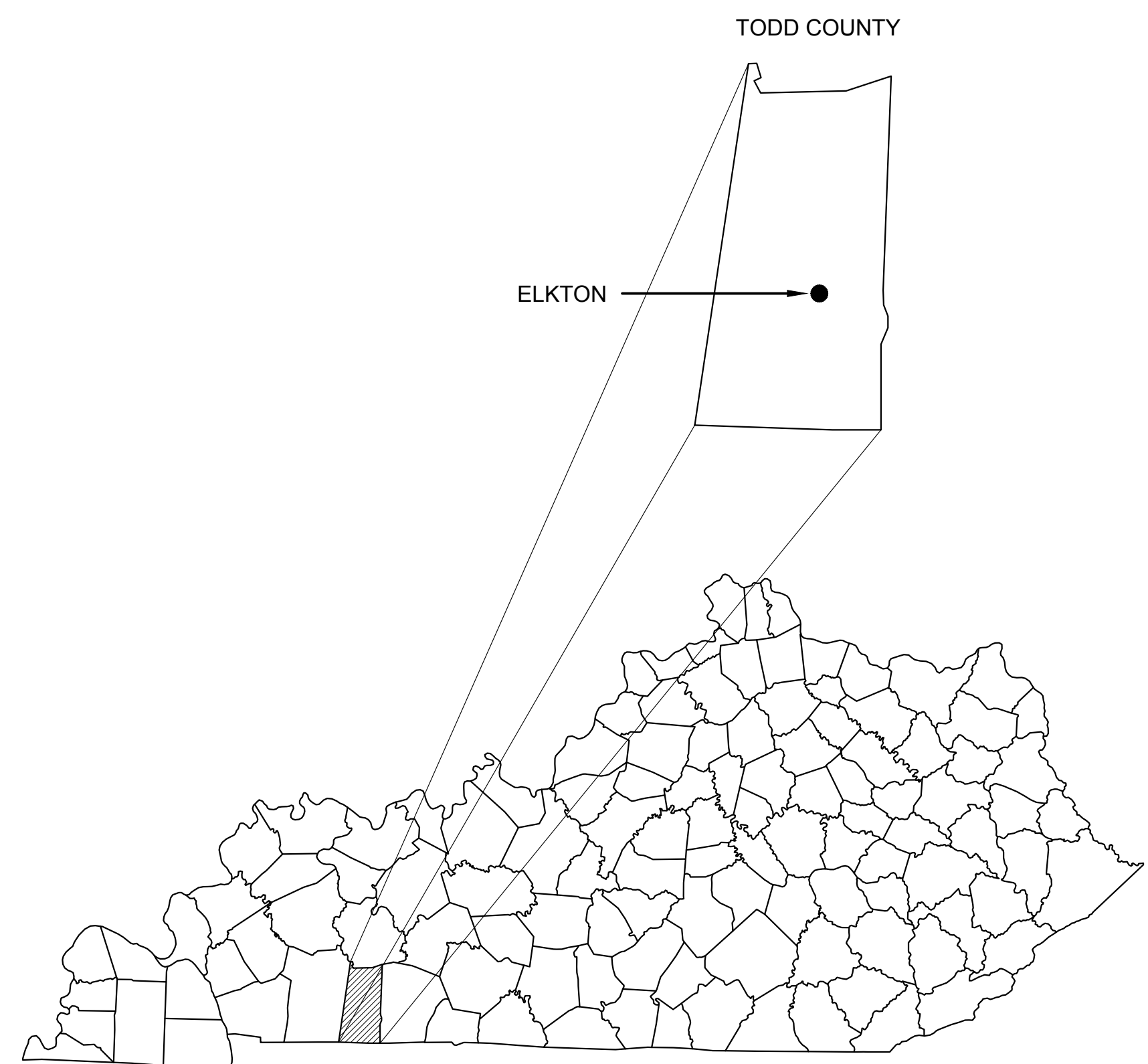


TODD COUNTY SCHOOLS MISC. HVAC RENOVATION 2016

CITY OF ELKTON, KENTUCKY



BG 16-173

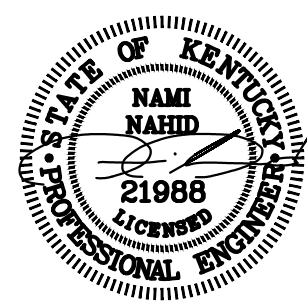
TODD COUNTY PUBLIC SCHOOLS

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ELKTON, KENTUCKY 42220

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BOARD OF EDUCATION

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BOARD MEMBER	MATT PERRY



MAY 27, 2016

NORTH TODD COUNTY ELEMENTARY SCHOOL 515 W MAIN ST., ELKTON, KY 42220

DRAWING INDEX:

COVER	COVER SHEET
M1.0	MECHANICAL DEMO PLAN
M1.1	MECHANICAL FLOOR PLAN
M1.2	MECHANICAL FLOOR PLAN
M1.3	MECHANICAL ROOM PLAN
M1.4	MECHANICAL ROOF PLAN
M1.5	MECHANICAL SCHEDULES AND DETAILS
M1.6	MECHANICAL SCHEDULES AND DETAILS
E1.0	ELECTRICAL DEMO PLAN
E1.1	ELECTRICAL FLOOR PLAN
E1.2	ELECTRICAL FLOOR PLAN

SOUTH TODD COUNTY ELEMENTARY SCHOOL 4115 GUTHRIE RD., GUTHRIE, KY 42234

DRAWING INDEX:

M2.0	MECHANICAL DEMO PLAN
M2.1	MECHANICAL FLOOR PLAN
M2.2	MECHANICAL FLOOR PLAN
M2.3	MECHANICAL ROOM PLAN
M2.4	MECHANICAL ROOF PLAN
M2.5	MECHANICAL REFRIGERATION PLAN
M2.6	MECHANICAL SCHEDULES AND DETAILS
E2.0	ELECTRICAL DEMO PLAN
E2.1	ELECTRICAL FLOOR PLAN
E2.2	ELECTRICAL FLOOR PLAN

TODD COUNTY MIDDLE SCHOOL 515 W. MAIN ST., ELKTON, KY 42220

DRAWING INDEX:

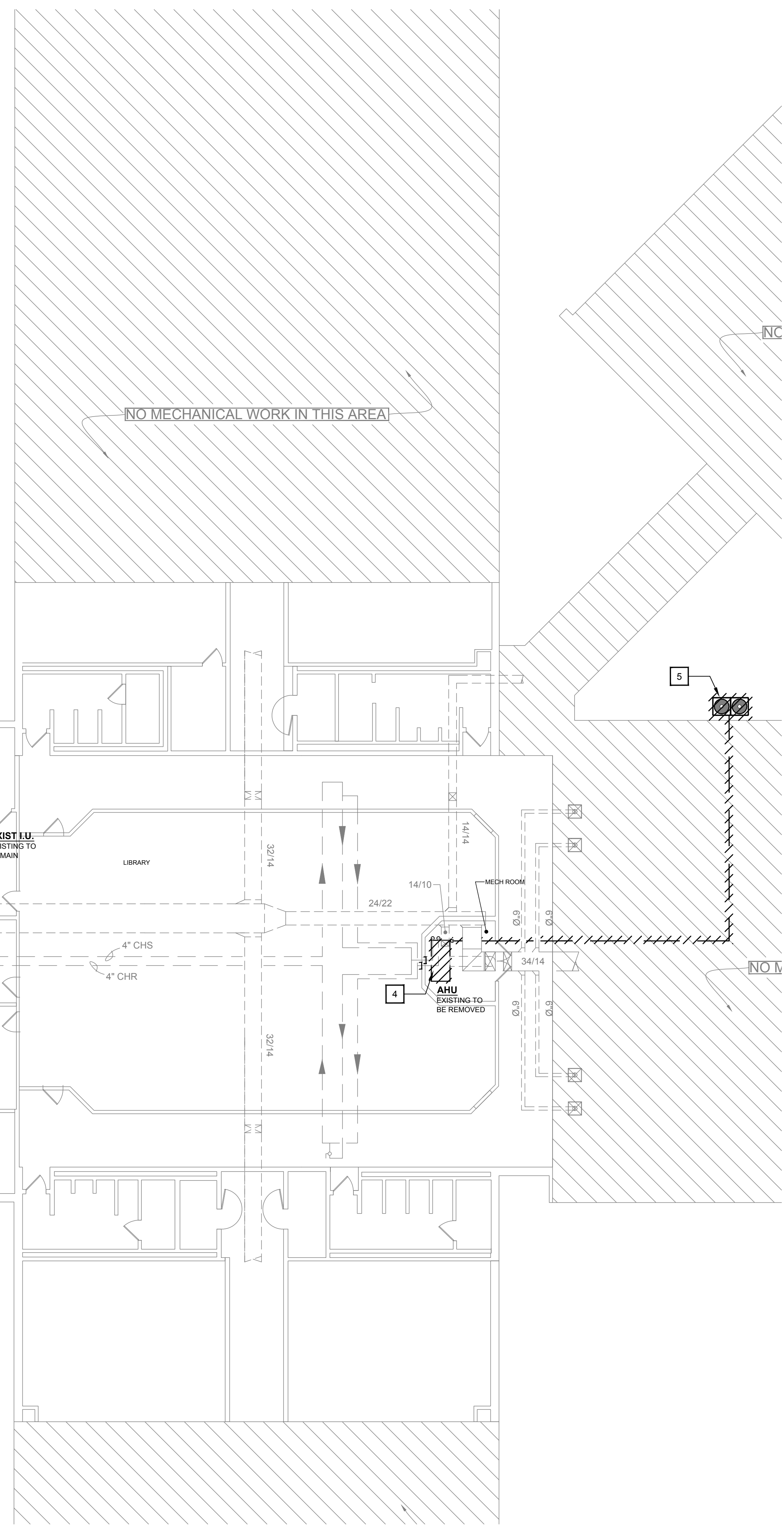
M3.0	MECHANICAL KEY PLAN
M3.1	WEST WING MECHANICAL PLAN
M3.2	CENTRAL WING MECHANICAL PLAN
M3.3	EAST WING MECHANICAL ROOM
M3.4	MECHANICAL SCHEDULES AND DETAILS
E3.0	ELECTRICAL DEMO PLAN
E3.1	ELECTRICAL FLOOR PLAN

TODD COUNTY CENTRAL HIGH SCHOOL 806 S. MAINST., ELKTON, KY 42220

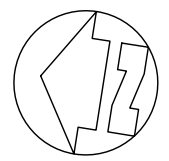
DRAWING INDEX:

M4.0	MECHANICAL DEMO PLAN
M4.1	MECHANICAL FLOOR PLAN
M4.2	MECHANICAL ROOF PLAN
M4.3	MECHANICAL ROOM PLAN
M4.4	MECHANICAL SCHEDULES
E4.0	ELECTRICAL DEMO PLAN
E4.1	ELECTRICAL FLOOR PLAN

S&R ENGINEERING NO. 8310-23

JO N

1. REMOVE EXISTING UNIT VENTILATOR WITH ASSOCIATED PIPING, PIPE COVER UP TO CEILING. POWER, WIRING, ETC. CAP PIPING ABOVE CEILING. EXISTING LOUVER TO REMAIN. SEAL WALL PENETRATION WITH DOUBLE LAYER OF SHEET METAL WITH 2" INSULATION BETWEEN. PAST SHEET METAL AND WALL WHERE PIPE COVER WAS REMOVED TO MATCH COLOR OF EXISTING WALLS. REPLACE CEILING TILE WHERE PIPING WAS REMOVED.
2. REMOVE EXISTING AIR HANDLING UNITS SERVING GYMNASIUM ABOVE CEILING WITH ALL PIPING AND DUCTWORK WHERE SHOWN. REMOVE PIPING, POWER, WIRING, CONTROLS, HANGERS ETC. REMOVE EXISTING LOUVER ON EXTERIOR WALL (NEW UNIT'S DUCTWORK WILL RUN THRU THIS OPENING). REPLACE EXISTING RETURN GRILL IN STAGE AREA. CAP WATER PIPING AT MAIN.
3. REMOVE EXISTING AIR HANDLING UNITS SERVING OFFICE AREA WITH ASSOCIATED PIPING, DUCTWORK, CEILING AIR DEVICES, POWER, CONTROLS, HANGERS, ETC. CAP PIPING AT MAIN. REMOVE EXISTING FRESH AIR DUCTWORK AND CAP DUCT AT MAIN. REMOVE SECONDARY REFRIGERANT PIPING WITH CONDENSING UNIT ON ROOF. SEE ROOF PLAN FOR ADDITIONAL DETAILS.
4. REMOVE VERTICAL AIR HANDLING UNIT SERVING MEDIA CENTER WITHIN MECHANICAL CLOSET AREA. REMOVE ASSOCIATED PIPING AND DUCTWORK AS INDICATED. EXISTING DUCTWORK TO BE RECONNECTED TO NEW UNIT INSTALLED WITHIN THIS ROOM.
5. REMOVE EXISTING CONDENSING UNIT WITH ASSOCIATED REFRIGERANT PIPING, POWER, WIRING, ETC.



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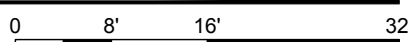
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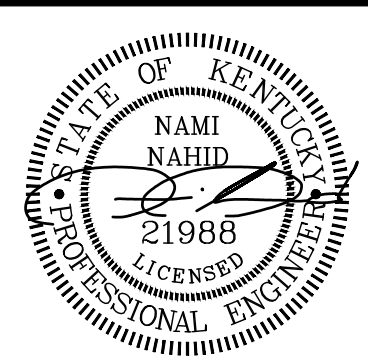
REVISIONS			
NO.	DESCRIPTION	DATE	BY
			NN DRAWN
			WR REVIEWED
			NN APPROVED

SHEET NO.

M-1.0

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





CONTRACT NO. 8310-23
CLIENT PROJECT NO. XXXX-XX
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2016 HVAC RENOVATION
ELKTON, KY

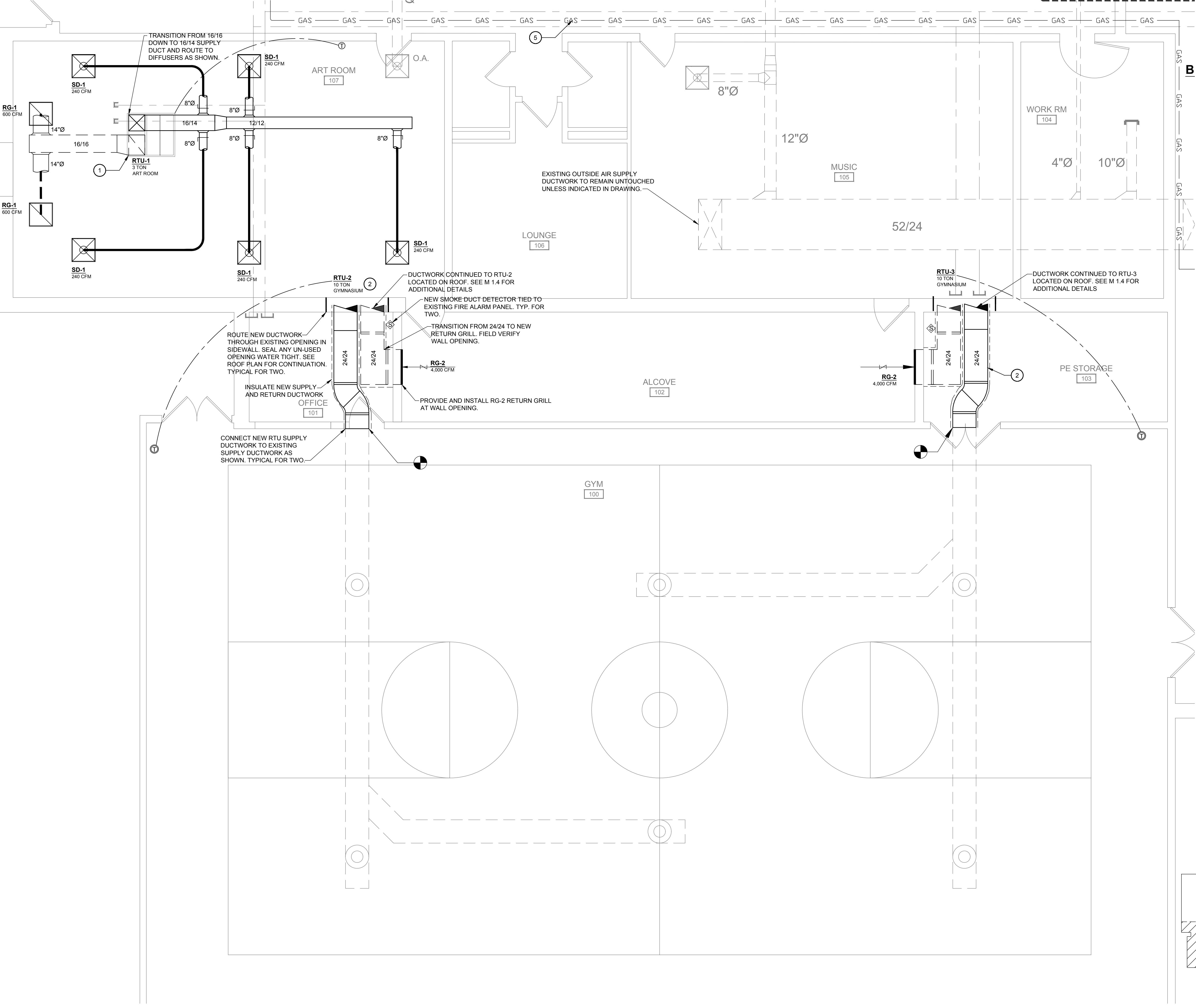
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								DRAWN
								WR
								REVIEWED
								NN
								APPROVED
SCALE CHECK					THIS MARK SHOULD MEASURE EXACTLY 1"			

DATE: MAR, 21, 2016
SCALE: SEE SHEET
SHEET NAME: MECHANICAL FLOOR PLAN
SHEET NO.

