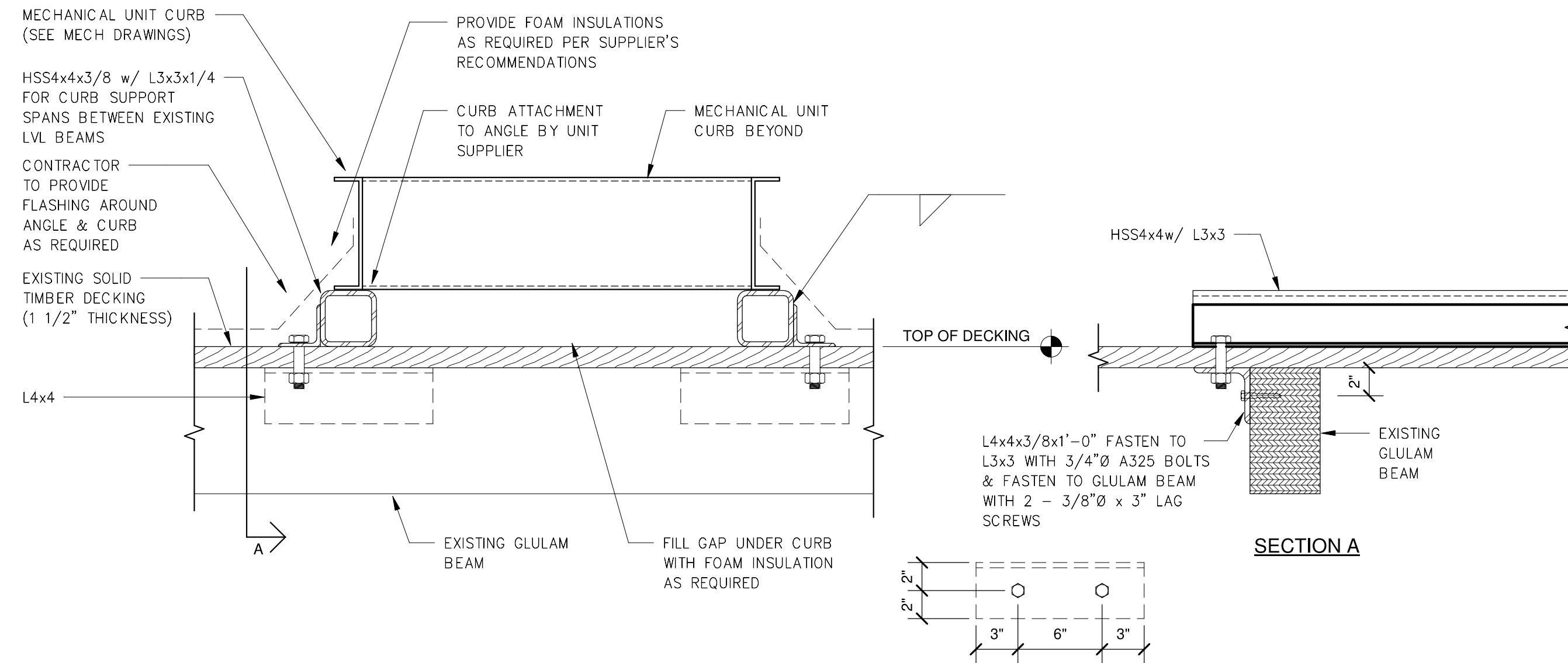
EXISTING CONSTRUCTION

1. BEFORE FABRICATION AND ERECTION OF ANY MATERIALS, FIELD VERIFY ALL EXISTING ELEVATIONS, DIMENSIONS, AND CONDITIONS AS SHOWN ON THE DRAWINGS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT & ENGINEER OF RECORD AT ONCE.