M1.1

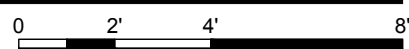
CONSTRUCTION NOTES:

1. PROVIDE AND INSTALL NEW ROOF TOP UNIT FOR ART ROOM. ROUTE NEW DUCTWORK AS SHOWN. SEE MECHANICAL ROOF PLAN FOR ADDITIONAL DETAILS.
2. PROVIDE AND INSTALL TWO NEW 10 TON ROOF TOP UNITS SERVING GYMNASIUM. ROUTE DUCTWORK ACROSS ROOF AND INSULATE WITH 2" INSULATION. ROUTE DUCTWORK UP TO EXISTING OPENING AS INDICATED. SEE MECH ROOF PLAN FOR ADDITIONAL DETAILS.

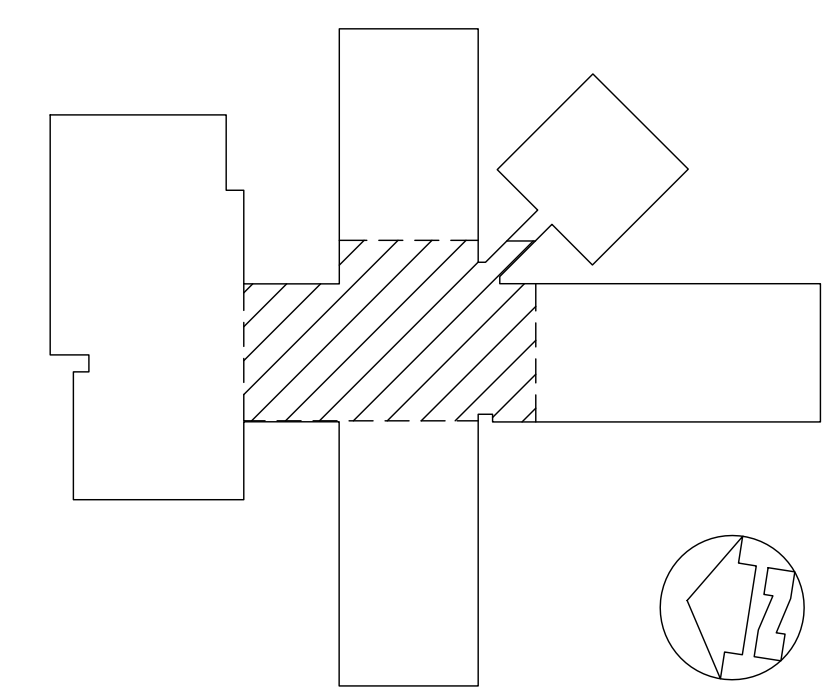


1 MECHANICAL PLAN - GYMNASIUM AND ART ROOM

SCALE: 1/4"=1'-0"



KEY PLAN



M1.2

NORTH TODD ELEMENTARY SCHOOL
2016 HVAC RENOVATION
ELKTON, KY

3. PROVIDE AND INSTALL NEW VRV SYSTEM IN ADMINISTRATION AREA. INSTALL CASSETTES INSIDE EXISTING CEILING GRID IN LOCATIONS INDICATED. ASSOCIATED CONDENSING UNIT TO BE MOUNTED ON ROOF. INSTALL UNIT ON 12" EOPT. RAILS. SEE MECH ROOF PLAN FOR ADDITIONAL DETAILS.
4. PROVIDE AND INSTALL NEW VERTICAL AHU UNIT IN MECHANICAL ROOM SERVING LIBRARY AND CONNECT TO EXISTING SUPPLY AND RETURN DUCT MAINS (FIELD VERIFY EACH UNITS MAIN LOCATIONS). CONNECT EXISTING AO DUCT TO RETURN DUCTWORK. TRANSITION FROM UNIT TO EACH MAIN, AS REQUIRED. INSTALL A 2" FLEX RUBBER CONNECTION WITH UNIT AT SUPPLY DUCTWORK. INSTALL VERTICAL INDORU UNITS ON 18" HIGH IRON STAND. RETURN DUCTWORK CONNECTION BELOW UNIT. INSTALL 2" FILTER HOUSING BELOW UNIT AT RETURN AIR WITH HINGED ACCESS DOOR, TYPICAL.
5. PROVIDE AND INSTALL NEW 3/4" NATURAL GAS LINE TO CONNECT TO NEW AHU SERVING LIBRARY.
6. PROVIDE AND INSTALL NEW CONDENSING UNIT SERVING LIBRARY. ROUTE NEW REFRIGERANT PIPING TO NEW VRV UNIT AS SHOWN.

REVISIONS					DESIGNED:
NO.	DESCRIPTION	DATE	BY		
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					WR
					REVIEWED:
					NN
					APPROVED:
					NN

DATE: MAR, 21, 2016

SCALE: SEE SHEET

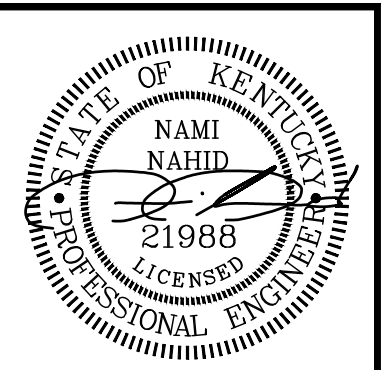
SHEET NAME: MECHANICAL FLOOR PLAN

SCALE CHECK: ☐ THIS MARK SHOULD MEASURE EXACTLY 1"

SHEET NO. _____

CLIENT PROJECT NO. XXXX-XX

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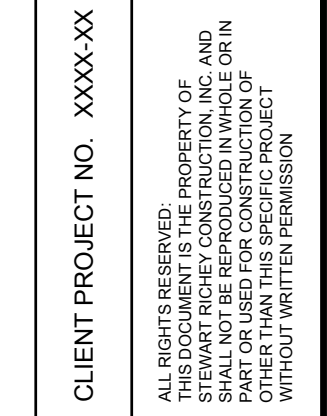


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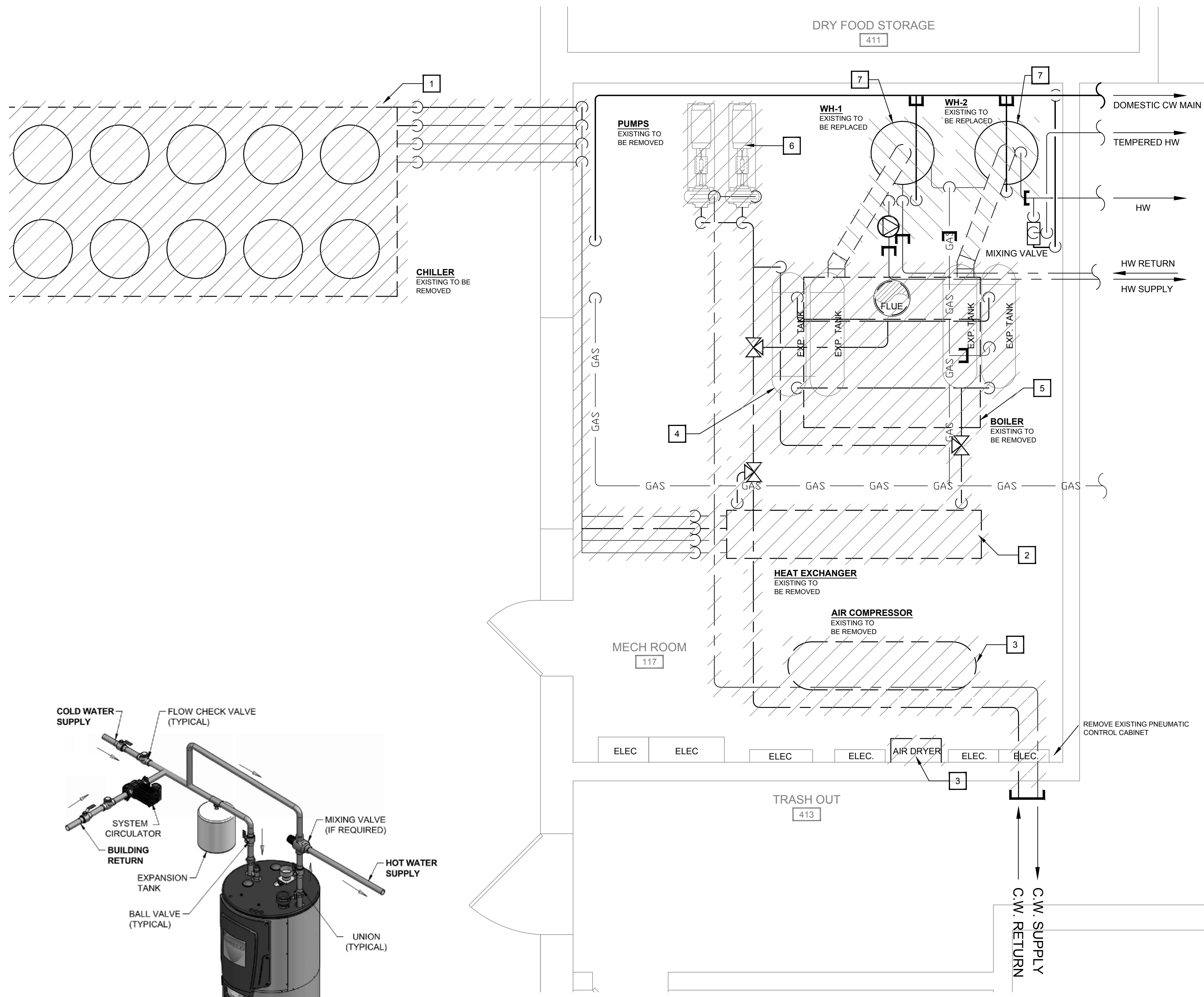
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NORTH TODD ELEMENTARY SCHOOL
2016 HVAC RENOVATION
ELKTON, KY

REVISIONS				DESIGNED
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				NRN
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SCALE CHECK			THIS MARK SHOULD MEASURE EXACTLY 1"	
				NRN

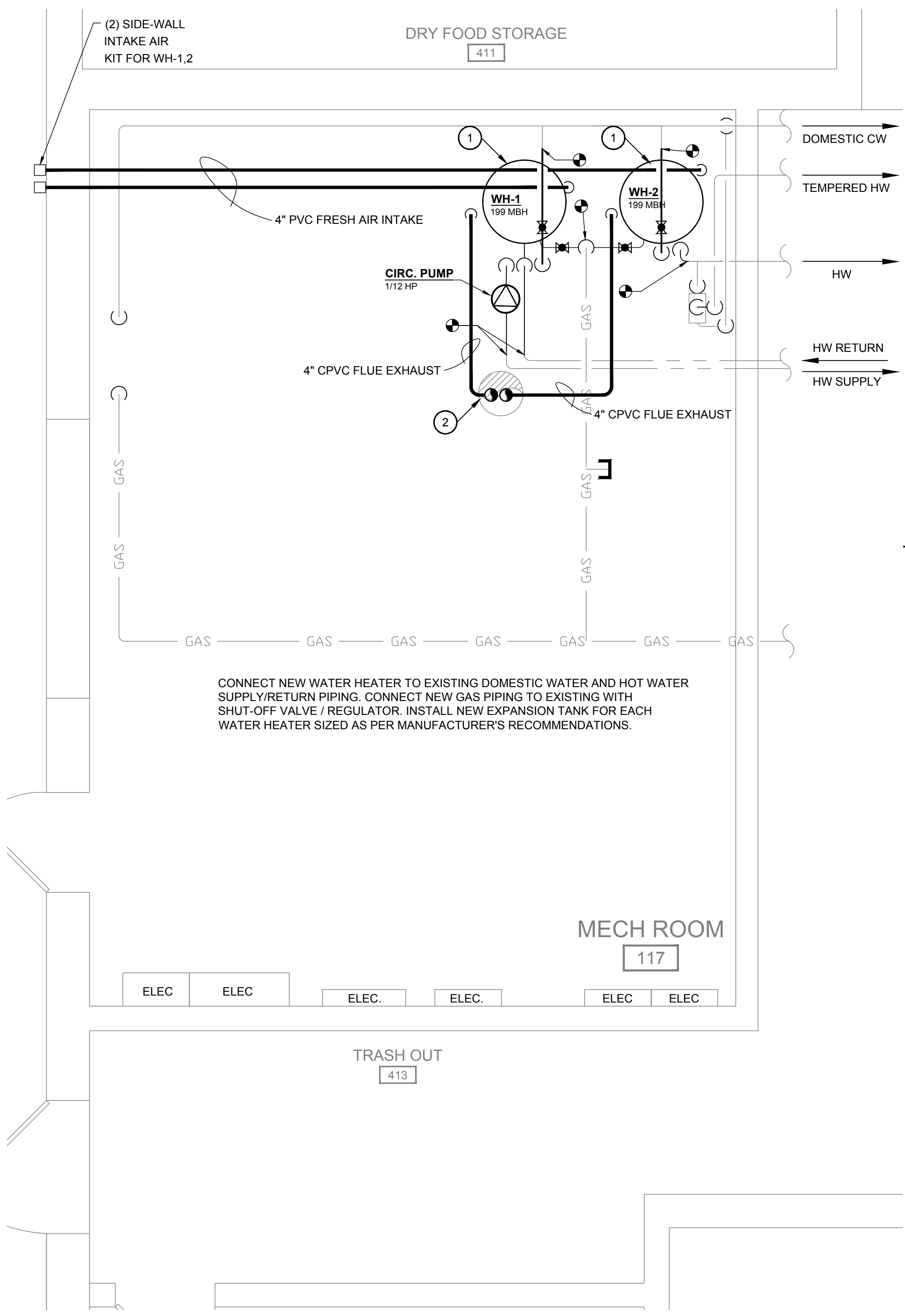
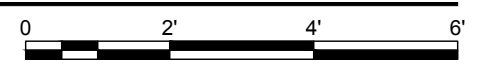
DATE: MAR, 21, 2016
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SHEET NAME: MECHANICAL ROOM PLAN
SHEET NO.

M1.3



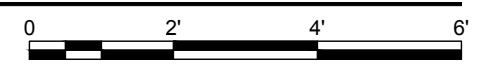
1 MECHANICAL ROOM DEMO PLAN

SCALE: 3/8"=1'-0"

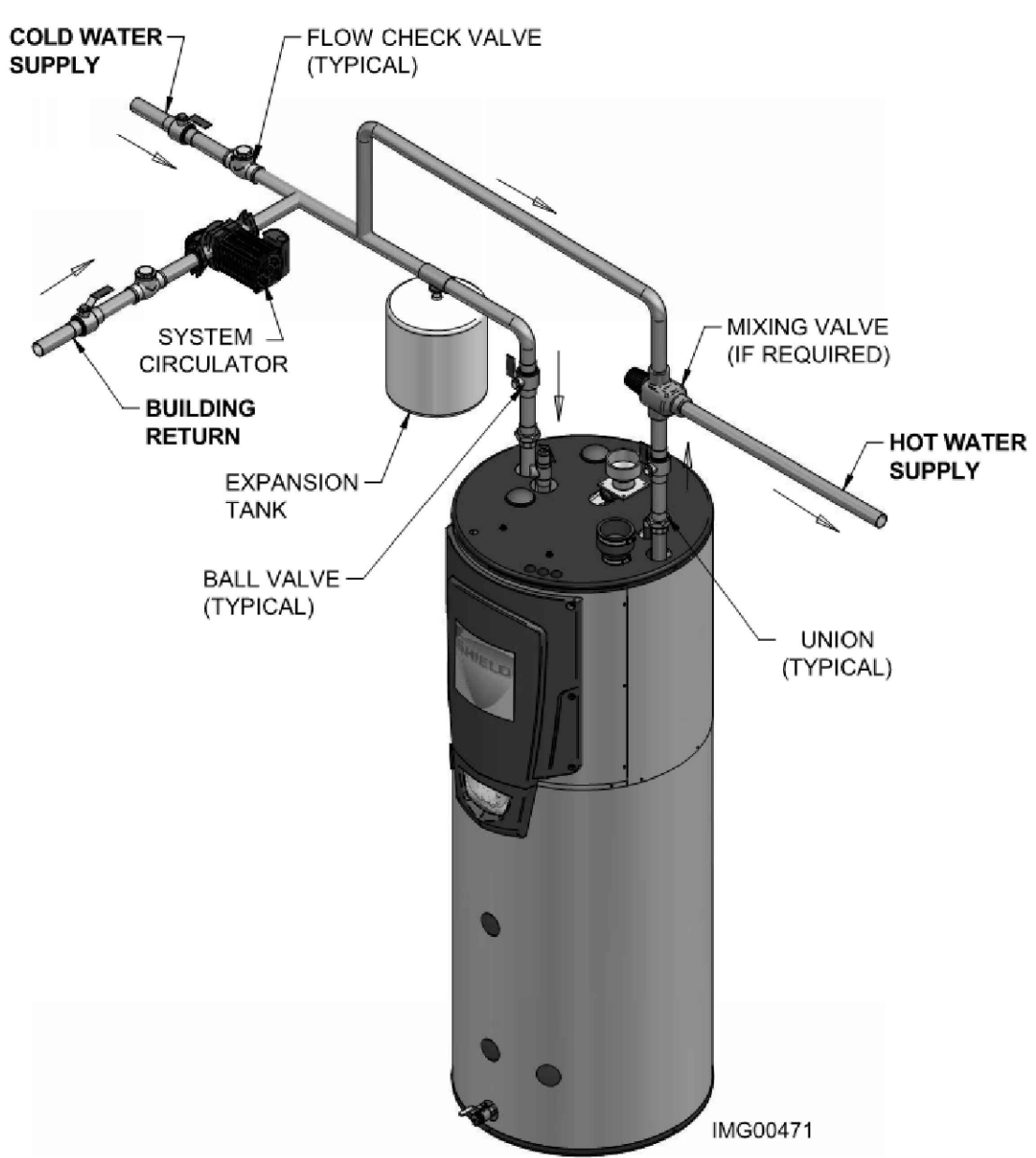


2 NEW MECHANICAL ROOM LAYOUT

SCALE: 3/8"=1'-0"