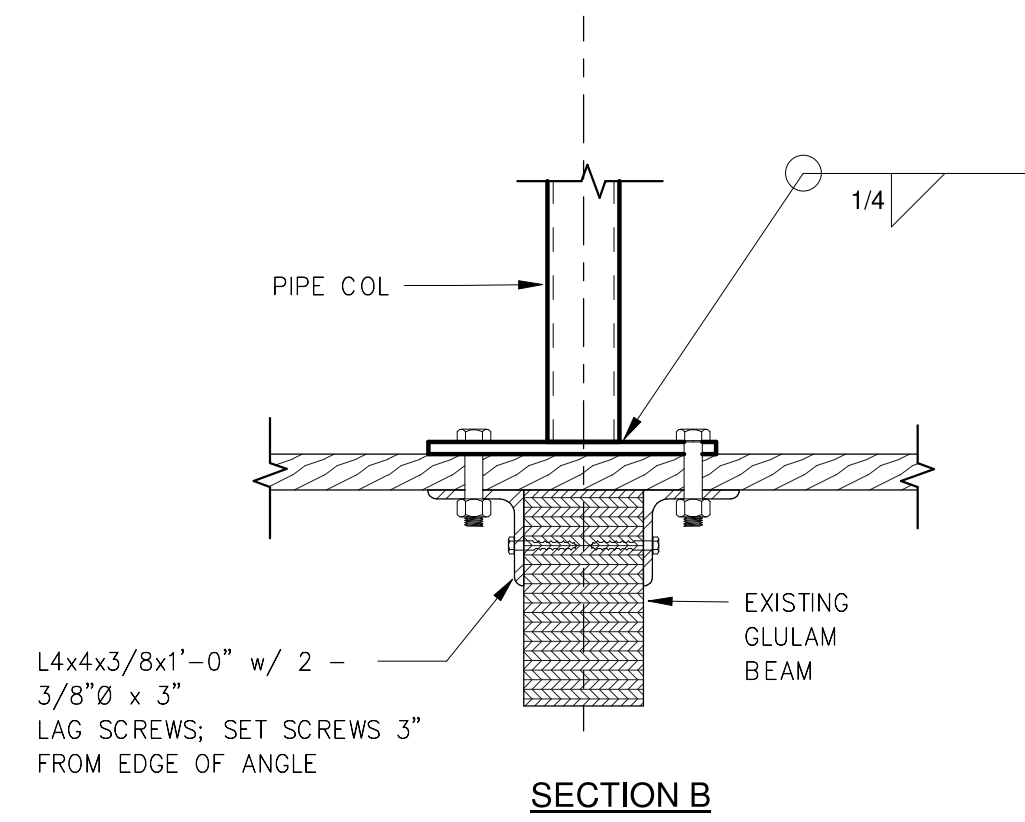
GENERAL INFORMATION

- PERMANENT STABILITY OF THE BUILDING AND COMPONENTS IS NOT PROVIDED UNTIL THE ERECTION IS COMPLETED AS SHOWN ON THE CONTRACT DRAWINGS. PER SECT 7.10.3 OF AISC CODE OF STANDARD PRACTICE FOR BUILDINGS AND BRIDGES MARCH 18, 2005, "TEMPORARY SUPPORTS, SUCH AS TEMPORARY GUYS, BRACES, FALSEWORK, CRIBBING OR OTHER ELEMENTS REQUIRED FOR THE ERECTION OPERATION WILL BE DETERMINED, FURNISHED AND INSTALLED BY THE ERECTOR."
- THE CONTRACTOR SHALL INSURE THAT NO CONSTRUCTION LOAD EXCEEDS THE DESIGN LIVE LOADS INDICATED ON THE STRUCTURAL DRAWINGS AND THAT THESE LOADS ARE NOT PLACED ON THE STRUCTURAL MEMBERS PRIOR TO THE TIME THAT ALL FRAMING MEMBERS AND THEIR CONNECTIONS ARE IN PLACE.
- PRIOR TO FABRICATION AND/OR ERECTION OF ANY MATERIALS, THE CONTRACTOR SHALL FIELD VERIFY ALL PERTINENT EXISTING DIMENSIONS, ELEVATIONS, AND CONDITIONS AND SHALL REPORT ANY DISCREPANCIES TO THE STRUCTURAL ENGINEER OF RECORD OR THE ARCHITECT IMMEDIATELY UPON DISCOVERY.
- REFERENCE TO STANDARD SPECIFICATIONS OF ANY TECHNICAL SOCIETY, ORGANIZATION OR ASSOCIATION OR TO CODES OF LOCAL OR STATE AUTHORITIES SHALL MEAN THE LATEST STANDARD, CODE, SPECIFICATION OR TENTATIVE SPECIFICATION ADOPTED AND PUBLISHED AT THE DATE OF TAKING BIDS UNLESS SPECIFICALLY STATED OTHERWISE.
- UNLESS SPECIFICALLY NOTED OTHERWISE, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH AISC SPECIFICATIONS, LATEST EDITION.
- ALL STRUCTURAL STEEL HSS SQUARE/RECT SECTIONS SHALL BE ASTM A500, GRADE B (Fy=46 ksi). ALL STRUCTURAL STEEL WIDE FLANGE SHALL BE ASTM A992 GRADE 50, CHANNEL SHAPES AND ALL OTHER MISCELLANEOUS STEEL SHALL BE ASTM A36 OR A572. ALL STRUCTURAL STEEL HSS ROUND SHALL BE ASTM A500, GRADE B (Fy=42 ksi). ALL BASE PLATES SHALL BE ASTM A572-50.
- ALL STRUCTURAL BOLTS CONNECTING STRUCTURAL STEEL SHALL BE ASTM A325 TYPE 1 WITH THREADS ALLOWED IN THE SHEAR PLANE, EXCEPT ANCHOR BOLTS SHALL BE ASTM F1554 GR55, MUST MEET S1 WELDABILITY REQUIREMENT OR GR36 AS NOTED.
- WELD ELECTRODES SHALL BE E70XX.
- DO NOT WELD BOTTOM FLANGE BRACES UNTIL ALL ROOF DEAD LOADS ARE IN PLACE.
- AT HSS BEAM CONNECTION TO WIDE FLANGE OR HSS COLUMNS, WELD ALL AROUND WITH A COMBINATION OF 3/16" FILLET & FLARE BEVEL GROOVE WELDS (UNLESS NOTED OTHERWISE.)
- UNLESS DETAILED OTHERWISE OR REACTIONS ARE INDICATED, BEAM CONNECTIONS SHALL BE SELECTED TO SUPPORT 70% THE TOTAL UNIFORM LOAD CAPACITY SHOWN IN THE "ALLOWABLE UNIFORM LOAD TABLES" IN PART 2 OF THE AISC STEEL CONSTRUCTION MANUAL, LATEST EDITION, FOR THE GIVEN BEAM SIZE, SPAN, AND STEEL SPECIFICATION OR FOR THE BEAM REACTION SHOWN ON THE DRAWINGS, WHICHEVER IS GREATER. THE MINIMUM BEAM CONNECTION SHALL NOT BE SMALLER THAN THOSE LISTED IN TABLES 10-1 & 10-2 OF THE AISC STEEL CONSTRUCTION MANUAL, LATEST EDITION FOR THE GIVEN BEAM DEPTH, BOLT DIAMETER, AND WELD SPECIFICATION.
- UNLESS OTHERWISE INDICATED, BEAM REACTIONS SHOWN ON THE PLANS ARE DESIGN SERVICE LEVEL (ASD) GRAVITY (DEAD LOAD PLUS LIVE LOAD) SHEAR LOADS. ANY AXIAL OR OTHER LOADS REQUIRED MUST BE CONSIDERED IN ADDITION TO THE VERTICAL REACTIONS SHOWN.
- THE MINIMUM DESIGN LOAD FOR ANY CONNECTION SHALL BE SIX (6) KIPS (ASD) OR TEN (10) KIPS (LRFD) REGARDLESS OF THE BEAMS REACTION(S) SHOWN ON THE PLANS.
- UNLESS DETAILED OTHERWISE, ALL SHOP CONNECTIONS SHALL BE WELDED. UNLESS DETAILED OTHERWISE, ALL FIELD CONNECTIONS SHALL BE MADE USING 3/4"Ø, AND 1"Ø WHERE INDICATED, ASTM A325-N (OR ASTM F1852) HIGH STRENGTH BOLTS ("N" INDICATES BEARING TYPE WITH THREADS INCLUDED IN SHEAR PLANE). WASHERS SHALL BE INSTALLED UNDER NUTS WHEN REQUIRED BY THE SPECIFICATIONS OF STRUCTURAL JOINTS.
- WHERE FIELD AND SHOP WELDS ARE INDICATED ON THE DRAWINGS, THEY SHALL BE THE SIZE AND TYPE NOTED. ALL WELDING OF STRUCTURAL STEEL SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF AWS D1.1 CORRESPONDING TO THE AISC SPECIFICATION USED AND ALL WELDS INCLUDING FIELD WELDS SHALL BE MADE BY CERTIFIED WELDERS USING E70XX ELECTRODES.