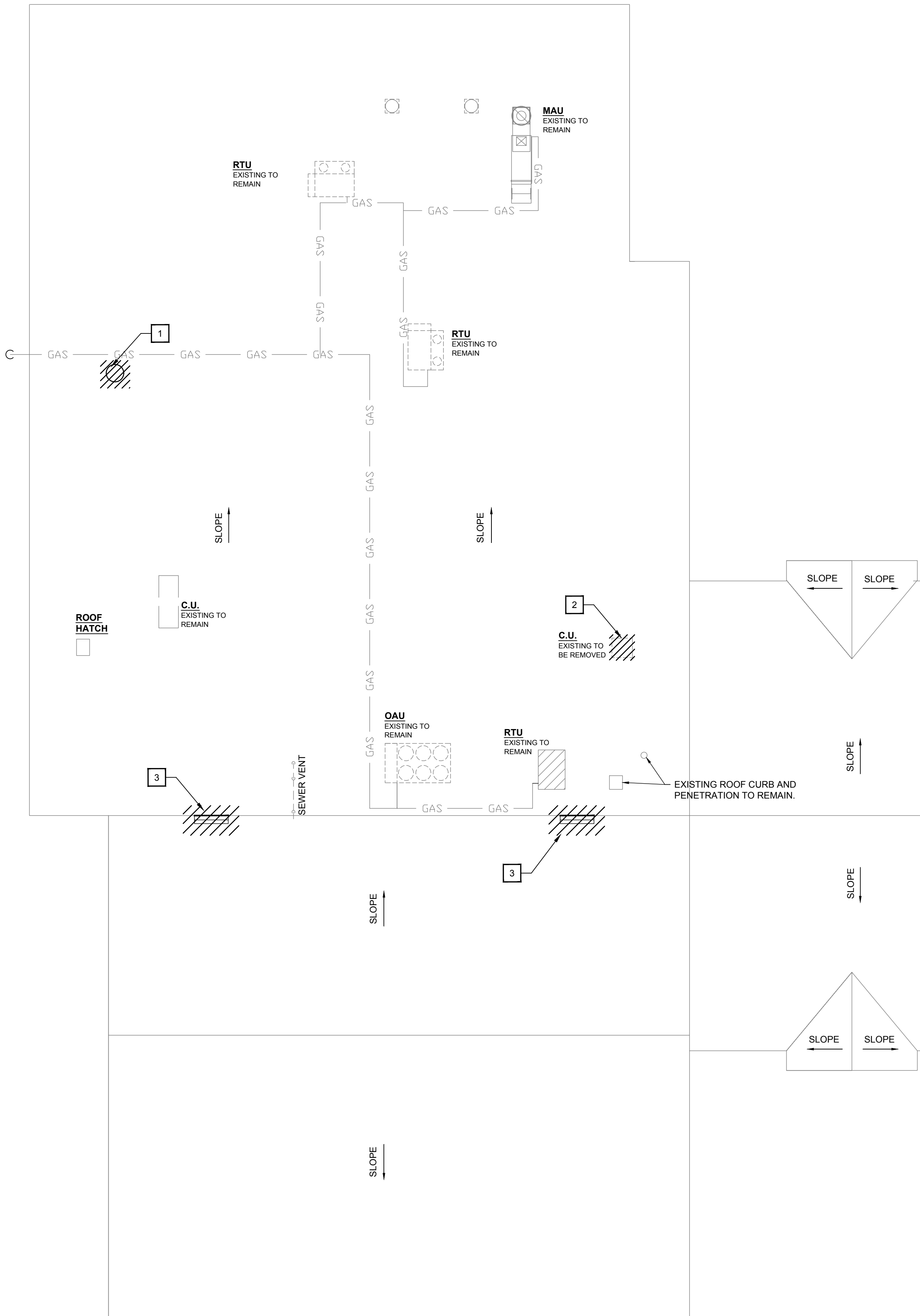


- ## # DEMO NOTES:
1. REMOVE EXISTING AIR COOLED CHILLER WITH ASSOCIATED PIPING, WIRING, POWER, ETC.. CAP ANY UTTERGROUND PIPING / CONDUIT PENETRATION INTO MECHANICAL ROOM AND GROUND LEVEL OUTSIDE. EXISTING CONCRETE PAD TO REMAIN.
 2. REMOVE EXISTING INTERIOR EVAPORATOR / CHILLER WITH ASSOCIATED REFRIGERANT PIPING, CHILLED WATER PIPING, WIRING, POWER, ETC. REMOVE ANY HANGERS AND CONCRETE PAD ASSOCIATED WITH EQPT.
 3. REMOVE EXISTING AIR COMPRESSOR / AIR DRYER WITH ASSOCIATED AIR PIPING, WIRING POWER, ETC. REMOVE ASSOCIATED CONCRETE PAD AND ALL HANGERS. CAP PIPE PENETRATIONS IN MECHANICAL ROOM.
 4. REMOVE EXISTING EXPANSION TANKS LOCATED ABOVE BOILER AND ANY ASSOCIATED PIPING, HANGERS, ETC.
 5. REMOVE EXISTING BOILER WITH FLUE, PIPING, CONTROLS, GAS, ETC. CAP GAS PIPING AT MAIN REMOVE CONCRETE PAD BELOW BOILER. FLUE PIPING TO BE COMPLETELY REMOVED. SEE WATER HEATER NOTE FOR ADDITIONAL DETAIL.
 6. REMOVE EXISTING PUMPS WITH ASSOCIATED PIPING, WIRING, POWER AND CONTROLS. REMOVE PUMP BASIN AND CONCRETE PAD.
 7. REMOVE EXISTING WATER HEATERS WITH ASSOCIATED FLUE ENTIRELY. INSTALL NEW FLUE / COMBUSTION AIR AS SHOWN. SEE NEW MECH ROOM PLAN FOR ADDITIONAL DETAILS.
- ## # CONSTRUCTION NOTES:
1. REPLACE EXISTING WATER HEATERS WITH NEW 199,000 BTU WATER HEATER. CONNECT TO EXISTING DOMESTIC WATER, HW SUPPLY, NATURAL GAS AND ELECTRICAL CONNECTIONS. PROVIDE AND INSTALL NEW CIRCULATING PUMP. SEE MECHANICAL SCHEDULE FOR MORE DETAILS. TYPICAL FOR TWO.
 2. INSTALL NEW ADAPTOR ROOF CURB OVER EXISTING ROOF FLUE PENETRATION. RUN NEW 4" CPVC THROUGH ADAPTOR CURB AND DISCHARGE WITH GOOSENECK/METAL GRATING.

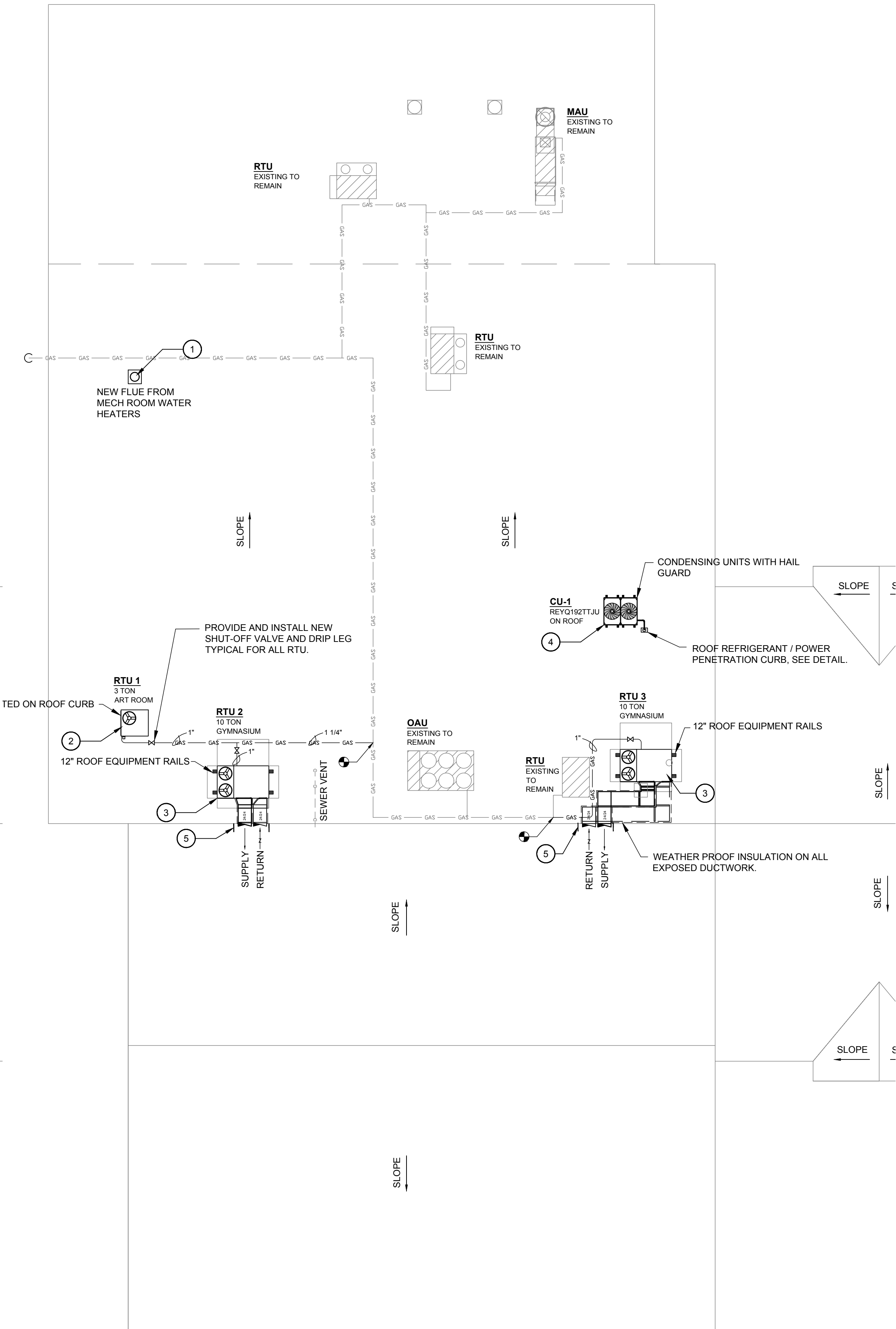


WATER HEATER DETAIL

NO SCALE



1 MECHANICAL ROOF PLAN - DEMO
SCALE: 3/32"=1'-0"



2 MECHANICAL ROOF PLAN - NEW
SCALE: 3/32"=1'-0"



- DEMO NOTES:**
- EXISTING BOILER FLUE CAP TO BE REMOVED ENTIRELY. INSTALL NEW ROOF CURB ADAPTER OVER EXISTING ROOF OPENING.
 - REMOVE EXISTING CONDENSING UNIT LOCATED ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING, WIRING, POWER, ETC. REMOVE EXISTING CONDENSING UNIT PAD ON ROOF. SEAL ROOF PENETRATIONS WATER TIGHT.
 - REMOVE EXISTING FRESH AIR LOUVERS SERVING GYMNASIUM. PREPARE OPENING FOR NEW DUCTWORK ROUTED TO EXISTING DUCTWORK.
- CONSTRUCTION NOTES:**
- INSTALL NEW ADAPTER CURB OVER EXISTING OPENING IN ROOF. RUN NEW WATER HEATER FLUE AND FRESH AIR PIPING THROUGH CURB WITH GOOSENECK. SEAL PENETRATIONS WATER TIGHT.
 - PROVIDE AND INSTALL NEW 3 TON PACKAGED RTU SERVING ART ROOM. CONNECT NEW 3/4" GAS LINE FROM EXISTING ROOF GAS PIPING TO THIS UNIT. PROVIDE WITH SHUT-OFF VALVE AND DRIP LEG.
 - PROVIDE AND INSTALL TWO NEW 10 TON ROOF TOP UNITS SERVING GYMNASIUM. EXTEND NEW 1" GAS LINE TO UNIT AS INDICATED. PROVIDE AND INSTALL SHUT OFF VALVE WITH GAS REGULATOR AND DRIP LEG. ROUTE DUCTWORK WITH ROOF DUCT SUPPORT STANDS. INSULATE DUCTWORK WHERE EXPOSED TO WEATHER. INSTALL ROOF TOP UNITS ON 12" ROOF EQUIPMENT RAILS.
 - VRF CONDENSING UNITS INSTALLED ON 12" ROOF RAILS. REFRIGERANT PIPE PENETRATION THRU VAULT ROOF CURB.
 - SEAL PREVIOUS FRESH AIR LOUVER OPENING AROUND NEW DUCTWORK WITH DOUBLE LAYER SHEET METAL WITH 2" INSULATION BETWEEN. SEAL WATER TIGHT.

DESIGNED
NN

BY
NN

DATE
MAR, 21, 2016

DESCRIPTION
SEE SHEET

NO.

REVISIONS

DATE

DESCRIPTION

NO.

SCALE CHECK: 1" = 1'

THIS MARK SHOULD MEASURE EXACTLY 1"

CONTRACT NO. 8310-23

CLIENT PROJECT NO. XXXX-XX

ENGINEERING
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STATE OF KENTUCKY
NORTH TODD ELEMENTARY SCHOOL
2016 HVAC RENOVATION
ELKTON, KY

DATE
MAR, 21, 2016

SCALE
SEE SHEET

SHEET NAME
MECHANICAL
ROOF PLAN

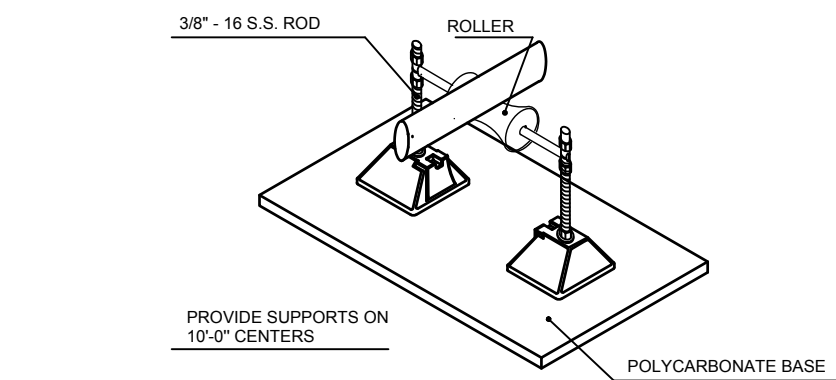
SHEET NO.
M1.4

VRV INDOOR UNIT DETAIL SCHEDULE (CU-1)												
CU-1 - REYQ192TTJU												
Name	FCU	Tmp C °F	TC BTU/h	SC BTU/h	Tmp H °F	HC BTU/h	Airflow CFH	Sound dBA	Voltage	MCA A	MFA A	WxHxD inch
IU-1	FXFQ24TVJU	75.2 / 50%	20314	17344	68	28014	46615	28-36	230V 1ph	0.7	15 A	33.1x9.7x33.1
IU-2	FXZQ09MVJU9	75.2 / 50%	8033	6033	68	11100	19211	29-32	230V 1ph	0.8	15A	22.6x11.3x22.6
IU-3	FXZQ09MVJU9	75.2 / 50%	8033	6033	68	11100	19211	29-32	230V 1ph	0.8	15A	22.6x11.3x22.6
IU-4	FXAQ07PVJU	75.2 / 50%	6336	5806	68	8700	15600	29-35	230V 1ph	0.3	15A	31.3x11.4x9.3
IU-5	FXZQ09MVJU9	75.2 / 50%	8033	6033	68	11100	19211	29-32	230V 1ph	0.8	15A	22.6x11.3x22.6
IU-6	FXZQ09MVJU9	75.2 / 50%	8033	6033	68	11100	19211	29-32	230V 1ph	0.8	15A	22.6x11.3x22.6
IU-7	FXFQ18TVJU	75.2 / 50%	15212	14055	68	20700	44532	28-35.5	230V 1ph	0.6	15 A	33.1x9.7x33.1
IU-8	FXZQ09MVJU9	75.2 / 50%	8033	6033	68	11100	19211	29-32	230V 1ph	0.8	15A	22.6x11.3x22.6
IU-9	FXFQ24TVJU	75.2 / 50%	20314	17344	68	28014	46615	28-36	230V 1ph	0.7	15 A	33.1x9.7x33.1

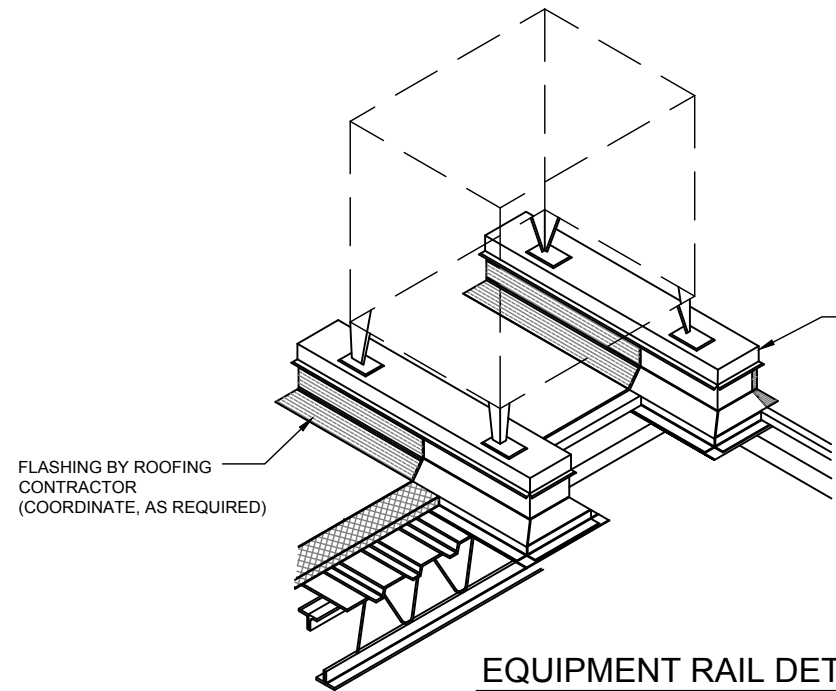
VRV OUTDOOR UNIT DETAIL SCHEDULE (CU-1)								
Name	MODEL	COMB %	Tmp C °F	CC BTU/h	Rq CC BTU/h	Tmp H °F	HC BTU/h	Rq HC BTU/h
CU-1	REYQ192TTJU	75.2 / 50%	20314	17344	68	28014	46615	28-36

Name	Model	Voltage	MCA A	Fuses	W X H X D Inch	Weight lbs.
CU-1	REYQ192TTJU	230V / 3PH	43	50A	48.9X66.7X30.2	703
	*REYQ120TTJU					
	*REYQ72TTJU					

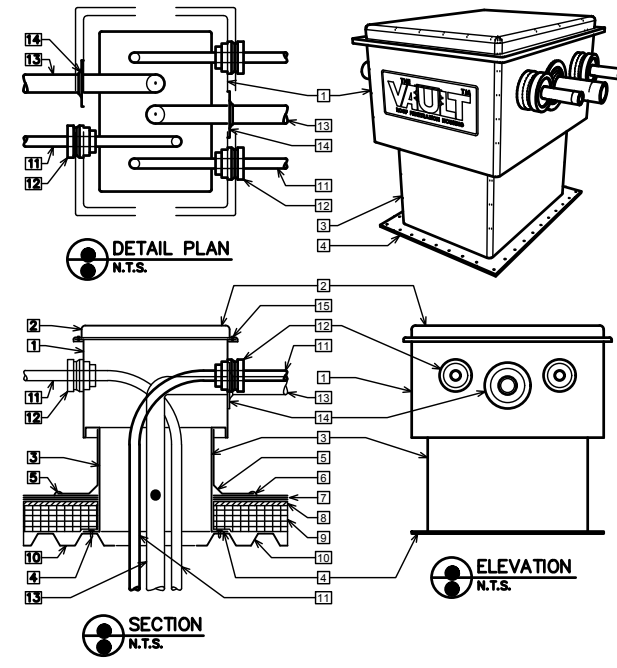
BSV-DETAIL					
Name	Model	Voltage	MCA A	W X H X D Inch	Weight lbs.
BSV - 1	BSQ96TVJ	230V / 1 PH	0.1	15.3X8.1X2.8	33
BS 2	BSQ36TVJ	230V / 1 PH	0.1	15.3X8.1X2.8	27
BS 3	BSQ36TVJ	230V / 1 PH	0.1	15.3X8.1X2.8	27
BS 4	BSQ36TVJ	230V / 1 PH	0.1	15.3X8.1X2.8	27



GAS STAND SUPPORT DETAIL
NOT TO SCALE

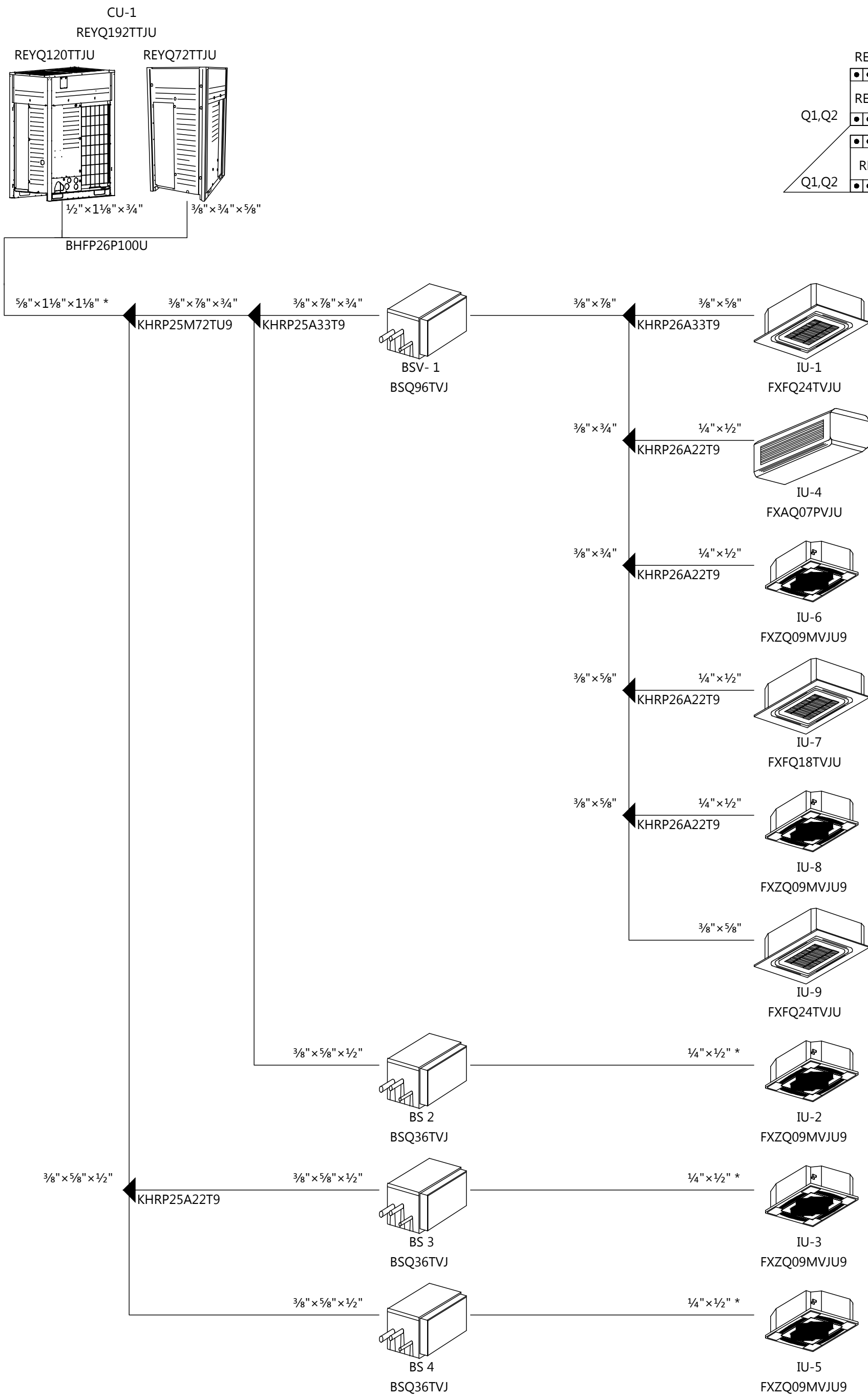


EQUIPMENT RAIL DETAIL
NOT TO SCALE



ROOF PENETRATION HOUSING DETAIL
NOT TO SCALE

- THE VAULT™**
ROOF PENETRATION HOUSING
- LEGEND:**
- 1 THE WALL (SPECCY MODEL)
 - 2 MATCHING PREFAB ALUMINUM CAP
 - 3 MATCHING ALUMINUM CURB 1/4\"/>
 - 4 INSULATION (SPECCY MODEL)
 - 5 ALUM FLANGE, FASTEN TO ROOF DECK
 - 6 SIS FLASHING MEMBRANE
 - 7 COMPRESSED GASKET WITH RUBBERIZED ASPHALT SEALANT
 - 8 RECOVER SYSTEM
 - 9 RECOVER BOARD
 - 10 RIGID INSULATION
 - 11 METAL ROOF DECK
 - 12 CONDUIT, PPE, REFRIGERANT LINE, ETC. (SIZES FROM 1/2\"/>
 - 13 EXIT SEAL, *FOR SIZES FROM 1/2\"/>
 - 14 CONDUIT, PPE, REFRIGERANT LINE, ETC. (SIZES FROM 1/2\"/>
 - 15 EXIT SEAL, *FOR SIZES FROM 1/2\"/>
 - 16 VANGARD RESISTANT STAINLESS SCREWS
 - 17 FASTEN CURB FLANGE TO ROOF DECK
- CONTACT RPH AT 1-800-984-0945

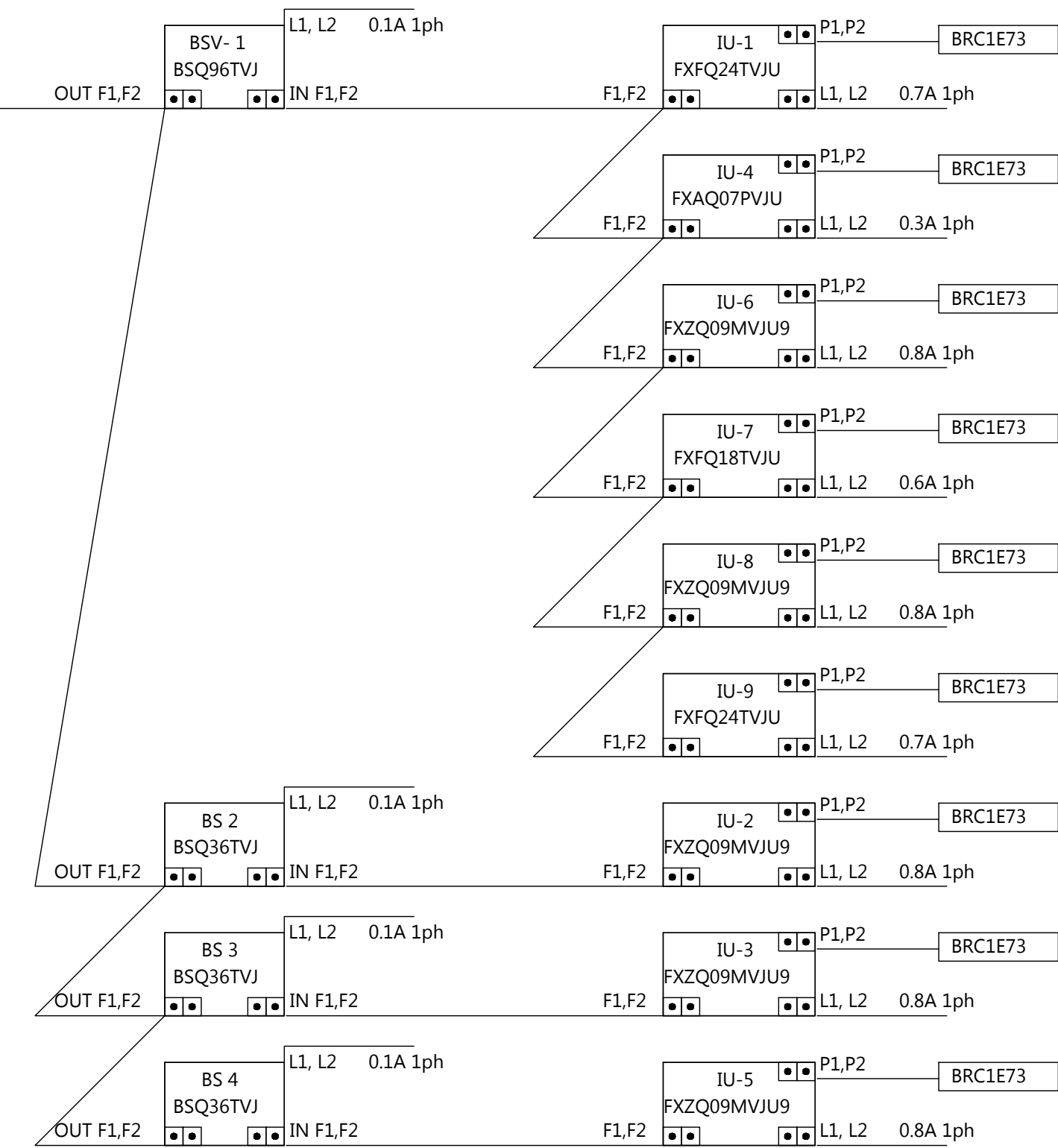


PIPING SCHEMATIC

NOT TO SCALE

- STANDARD CONSTRUCTION:
- 16 GAUGE GALVANIZED STEEL
 - LIMITED CONSTRUCTION WITH INTEGRAL BASE PLATE
 - WELDED CONSTRUCTION
 - WOOD NAILER
 - GALVANIZED COUNTERFLASHING WITH LAG SCREWS
 - INTERNALLY REINFORCED
 - RAIL IS RAISED GANT ON ER-4 STYLE

ROOFTOP EQUIPMENT SUPPORT RAIL DTL.
NO SCALE



WIRING DIAGRAM

NOT TO SCALE

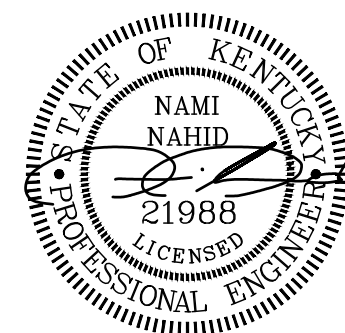
VRF NOTE:

REFRIGERANT PIPING NOTE:
CONTRACTOR SHALL COORDINATE WITH MANUFACTURE TO DETERMINE PIPING SIZES.

ROUTE CONDENSATE LINES TO NEAREST WALL, JAN SINK OR FLOOR DRAIN.

MULTI-PORT BRANCH SELECTOR VALVES BOXES SHALL BE ACCEPTABLE, UPON ENGINEER'S APPROVAL
CONTRACTOR SHALL COORDINATE WITH MANUFACTURER FOR MULTI-PORT BOX LAYOUT AND PIPING SIZING / ROUTING.
ENGINEERING SHALL APPROVE LAYOUT

PROVIDE A STAND-ALONE I-TOUCH CONTROLLER FOR OFFICE AREA VRF SYSTEM.



CONTRACT NO. 8310-23
CLIENT PROJECT NO. XXXX-XX
NAME: NAMI NAHID
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STEWART RICHEY CONTRACTING GROUP
ENGINEERING
2137 GLEN LILY RD BOWLING GREEN, KY 42101
P: 270-782-6654 F: 270-782-6654
"Providing Unsurpassed Service and Innovative Solutions through Our Exceptional People"

NORTH TODD ELEMENTARY SCHOOL
2016 HVAC RENOVATION
ELKTON, KY

REVISIONS	DESIGNED	BY	DATE	DESCRIPTION	REVIEWED	DATE	APPROVED
	NN				WR		NN
NO							

DATE: MAR, 21, 2016

SCALE: SEE SHEET

SHEET NAME: MECHANICAL SCHEDULES

SHEET NO.

M1.5

DIFFUSER, GRILLE, & REGISTER SCHEDULE									
UNIT NO.	FRAME SIZE	NECK SIZE	# OF SLOTS	TYPE	LOCATION & MOUNTING	MATERIAL	FINISH	MODEL NO.	NOTES
SD-1	24X24	SEE PLAN	3	PLAQUE FACE	CEILING / LAY-IN	ALUM.	OFF-WHITE	DAT	1,2
RG-1	24X24	14" ROUND	---	EGG-CRATE	CEILING/LAYIN	STEEL	OFF-WHITE	50FF	1,3
RG-2	FIELD VERIFY	SEE PLAN	---	LOUVERED FACE	SIDE-WALL MTD	STEEL	OFF-WHITE	33RL	1
NOTES: 1. BASED ON TITUS BASED ON TITUS 2. PROVIDE COVER INSULATION OVER DIFFUSER. 3. PROVIDE AND INSTALL 1" RETURN FILTER GRILLE.									

PIPING, DUCTWORK, AND INSULATION SCHEDULE

REFRIGERANT PIPING
WEATHER EXPOSED REFRIGERANT PIPING:
RIDGID COPPER TYPLE L, INSULATED WITH 1" BLACK FOAM AND ADDITIONAL UV PROTECTED PVC JACKET OVER INSTALLATION.
PENETRATE REFRIGERANT PIPING THRU SIDE-WALL WITH A SLEEVED OPENING AND SEALED WATER TIGHT AFTER INSTALLATION.

REFRIGERANT PIPING WITHIN BUILDING:
RIDGID COPPER TYPLE L, INSULATE PIPING WITH 1" BLACK FOAM. SUPPORT PIPING FROM STRUCTURE WITH UNISTRUTS
FLEXIBLE INSULATED COPPER SHALL ONLY BE USED FOR SINGLE UNIT CONNECTION WITH MAXIMUM LENGTH OF 6'-0".

DUCTWORK AND AIR DEVICES INSULATION.
DUCTWORK AS PER LATEST SMACNA GUIDELINES FOR LOW PRESSURE SYSTEM.
INSULATED ALL (SUPPLY, RETURN, EXHAUST, OUTSIDE AIR) WITH DOUBLE BUBBLE WRAP TYPE (R-8)
ALL DIFFUSERS AND GRILLES SHALL HAVE ABOVE DIFFUSER MOLDED INSULATION ON FACE PLATES.

DOMESTIC WATER PIPING.
DOMESTIC HOT/COLD WATER SHALL BE TYPE L COPPER WITH 1" BLACK FOAM INSULATION.
MARK CONTECT AND FLOW EVERY 10'

HVAC CONTROLS SYSTEM

Main Building Automation System:
All NEW HVAC CONTROL SHALL BE STAND-ALONE OPERATION. PROVIDE PROGRAMMABLE THERMOSTATS
FOR ALL RTU AND SPLIT SYSTEMS.
VRF SYSTEMS SHALL BE WITH AN I-TOUCH CONTROLLER INSTALLED IN MAIN OFFICE AREA AND REMOTE CONTROLLERS
FOR ALL INDOOR UNITS.