- HIGH STRENGTH BOLTS (3/4"Ø, AND 1"Ø, ASTM A325-N (OR ASTM F1852) SHALL BE TIGHTENED TO PROVIDE, WHEN ALL BOLTS IN THE JOINT ARE TIGHT, A MINIMUM BOLT TENSION OF 28(k) FOR 3/4"Ø BOLTS & 51(k) FOR 1"Ø BOLTS. ONE OF THE FOLLOW METHODS SHALL BE USED:
 - MANUAL TORQUE WRENCHES WITH TORQUE INDICATION SET TO GIVE THE CORRECT TENSION.
 - POWER WRENCHES ADJUSTED TO STALL OR CUT-OUT AT THE CORRECT TENSION.
 - MANUAL WRENCHES USING THE "TURN-OF-NUT" METHOD OF ASSURING THE CORRECT BOLT TENSION.
 - DIRECT-TENSION INDICATORS
 UNLESS SPECIFICALLY NOTED OTHERWISE, ALL HIGH-STRENGTH BOLTS (A325, F1852, AND A490) AND TWIST OFF BOLTS SHALL BE PRE-TENSIONED TO MEET SLIP-CRITICAL REQUIREMENTS EVEN IF THE JOINT IS DESIGNED AS A "SNUG-TIGHT" BEARING CONNECTION. ALL JOINTS SHALL BE DESIGNED TO BE BEARING TYPE CONNECTIONS UNLESS NOTED OTHERWISE.
- ALL STEEL MEMBERS EXPOSED TO WEATHER SHALL BE HOT-DIPPED GALV. (INCLUDING MASONRY SUPPORT LINTELS). GALVANIZED OR PAINTED WITH TNEMEC EPOXY SYSTEM OR SIMILAR SYSTEM MEETING THE REQUIREMENTS FOR PAINTING STRUCTURAL STEEL IN THE PROJECT SPECIFICATIONS. ALL OTHER STEEL MEMBERS SHALL BE FURNISHED WITH A SHOP COAT OF TNEMEC RED OR GRAY OXIDE PRIMER OR SIMILAR SYSTEM MEETING THE REQUIREMENTS FOR PAINTING STRUCTURAL STEEL IN THE PROJECT SPECIFICATIONS. ALL PRIMERS SHALL BE COMPATIBLE WITH TOP COATINGS SPECIFIED.
- BEARING ENDS OF ALL COLUMNS SHALL BE SQUARE CUT.
- FIELD CUTTING, DRILLING, OR OTHER MODIFICATION OF STRUCTURAL STEEL COMPONENTS IS NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD. WHERE BEAM PENETRATIONS CANNOT BE AVOIDED OR WHERE CUTTING IS REQUIRED, THE CONTRACTOR SHALL SUBMIT, TO THE STRUCTURAL ENGINEER OF RECORD, ALL PERTINENT INFORMATION INCLUDING PENETRATION SHAPE, SIZE, LOCATION, AND METHOD OF CUTTING THE OPENINGS.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCLUDING THE COSTS FOR ALL MISCELLANEOUS STEEL IN THEIR BID REGARDLESS OF WHETHER OR NOT THOSE ITEMS ARE INDICATED ON THE STRUCTURAL DRAWINGS. THESE COSTS SHALL INCLUDE, BUT ARE NOT LIMITED TO, MISCELLANEOUS STEEL ITEMS SHOWN ON ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS.
- SUBMIT STEEL SHOP DRAWINGS FOR APPROVAL.