ROOF TOP UNIT SCHEDULE

	RTU-1	RTU-2	RTU-3
TAG			
MAKE	RHEEM	RHEEM	RHEEM
MODEL	RGEA16	RKKL B120CL	RKKL B120CL
STAGES	2	2	2
TYPE	PACKAGE RTU VERTICAL DISCHARGE	PACKAGE RTU HORIZONTAL DISCHARGE	PACKAGE RTU HORIZONTAL DISCHARGE
VOLTAGE	208 / 3	208-230V - 3PH	208-230V - 3PH
MCA (A)	20	51	51
MOP (A)	25	60	60
EER / SEER	11.8/14	11.2/NA	11.2/NA
IEER	---	12.2	12.2
AIRFLOW (CFM)	800 / 1200	4,000	4,000
ESP (in. H2O)	0.50	0.5	0.5
MOTOR SIZE (HP)	1/2	2.0	2.0
TOTAL CAPACITY (COOLING)	35,400	119,000	119,000
SENSIBLE CAPACITY	24200	85,300	85,300
REFRIGERANT	R410a	R410a	R410a
HEATING TYPE	GAS	GAS	GAS
INPUT SIZE (BTU)	46,000 / 60,000	112,500 / 225,000	112,500 / 225,000
OUTPUT	37,200 / 48,600	91,000 / 182,250	91,000 / 182,250
STAGES	2	2	2
EFFICIENCY	82%	82%	82%
WEIGHT (LBS)	421	1020	1020

NOTES:

1. PROVIDE WITH DISCONNECT
2. 2" MERV 8 FILTER WITH HINGED ACCESS AT UNIT.
3. PROVIDE WITH PROGRAMMABLE THERMOSTAT
4. PROVIDE WITH HAIL GUARD

WATER HEATER SCHEDULE

UNIT NO	WH-1	WH-2
MANUFACTURER	LOCHINVAR	LOCHINVAR
MODEL	PNR200-80	PNR200-80
QTY	2	2
STORAGE CAPACITY (GAL)	80	80
FUEL TYPE	GAS	GAS
BTU/hr INPUT	199,999	199,999
VOLTAGE	115 V AC	115 V AC
GAS CONNECTION	3/4"	3/4"

NOTES:

1. PROVIDE ANY ADDITIONAL ACCESSORIES FOR COMPLETE UNIT INSTILLATION.
COORDINATE WITH ELECTRICAL.

CIRCULATION PUMP SCHEDULE

UNIT NO	CIRC. PUMP
MANUFACTURER	BELL AND COSSET
MODEL	A 142F PL30
POWER (HP)	1/12
PHASE	1
VOLTAGE	115
GPM	20 GPM @ 10FT

NOTES:

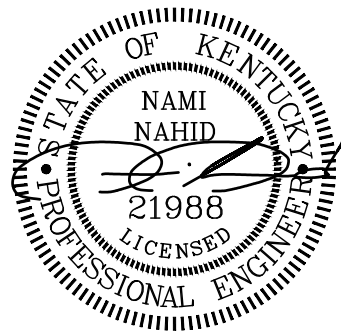
1. PROVIDE ANY ADDITIONAL ACCESSORIES FOR COMPLETE UNIT
INSTILLATION. COORDINATE WITH ELECTRICAL.

AIR HANDLING UNIT SCHEDULE

UNIT NO.	AHU-1 TWINNED
QTY	1
MANUFACTURER	RHEEM
SERIES	RAWL
TYPE	VERTICAL
SYSTEM TONNAGE	7.5
AIR HANDLING UNIT	(2) R92PA
QUANTITY	2
MOTOR	VARIABLE - ECM
AIR FLOW CFM	(2) 1750
E.S.P. IN WG.	0.5
SPEED	MED / LO
FAN H.P.	(2) 3/4
POWER	115 / 1
FLA (AMP)	(2) 8.3
HEATING	GAS - TWIN FURNACE
TYPE	CONCEALED COMB.
STAGES	MODULATING HEAT
EFFICIENCY	92%
HIGH INPUT (BTUh)	84000
HIGH OUTPUT (BTUh)	78120
COOLING COIL	
MODEL	RCCL-D5013S
CAPACITY (BTU/HR)	85100
STYLE COIL	L
DRAIN PAN	STAINLESS STEEL
CERTIFICATION	ARI
CONDENSING UNIT	
SERIES	RAWL-090
COOLING STAGES	2
SEER	13.37
POWER	230 / 3
COMPRESSOR	SCROLL TWO-STAGE
MCA (AMP)	34
FUSE SIZE (AMP)	50
ACCESSORIES	
FILTER TYPE	2" (MERV-13)
LOW AMB COOLING	31 DEG F.
HEAD PRES. CONTROL	YES
THERMOSTAT	ECONET - PROG.

NOTES:

1. PROGRAMMABLE THERMOSTAT WITH WALL PLATE.
 2. SYSTEM SHALL BE UL LISTED
 3. 2" FILTER HOUSING WITH ACCESS DOOR
 4. OTHER ACCEPTABLE MANUFACTURERS: LENNOX - TRANE
- MINIMUM SEER: 16



CONTRACT NO. 8310-23

CLIENT PROJECT NO. XXXX-XX

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STEWART RICHEY
CONTRACTING GROUP

ENGINEERING

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NORTH TODD ELEMENTARY SCHOOL
2016 HVAC RENOVATION
ELKTON, KY

DESIGNED		DRAWN		REVIEWED		APPROVED	
NO	BY	DATE	DESCRIPTION	NO	BY	DATE	DESCRIPTION
	NN				WR		
					NN		
					NN		
					NN		
					NN		

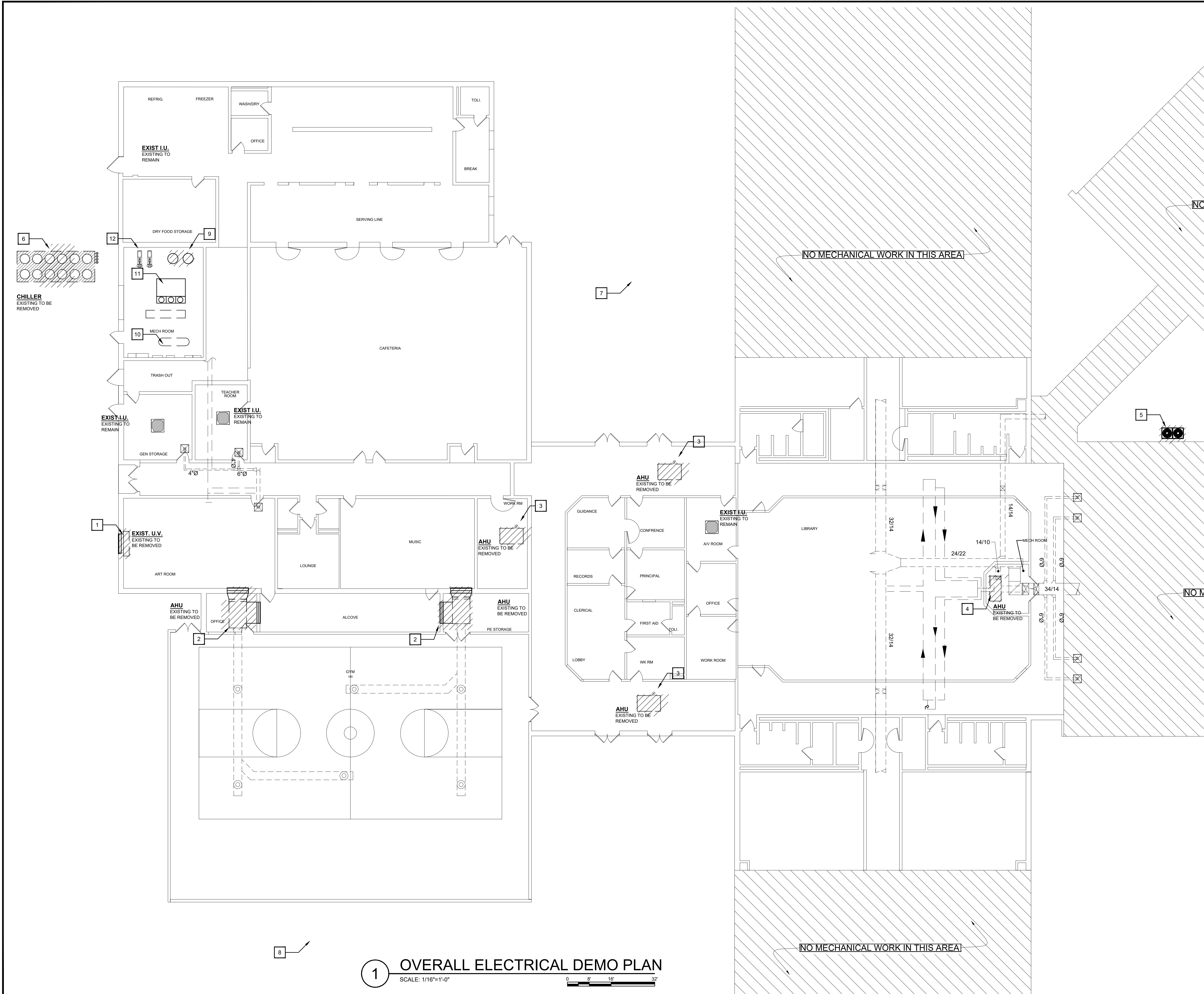
DATE:
MAR, 21, 2016

SCALE:
SEE SHEET

SHEET NAME:
MECHANICAL
SCHEDULES

SHEET NO.

M1.6



1 OVERALL ELECTRICAL DEMO PLAN
SCALE: 1/16"=1'-0"

DEMO NOTES:

1. DISCONNECT EXISTING UNIT VENTILATOR FOR REMOVAL. REMOVE ASSOCIATED CONDUIT AND WIRING.
2. DISCONNECT EXISTING AIR HANDLING UNITS SERVING GYMNASIUM FOR REPLACEMENT WITH ROOF TOP UNITS. REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO PANEL H. EXISTING 20A/3P CIRCUIT BREAKERS IN PANEL H SERVING EXISTING UNITS SHALL BE REMOVED AND TURNED OVER TO OWNER.
3. DISCONNECT EXISTING AIR HANDLING UNITS SERVING OFFICE AREA FOR REPLACEMENT WITH VRF SYSTEM. REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO PANEL H.
4. DISCONNECT VERTICAL AIR HANDLING UNIT SERVING MEDIA CENTER WITHIN MECHANICAL CLOSET AREA. RETAIN EXISTING 20A, 3P BRANCH CIRCUIT FROM PANEL DPH TO SERVE NEW AIR HANDLING UNIT.
5. DISCONNECT EXISTING CONDENSING UNIT. RETAIN EXISTING 100A, 3P BRANCH CIRCUIT FROM PANEL DPH TO SERVE NEW COMPRESSOR.
6. DISCONNECT CHILLER FOR REMOVAL. REMOVE ASSOCIATED CONDUIT TO UNDERGROUND. REMOVE ALL WIRING. DISCONNECT AND REMOVE 225A/3P CIRCUIT BREAKER IN EXISTING MSG TO MAKE ROOM FOR NEW CIRCUIT BREAKERS. RETURN CIRCUIT BREAKER TO OWNER.
7. ELECTRICAL CONTRACTOR SHALL RETROFIT ALL EXTERIOR POLE LIGHT FIXTURES WITH NEW LED LAMP, TYPICAL OF 12. REMOVE EXISTING LAMP AND BALLAST AND REWORK.
8. DISCONNECT AND REMOVE EXISTING GROUND MOUNTED FLOOD LIGHTS FOR REPLACEMENT. RETAIN BRANCH CIRCUIT FOR RECONNECTION TO NEW LIGHT FIXTURE, TYPICAL OF 3.
9. DISCONNECT WATER HEATERS FOR REMOVAL.
10. DISCONNECT AIR COMPRESSOR AND AIR DRYER FOR REMOVAL. REMOVE ALL ASSOCIATED CONDUIT AND WIRING. LABEL CIRCUIT BREAKER AS "SPARE".
11. DISCONNECT ANY BOILER CONTROLS/CONTROL PANEL FOR REMOVAL. REMOVE ALL ASSOCIATED CONDUIT AND WIRING. LABEL CIRCUIT BREAKER AS "SPARE".
12. DISCONNECT PUMPS PANEL FOR REMOVAL. REMOVE ALL ASSOCIATED CONDUIT AND WIRING. DISCONNECTS, ETC., LABEL CIRCUIT BREAKER AS "SPARE".

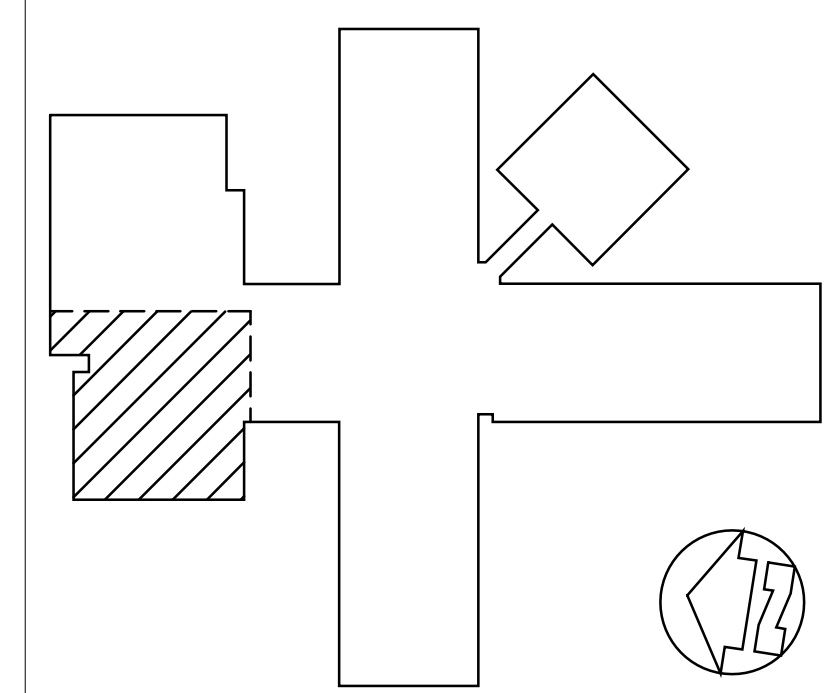
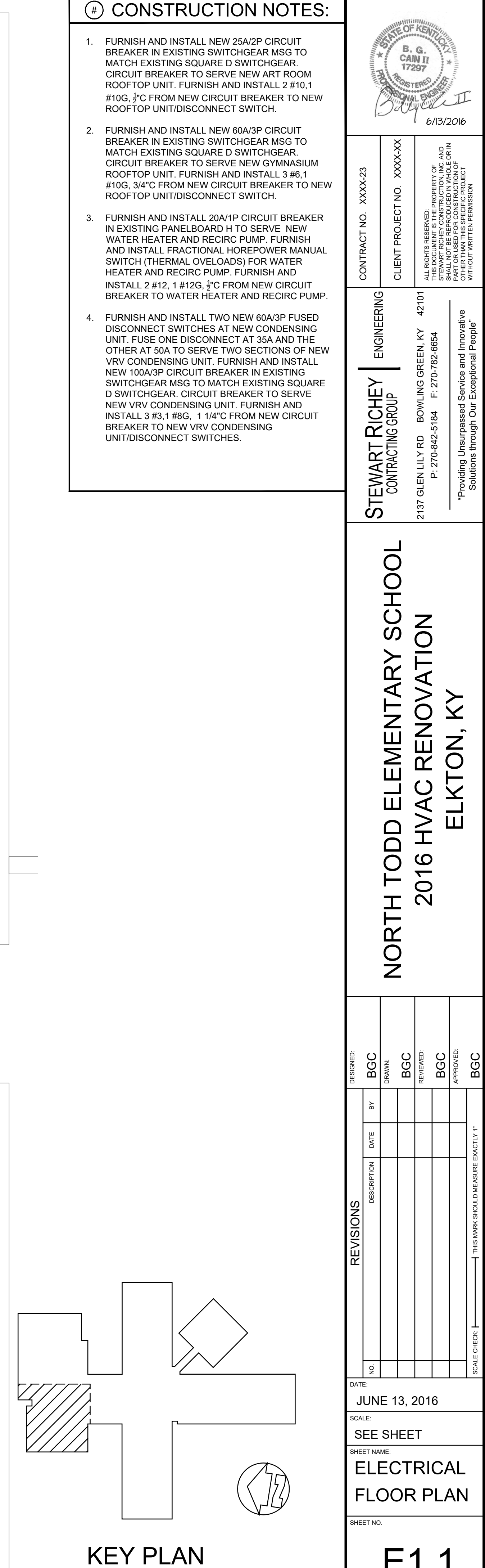
6/13/2016

CONTRACT NO. XXXX-23
CLIENT PROJECT NO. XXXX-XX
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NORTH TODD ELEMENTARY SCHOOL
2016 HVAC RENOVATION
ELKTON, KY

REVISIONS				DESIGNED:
NO	DESCRIPTION	DATE	BY	BGC
				DRAWN
				BGC
				REVIEWED
				BGC
				APPROVED
SCALE CHECK: _____				BGC
SCALE CHECK: _____				APPROVED

DATE:	JUNE 13, 2016
SCALE:	SEE SHEET
SHEET NAME:	ELECTRICAL DEMO PLAN
SHEET NO.	E-1.0





- | | | |
|--|----------------------------|--|
| STEWART RICHEY
CONTRACTING GROUP
1317 GLENVIEW RD. BOWLING GREEN, KY 42101
P. 270-842-5384 F. 270-842-4654 | ENGINEERING | CONTRACT NO. XXXX-23 |
| | CLIENT PROJECT NO. XXXX-XX | <div>  </div> |

NORTH TODD ELEMENTARY SCHOOL
2016 HVAC RENOVATION
ELKTON, KY

REVISIONS				BY	DESIGNED:
NO	DESCRIPTION	DATE			
			BGC		
			DRAWS		
			BGC		
			REVIEWED:		
			BGC		
			APPROVED:		
			BGC		

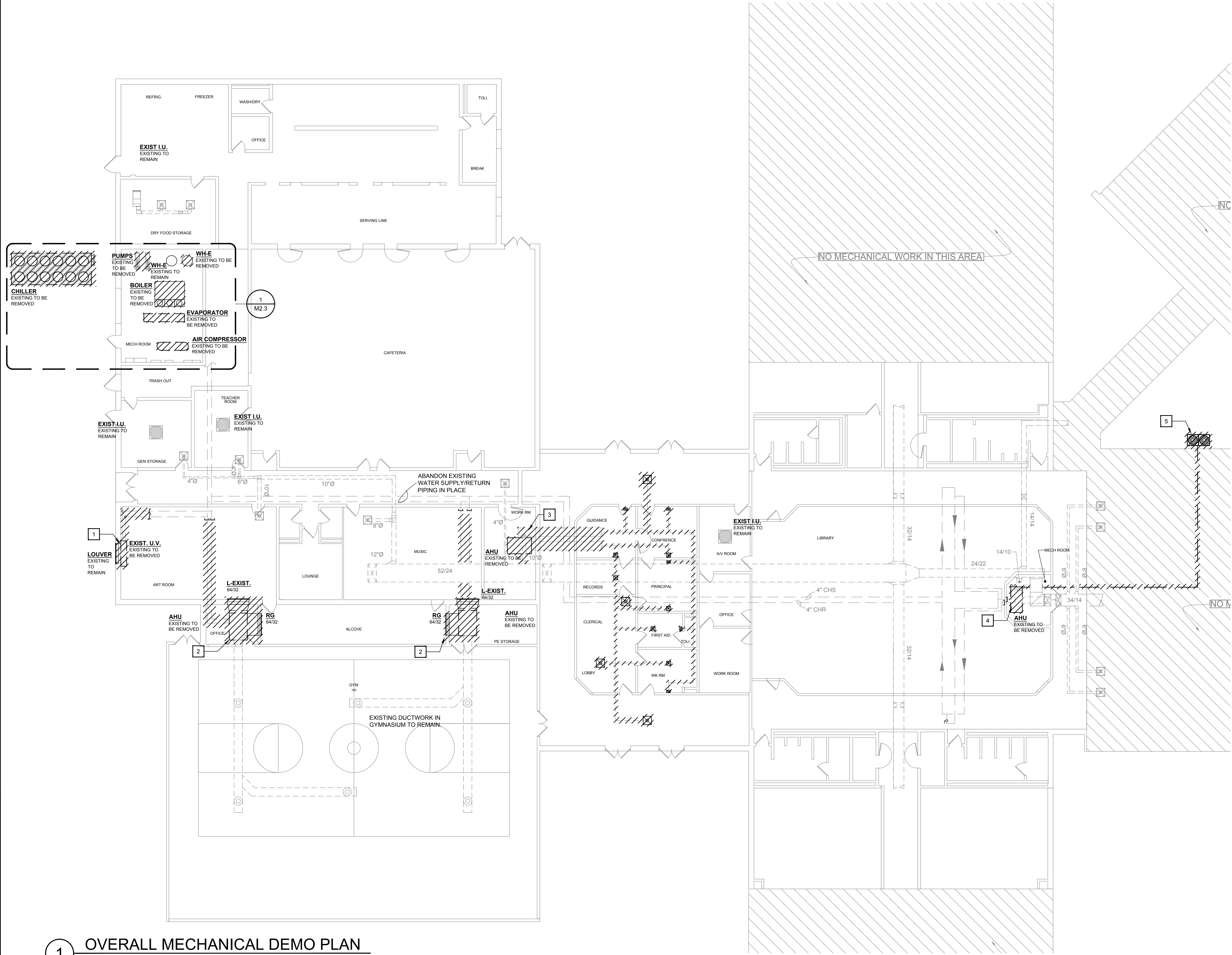
DATE: JUNE 13, 2016

SHEET NAME: SEE SHEET

SHEET NO.: ELECTRICAL FLOOR PLAN

SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1"

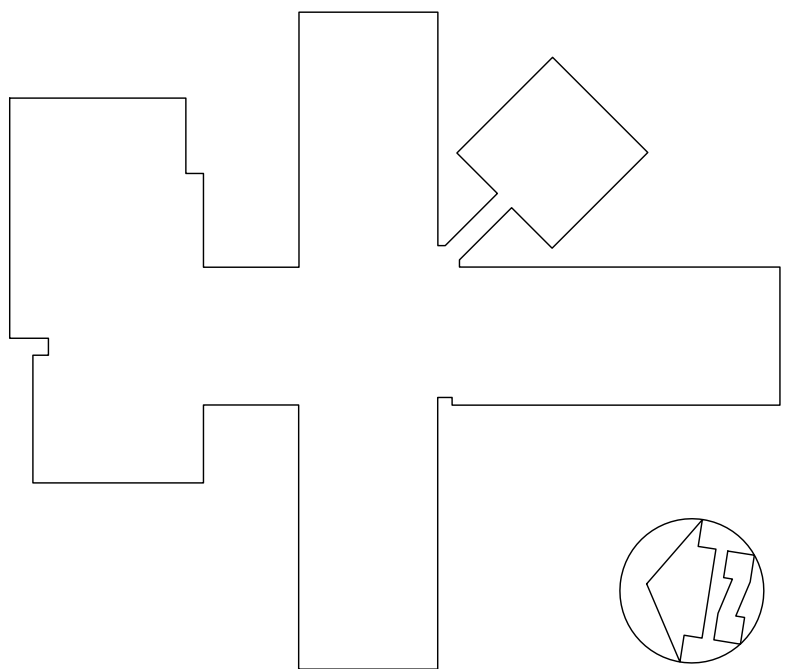
E1.2



1 OVERALL MECHANICAL DEMO PLAN
SCALE: 3/32"=1'-0"



- # DEMO NOTES:
1. REMOVE EXISTING UNIT VENTILATOR WITH ASSOCIATED PIPING, PIPE COVER UP TO CEILING, POWER, WIRING, ETC. CAP PIPING ABOVE CEILING. EXISTING LOUVER TO REMAIN. SEAL WALL PENETRATION WITH DOUBLE LAYER OF SHEET METAL WITH 2" INSULATION BETWEEN. PAINT SHEET METAL AND WALL WHERE PIPE COVER WAS REMOVED TO MATCH COLOR. OF EXISTING WALLS REPLACE CEILING TILE WHERE PIPING WAS REMOVED.
 2. REMOVE EXISTING AIR HANDLING UNITS SERVING GYMNASIUM ABOVE CEILING WITH ALL PIPING AND DUCTWORK WHERE SHOWN. REMOVE EXISTING POWER, WIRING, CONTROLS, HANGERS, ETC. REMOVE EXISTING LOUVER ON EXTERIOR WALL (NEW UNIT'S DUCTWORK WILL RUN THRU THIS OPENING). REPLACE EXISTING RETURN GRILL IN STAGE AREA. CAP WATER PIPING AT MAIN.
 3. REMOVE EXISTING AIR HANDLING UNITS SERVING OFFICE AREA WITH ALL ASSOCIATED PIPING, DUCTWORK, CEILING AIR DEVICES, POWER, CONTROLS, HANGERS, ETC. CAP PIPING AT MAIN. REMOVE EXISTING FRESH AIR DUCTWORK AND CAP DUCT AT MAIN. REMOVE SECONDARY REFRIGERANT PIPING WITH CONDENSING UNIT ON ROOF. SEE ROOF PLAN FOR ADDITIONAL DETAILS.
 4. REMOVE VERTICAL AIR HANDLING UNIT SERVING MEDIA CENTER WITHIN MECHANICAL CLOSET AREA. REMOVE ASSOCIATED PIPING AND DUCTWORK AS INDICATED. EXISTING DUCTWORK TO BE RECONNECTED TO NEW UNIT INSTALLED WITHIN THIS ROOM.
 5. REMOVE EXISTING CONDENSING UNIT WITH ASSOCIATED REFRIGERANT PIPING, POWER, WIRING, ETC.



KEY PLAN

DESIGNED: NN

BY: NN

DATE: MAR, 21, 2016

SCALE: SEE SHEET

SHEET NAME: MECHANICAL DEMO PLAN

SHEET NO.

REVISIONS

NO	DESCRIPTION	DATE	BY

THIS MARK SHOULD MEASURE EXACTLY 1"

SCALE CHECK: _____

STEWART RICHEY CONTRACTING GROUP

ENGINEERING

2137 GLEN LILY RD BOWLING GREEN, KY 42101

P: 270-842-5184 F: 270-782-6654

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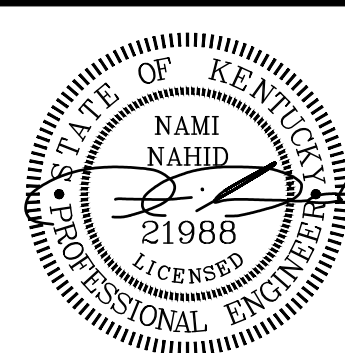
PROFESSIONAL ENGINEER

STATE OF KENTUCKY

CONTRACT NO. 8310-23

CLIENT PROJECT NO. XXXX-XX

M2.0



CONTRACT NO. 8310-23
CLIENT PROJECT NO. XXXX-XX
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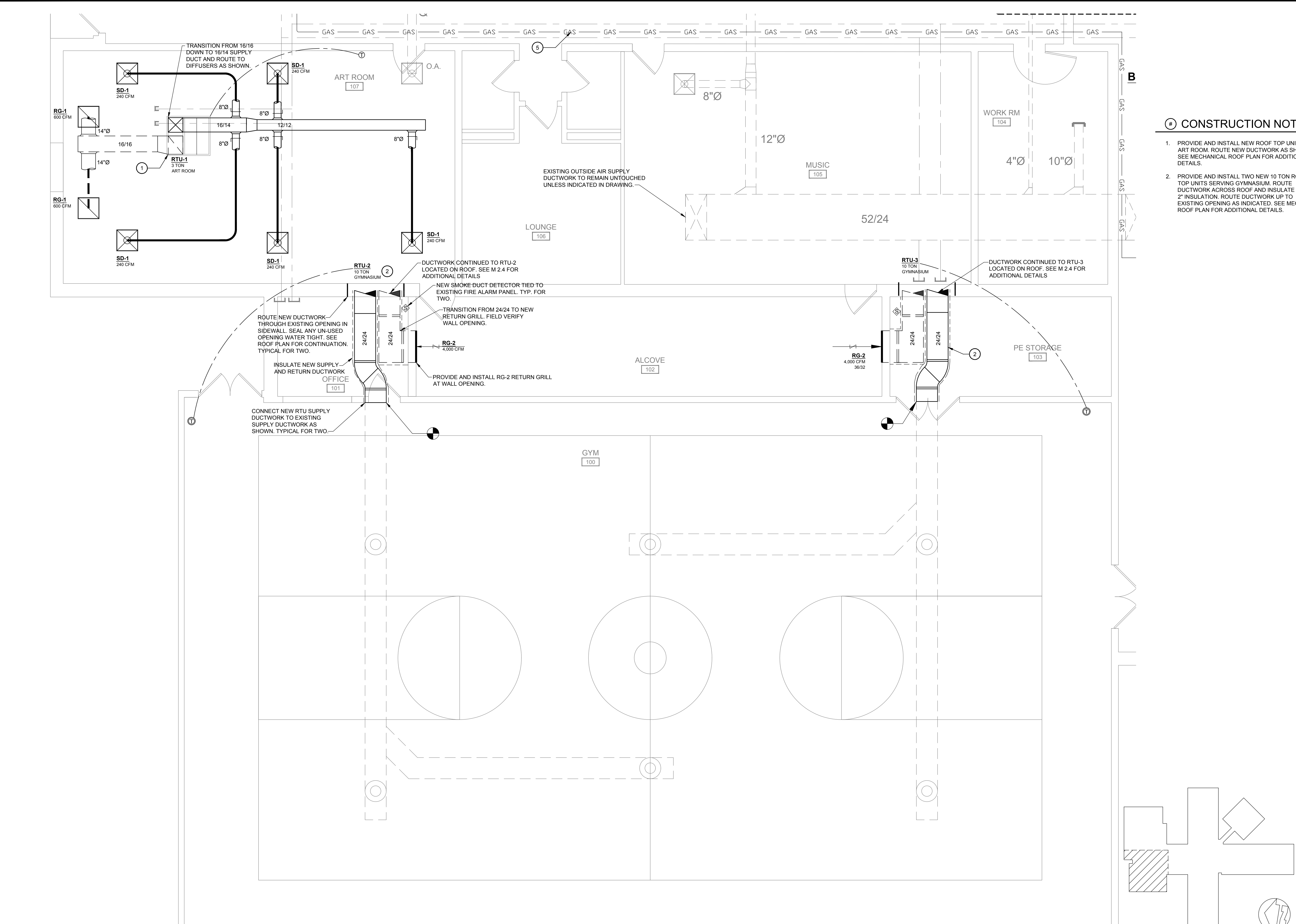
SOUTH TODD ELEMENTARY SCHOOL
2016 HVAC RENOVATION
ELKTON, KY

REVISIONS	NO.	DESCRIPTION	DATE	BY	DESIGNED
					NN
					DRAWN: NN
					WR
					REVIEWED: NN
					APPROVED: NN
SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1"					

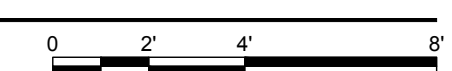
DATE: MAR, 21, 2016
SCALE: SEE SHEET
SHEET NAME: MECHANICAL FLOOR PLAN
SHEET NO.

M2.1

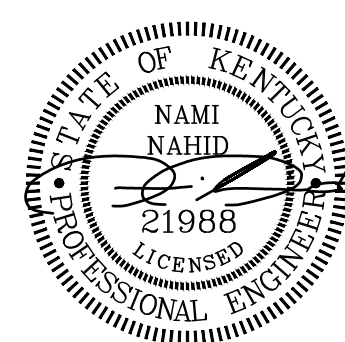
- # CONSTRUCTION NOTES:
1. PROVIDE AND INSTALL NEW ROOF TOP UNIT FOR ART ROOM. ROUTE NEW DUCTWORK AS SHOWN. SEE MECHANICAL ROOF PLAN FOR ADDITIONAL DETAILS.
 2. PROVIDE AND INSTALL TWO NEW 10 TON ROOF TOP UNITS SERVING GYMNASIUM. ROUTE DUCTWORK ACROSS ROOF AND INSULATE WITH 2" INSULATION. ROUTE DUCTWORK UP TO EXISTING OPENING AS INDICATED. SEE MECH ROOF PLAN FOR ADDITIONAL DETAILS.



1 MECHANICAL PLAN - GYMNASIUM AND ART ROOM
SCALE: 1/4"=1'-0"



KEY PLAN



CONTRACT NO. 8310-23
CLIENT PROJECT NO. XXXX-XX
NAME OF CLIENT: SOUTHWESTERN POWER AND LIGHT CO.
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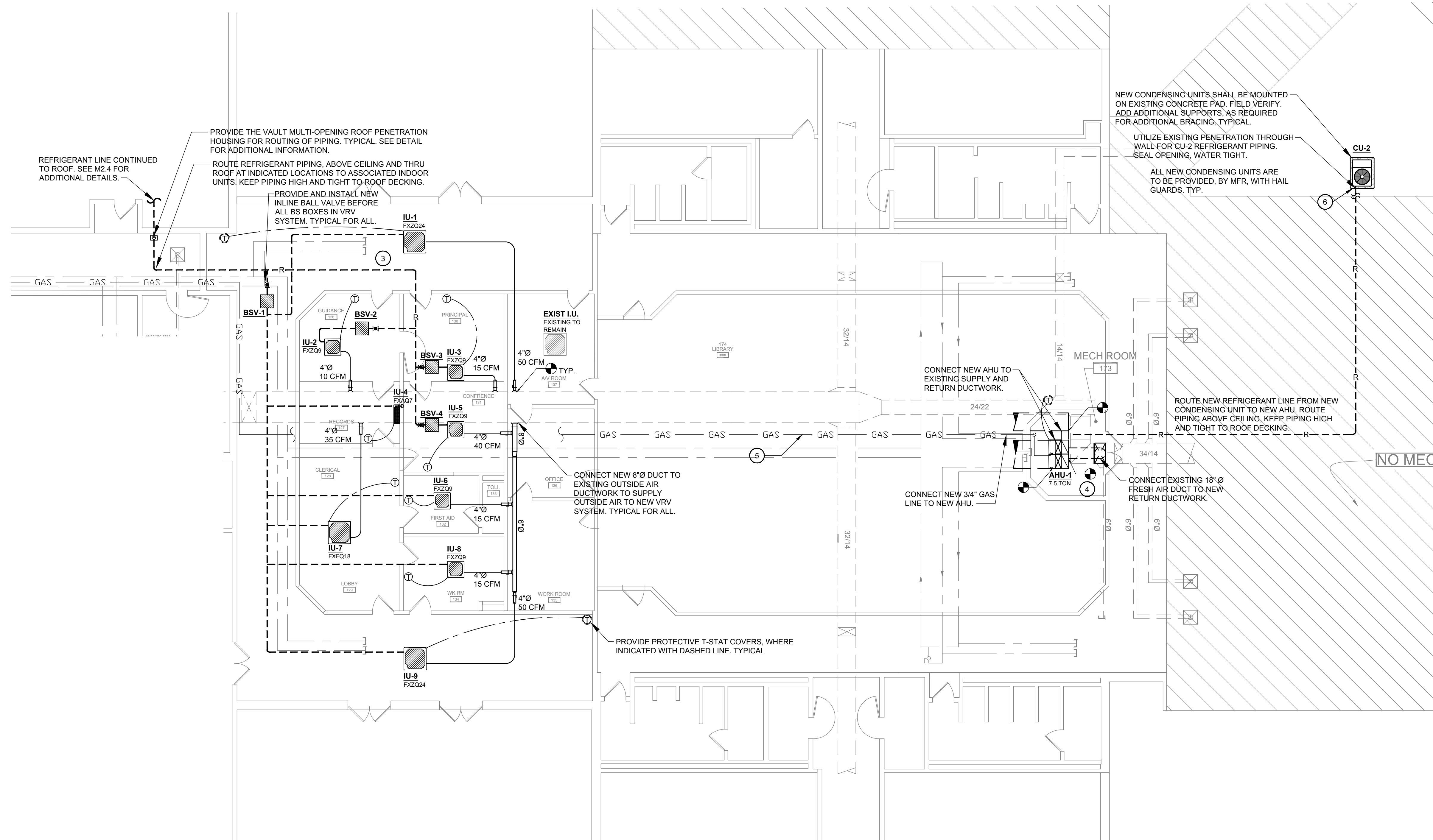
SOUTH TODD ELEMENTARY SCHOOL
2016 HVAC RENOVATION
ELKTON, KY

DESIGNED		DRAWN		REVIEWED		APPROVED	
NN		NN		WR		NN	
BY		DATE		NO		SCALE CHECK: 1" = 16'	
DESCRIPTION		DATE		NO		SCALE CHECK: 1" = 16'	