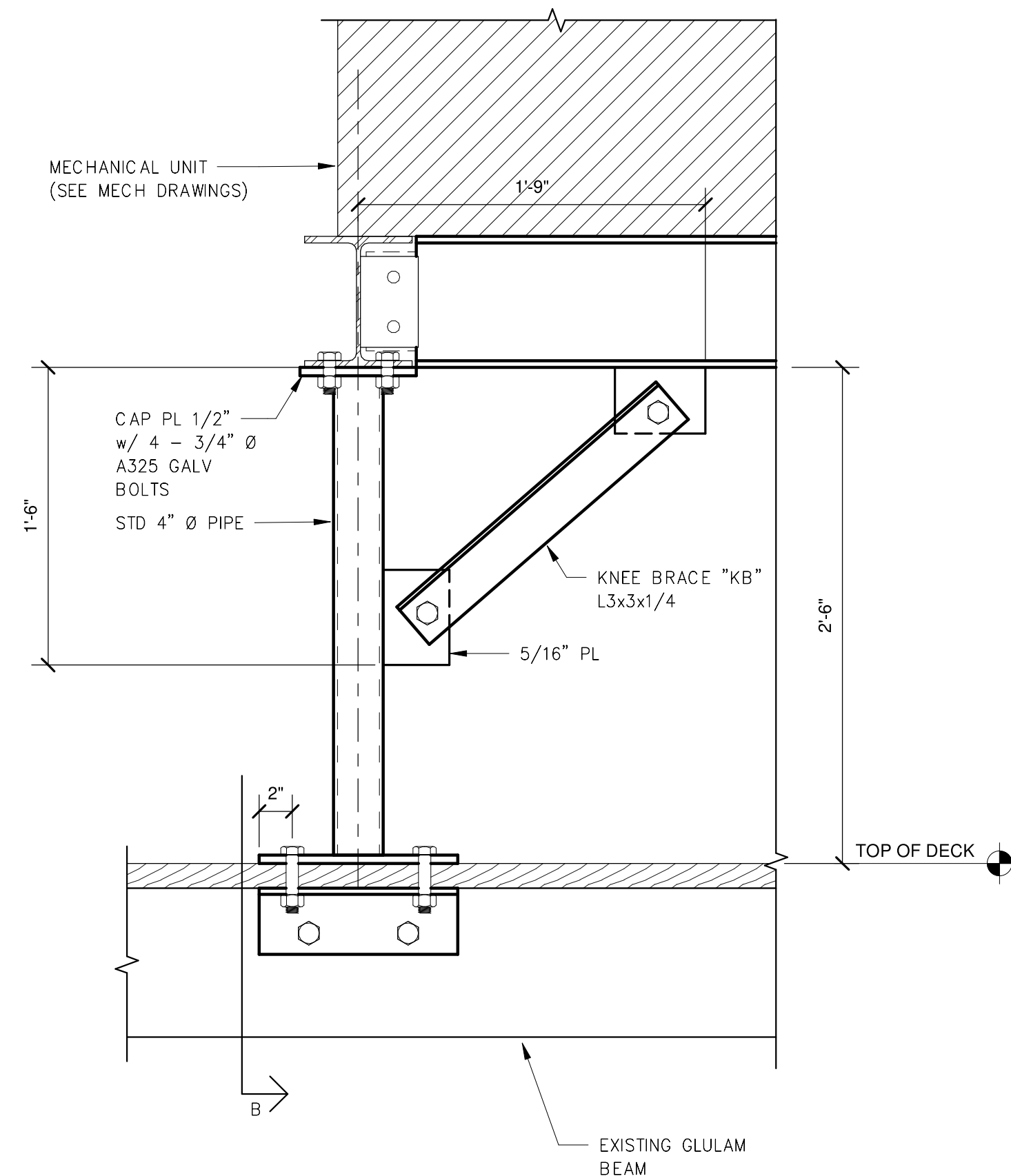
STEEL FRAMING NOTES



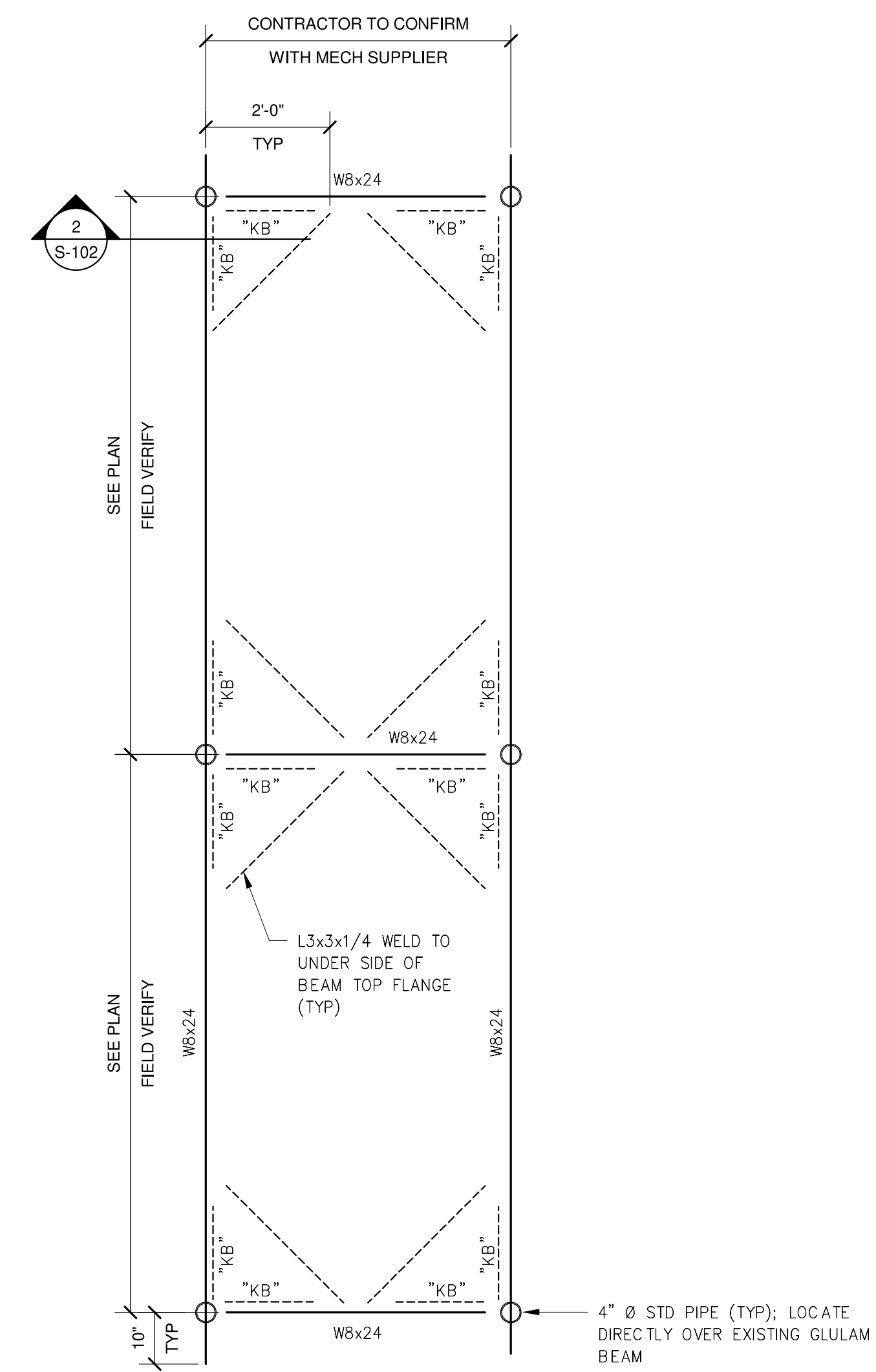
1 UNIT CURB SUPPORT DETAIL
 1 1/2" = 1'-0"



SECTION B

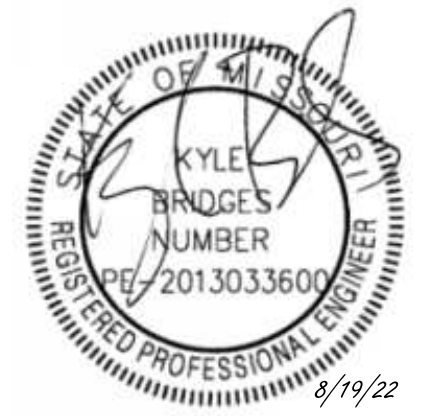


2 UNIT SUPPORT DETAIL
 1 1/2" = 1'-0"



3 STEEL FRAME UNIT PLAN
 1/2" = 1'-0"

STATE OF MISSOURI
 MICHAEL L. PARSON,
 GOVERNOR



Bernhard TME
 Engineering

622 Emerson Road, Suite 250
 St. Louis, MO 63141 • 314-727-8760
 MO Certificate of Authority No. 2009021478

OFFICE OF ADMINISTRATION
 DIVISION OF FACILITIES
 MANAGEMENT,
 DESIGN AND CONSTRUCTION

DEPARTMENT OF
 ELEMENTARY AND
 SECONDARY EDUCATION
 PARKVIEW STATE SCHOOL
 REPLACE ROOFTOP UNITS

PARKVIEW STATE SCHOOL
 1020 S. PARKWAY STREET
 CAPE GIRARDEAU, MO 63703

PROJECT # E1904-01
 SITE # 2029
 FACILITY # 5012029003

REVISION:
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 ISSUE DATE: 08/19/2022

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 CHECKED BY: CAW
 DESIGNED BY: DKB

SHEET TITLE:
**STRUCTURAL
 NOTES &
 DETAILS**

SHEET NUMBER:

S-102

15 OF 15 SHEETS
 08/19/2022