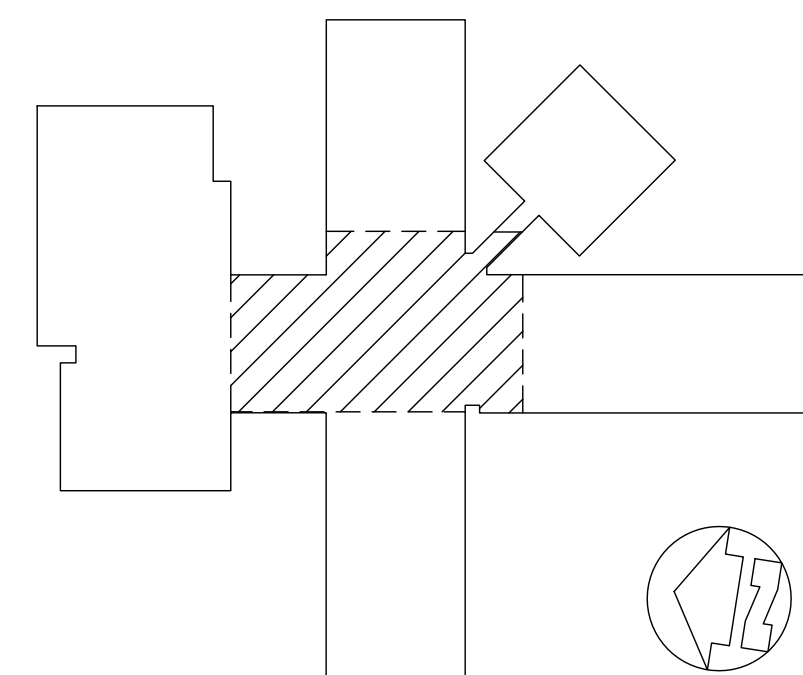
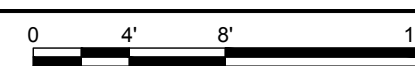
DATE: MAR, 21, 2016
SCALE: SEE SHEET
SHEET NAME: MECHANICAL FLOOR PLAN
SHEET NO. M2.2

CONSTRUCTION NOTES:

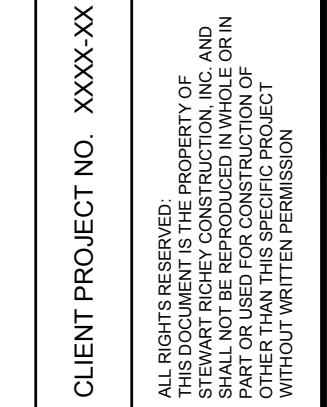
- PROVIDE AND INSTALL NEW VRV SYSTEM IN ADMINISTRATION AREA. INSTALL CASSETTES INSIDE EXISTING CEILING GRID IN LOCATIONS INDICATED. ASSOCIATED CONDENSING UNIT TO BE MOUNTED ON ROOF. INSTALL UNIT ON 12" EGPT. RAILS. SEE MECH ROOF PLAN FOR ADDITIONAL DETAILS.
- PROVIDE AND INSTALL NEW VERTICAL AHU UNIT IN MECHANICAL ROOM SERVING LIBRARY AND CONNECT TO EXISTING SUPPLY AND RETURN DUCT MAINS (FIELD VERIFY EACH UNITS MAIN LOCATIONS). CONNECT EXISTING OA DUCT TO RETURN DUCTWORK. TRANSITION FROM UNIT TO EACH MAIN, AS REQUIRED. INSTALL A 2" FLEX RUBBER CONNECTION WITH UNIT AT SUPPLY DUCTWORK. INSTALL VERTICAL INDOOR UNITS ON 18" HIGH ANGLE IRON STAND. RETURN DUCTWORK CONNECTION BELOW UNIT. INSTALL 2" FILTER HOUSING BELOW UNIT AT RETURN AIR WITH HINGED ACCESS DOOR, TYPICAL.
- PROVIDE AND INSTALL NEW 3/4" NATURAL GAS LINE TO CONNECT TO NEW AHU SERVING LIBRARY.
- PROVIDE AND INSTALL NEW CONDENSING UNIT SERVING LIBRARY. ROUTE NEW REFRIGERANT PIPING TO NEW VRV UNIT AS SHOWN.



1 MECHANICAL PLAN - ADMIN AREA AND MEDIA CENTER
SCALE: 1/8"=1'-0"



KEY PLAN



STEWART RICHEY
CONTRACTING GROUP

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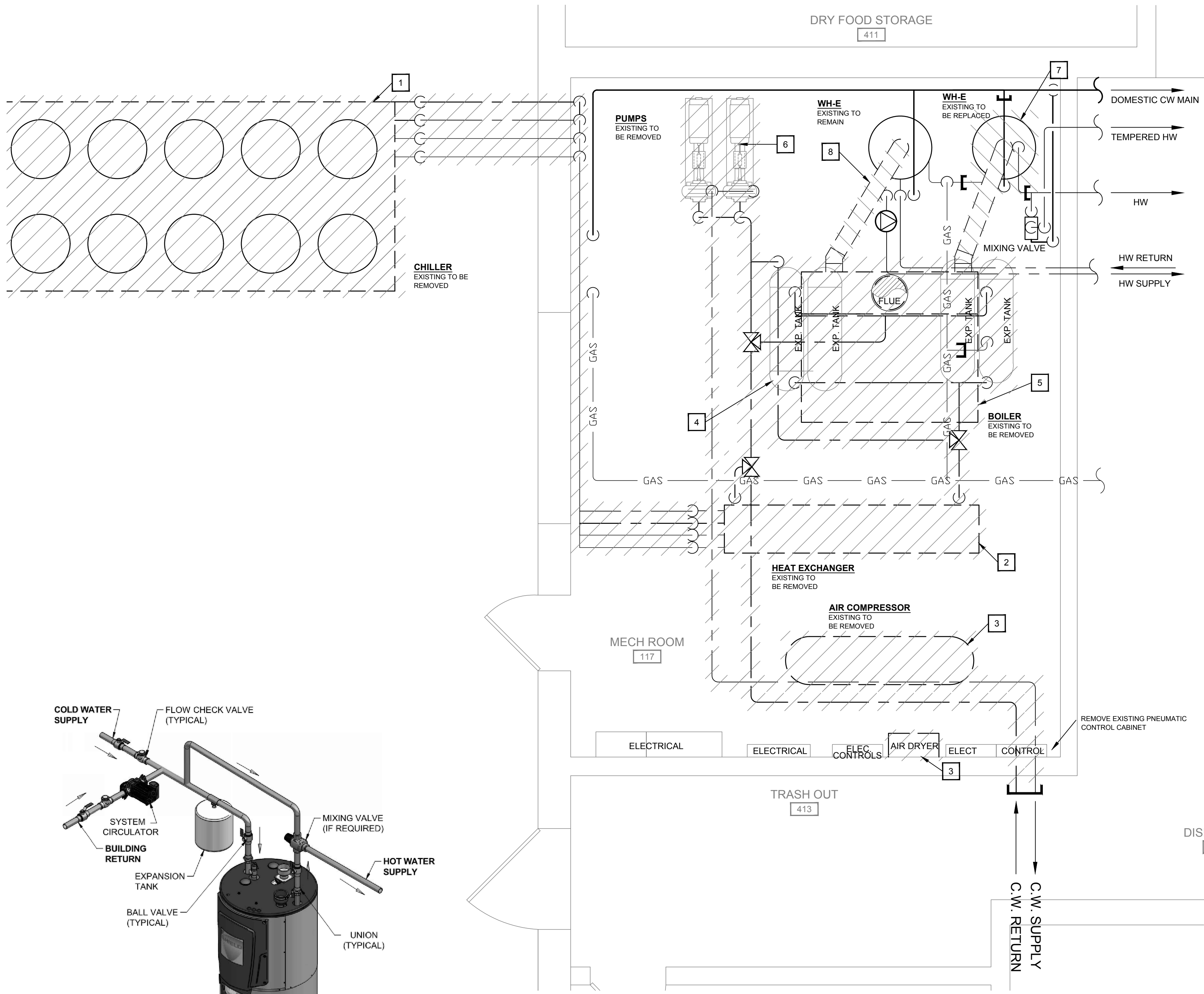
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ELKTON, KY

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NO	DESCRIPTION	DATE	BY
			NN
			DRAWN
			WR
			REVIEWED
			NN
			APPROVED
SCALE CHECK			NN

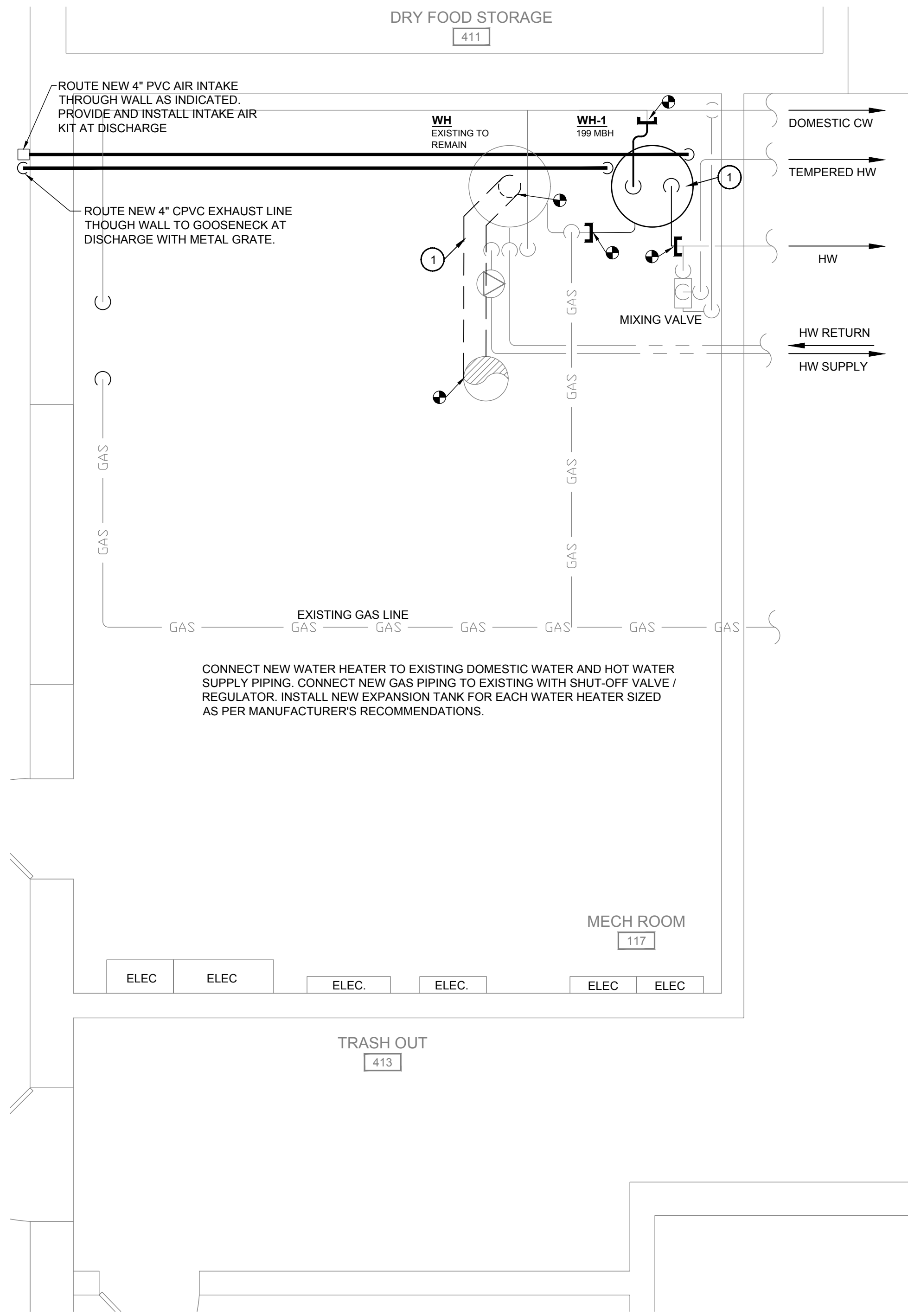
DATE:	MAR, 21, 2016
SCALE:	SEE SHEET
SHEET NAME:	MECHANICAL ROOM PLAN
SHEET NO.	

M2.3



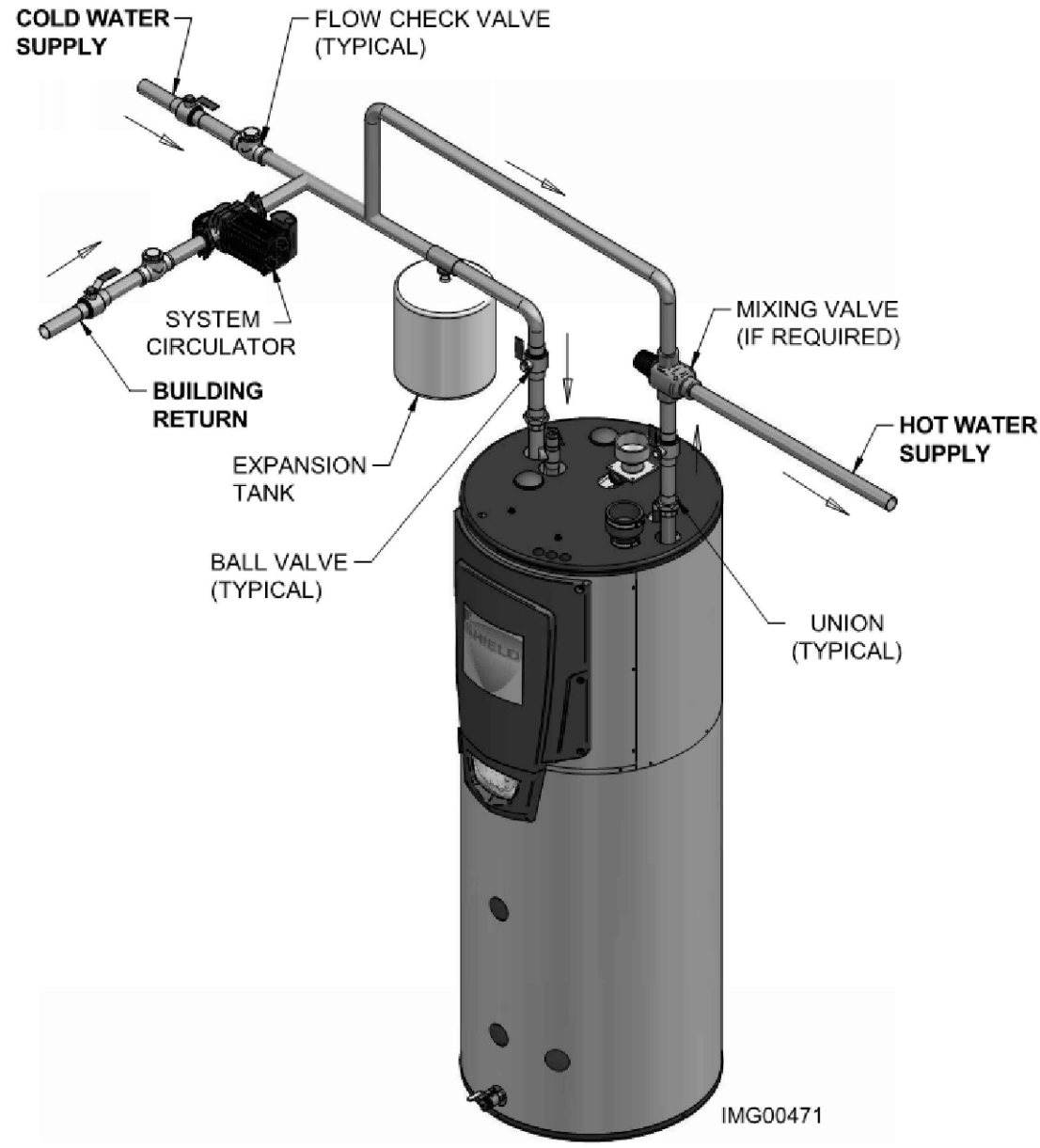
1 MECHANICAL ROOM DEMO PLAN

SCALE: 3/8"=1'-0"



2 NEW MECHANICAL ROOM LAYOUT

SCALE: 3/8"=1'-0"



WATER HEATER DETAIL

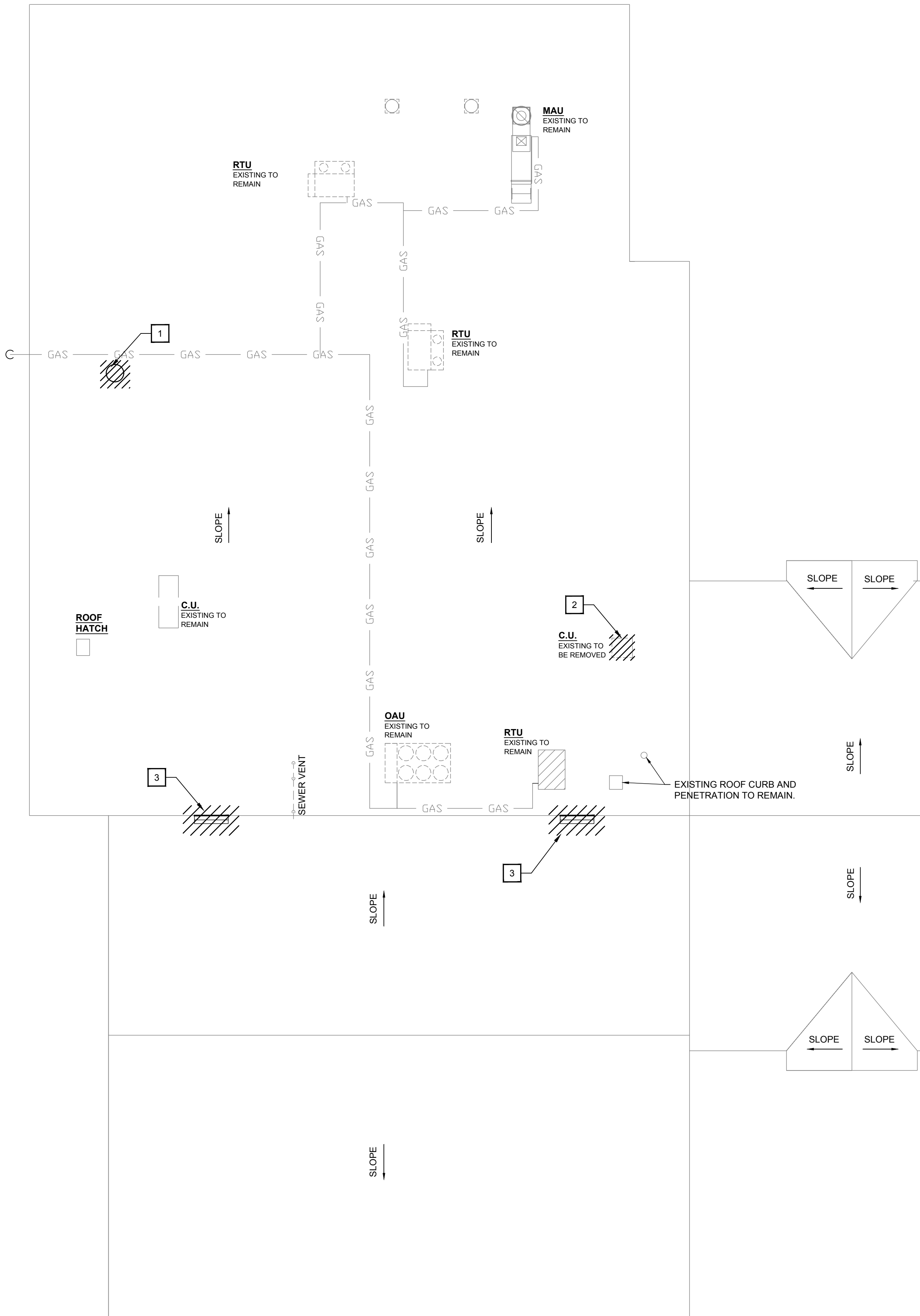
NO SCALE

- DEMO NOTES:**

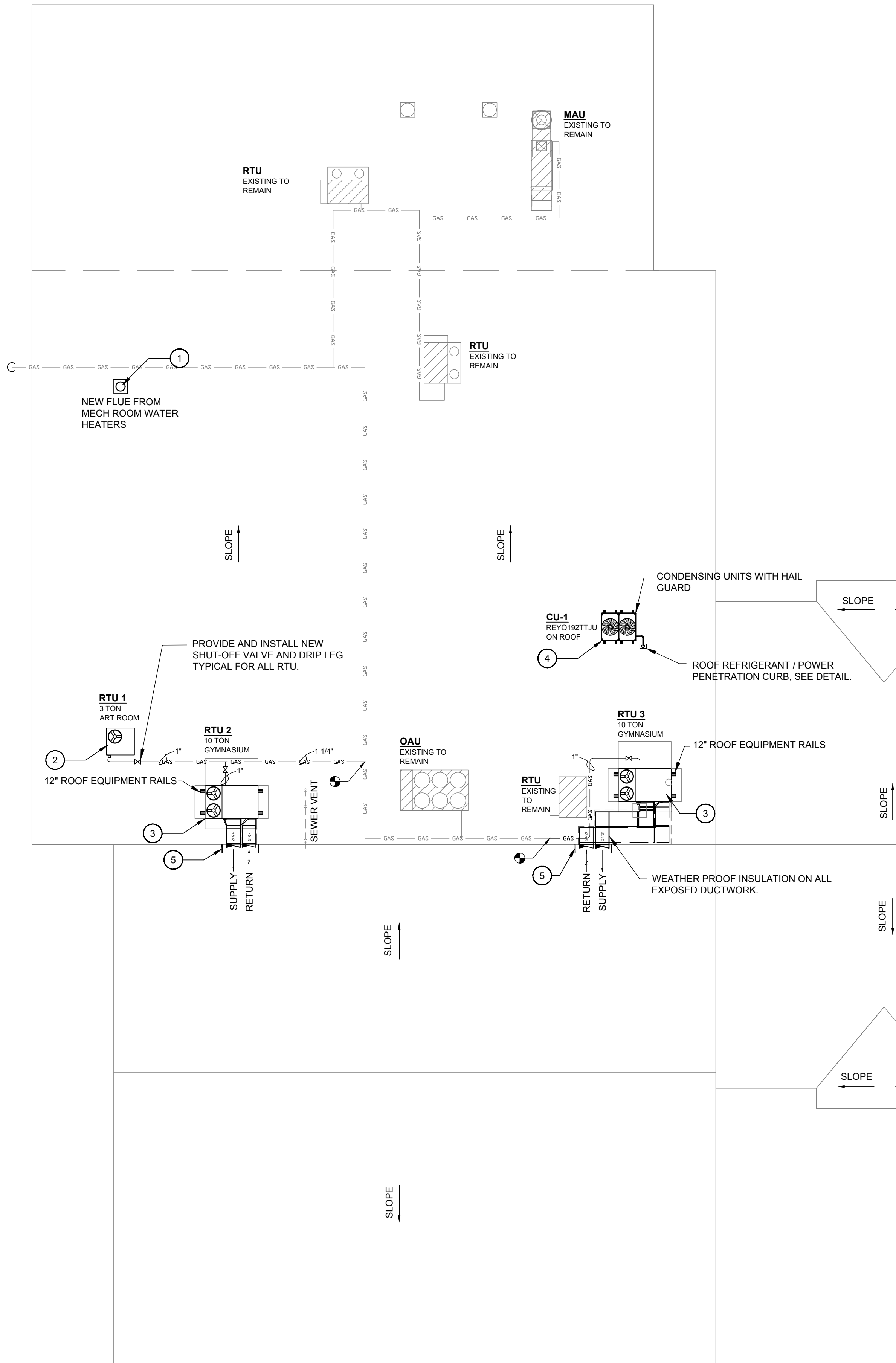
1. REMOVE EXISTING AIR COOLED CHILLER WITH ASSOCIATED PIPING, WIRING, POWER, ETC.. SEAL ANY PIPING / CONDUIT PENETRATION INTO MECHANICAL ROOM. EXISTING CONCRETE PAD TO REMAIN.
2. REMOVE EXISTING INTERIOR EVAPORATOR / CHILLER WITH ASSOCIATED REFRIGERANT PIPING, CHILLED WATER PIPING, WIRING, POWER, ETC. REMOVE ANY HANGERS AND CONCRETE PAD ASSOCIATED WITH EQPT.
3. REMOVE EXISTING AIR COMPRESSOR / AIR DRYER WITH ASSOCIATED AIR PIPING, WIRING POWER, ETC. REMOVE ASSOCIATED CONCRETE PAD AND ALL HANGERS. CAP PIPE PENETRATIONS IN MECHANICAL ROOM.
4. REMOVE EXISTING EXPANSION TANKS LOCATED ABOVE BOILER AND ANY ASSOCIATED PIPING, HANGERS, ETC.
5. REMOVE EXISTING BOILER WITH PIPING, CONTROLS, GAS, ETC.. CAP GAS PIPING AT MAIN. REMOVE CONCRETE PAD BELOW BOILER. FLUE PIPING TO BE COMPLETELY REMOVED UP TO ROOF. SEE WATER HEATER NOTE AND NEW MECH LAYOUT FOR ADDITIONAL DETAIL.
6. REMOVE EXISTING PUMPS WITH ASSOCIATED PIPING, WIRING, POWER AND CONTROLS. REMOVE PUMP BASIN AND CONCRETE PAD.
7. REMOVE EXISTING WATER HEATER INDICATED WITH ASSOCIATED FLUE AND CONCRETE NEW FLUE / COMBUSTION AIR AS SHOWN. SEE NEW MECH ROOM PLAN FOR ADDITIONAL DETAILS.
8. REMOVE EXISTING WATER HEATER EXHAUST FLUE FROM WATER HEATER TO ROOF.

⑧ CONSTRUCTION NOTES:

2. REPLACE EXISTING WATER HEATER WITH NEW 199,000 BTU WATER HEATER. CONNECT TO EXISTING DOMESTIC WATER, HW SUPPLY, NATURAL GAS AND ELECTRICAL CONNECTIONS. SEE MECHANICAL SCHEDULE FOR MORE DETAILS.
3. INSTALL NEW WH EXHAUST FLUE FOR WH-1. CONNECT TO EXISTING BOILER FLUE PENETRATING THROUGH ROOF AS SHOWN.



1 MECHANICAL ROOF PLAN - DEMO
SCALE: 3/32"=1'-0"



2 MECHANICAL ROOF PLAN - NEW
SCALE: 3/32"=1'-0"



- # DEMO NOTES:**
- EXISTING BOILER FLUE CAP TO BE REMOVED ENTIRELY. INSTALL NEW ROOF CURB ADAPTER OVER EXISTING ROOF OPENING.
 - REMOVE EXISTING CONDENSING UNIT LOCATED ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING, WIRING, POWER, ETC. REMOVE EXISTING CONDENSING UNIT PAD ON ROOF. SEAL ROOF PENETRATIONS WATER TIGHT.
 - REMOVE EXISTING FRESH AIR LOUVERS SERVING GYMNASIUM. PREPARE OPENING FOR NEW DUCTWORK ROUTED TO EXISTING DUCTWORK.
- + CONSTRUCTION NOTES:**
- INSTALL NEW ADAPTER CURB OVER EXISTING OPENING IN ROOF. RUN NEW WATER HEATER FLUE AND FRESH AIR PIPING THROUGH CURB WITH GOOSENECK. SEAL PENETRATIONS WATER TIGHT.
 - PROVIDE AND INSTALL NEW 3 TON PACKAGED RTU SERVING ART ROOM. CONNECT NEW 3/4" GAS LINE FROM EXISTING ROOF GAS PIPING TO THIS UNIT. PROVIDE WITH SHUT-OFF VALVE AND DRIP LEG.
 - PROVIDE AND INSTALL TWO NEW 10 TON ROOF TOP UNITS SERVING GYMNASIUM. EXTEND NEW 1" GAS LINE TO UNIT AS INDICATED. PROVIDE AND INSTALL SHUT OFF VALVE WITH GAS REGULATOR AND DRIP LEG. ROUTE DUCTWORK WITH ROOF DUCT SUPPORT STANDS. INSULATE DUCTWORK WHERE EXPOSED TO WEATHER. INSTALL ROOF TOP UNITS ON 12" ROOF EQUIPMENT RAILS.
 - VRF CONDENSING UNITS INSTALLED ON 12" ROOF RAILS. REFRIGERANT PIPE PENETRATION THRU VAULT ROOF CURBS.
 - SEAL PREVIOUS FRESH AIR LOUVER OPENING AROUND NEW DUCTWORK WITH DOUBLE LAYER SHEET METAL WITH 2" INSULATION BETWEEN. SEAL WATER TIGHT.

DESIGNED: NN

BY: NN

DATE: MAR, 21, 2016

DESCRIPTION: SEE SHEET

NO. 1

REVISIONS

NO. 1

DESCRIPTION: SEE SHEET

DATE: MAR, 21, 2016

SCALE: SEE SHEET

SHEET NAME: MECHANICAL ROOF PLAN

SHEET NO. M2.4

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CONTRACT NO. 8310-23

CLIENT PROJECT NO. XXXX-XX

NAME: NAHID

21988

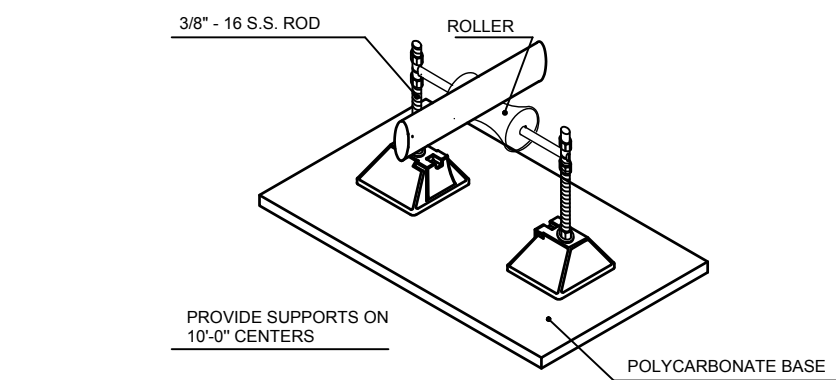
PROFESSIONAL ENGINEER

VRV INDOOR UNIT DETAIL SCHEDULE (CU-1)												
CU-1 - REYQ192TTJU												
Name	FCU	Tmp C °F	TC BTU/h	SC BTU/h	Tmp H °F	HC BTU/h	Airflow CFH	Sound dBA	Voltage	MCA A	MFA A	WxHxD inch
IU-1	FXFQ24TVJU	75.2 / 50%	20314	17344	68	28014	46615	28-36	230V 1ph	0.7	15 A	33.1x9.7x33.1
IU-2	FXZQ09MVJU9	75.2 / 50%	8033	6033	68	11100	19211	29-32	230V 1ph	0.8	15A	22.6x11.3x22.6
IU-3	FXZQ09MVJU9	75.2 / 50%	8033	6033	68	11100	19211	29-32	230V 1ph	0.8	15A	22.6x11.3x22.6
IU-4	FXAQ07PVJU	75.2 / 50%	6336	5806	68	8700	15600	29-35	230V 1ph	0.3	15A	31.3x11.4x9.3
IU-5	FXZQ09MVJU9	75.2 / 50%	8033	6033	68	11100	19211	29-32	230V 1ph	0.8	15A	22.6x11.3x22.6
IU-6	FXZQ09MVJU9	75.2 / 50%	8033	6033	68	11100	19211	29-32	230V 1ph	0.8	15A	22.6x11.3x22.6
IU-7	FXFQ18TVJU	75.2 / 50%	15212	14055	68	20700	44532	28-35.5	230V 1ph	0.6	15 A	33.1x9.7x33.1
IU-8	FXZQ09MVJU9	75.2 / 50%	8033	6033	68	11100	19211	29-32	230V 1ph	0.8	15A	22.6x11.3x22.6
IU-9	FXFQ24TVJU	75.2 / 50%	20314	17344	68	28014	46615	28-36	230V 1ph	0.7	15 A	33.1x9.7x33.1

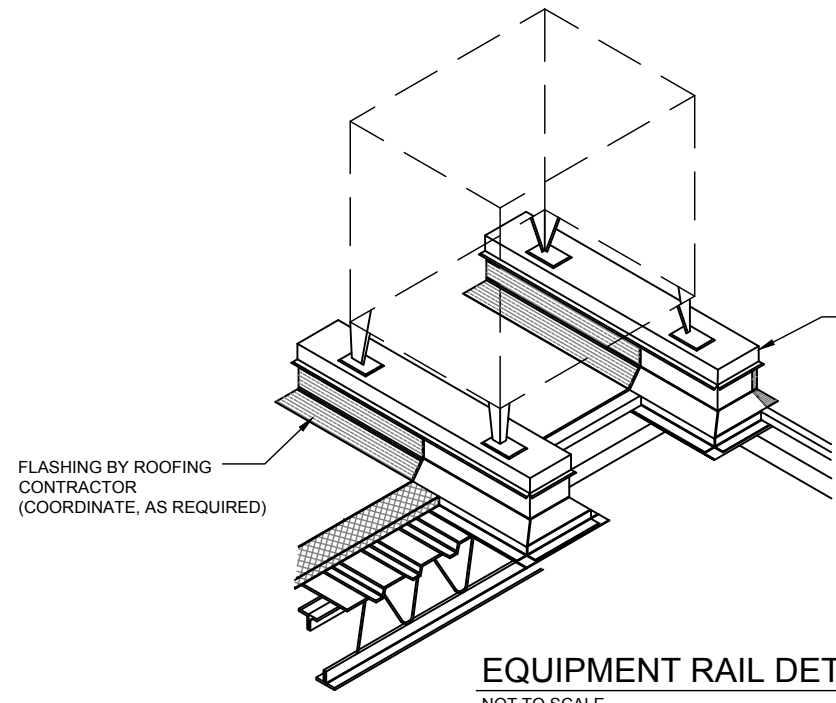
VRV OUTDOOR UNIT DETAIL SCHEDULE (CU-1)								
Name	MODEL	COMB %	Tmp C °F	CC BTU/h	Rq CC BTU/h	Tmp H °F	HC BTU/h	Rq HC BTU/h
CU-1	REYQ192TTJU	75.2 / 50%	20314	17344	68	28014	46615	28-36

Name	Model	Voltage	MCA A	Fuses	W X H X D Inch	Weight lbs.
CU-1	REYQ192TTJU	230V / 3PH	43	50A	48.9X66.7X30.2	703
	*REYQ120TTJU					
	*REYQ72TTJU					

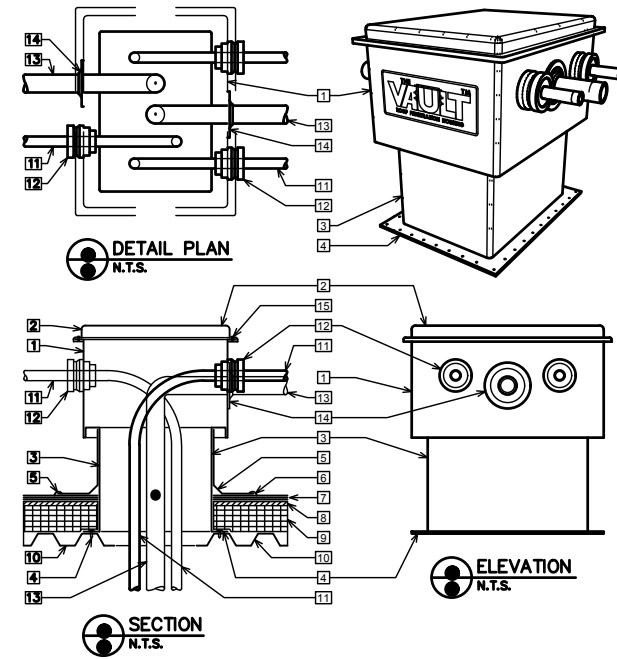
BSV-DETAIL					
Name	Model	Voltage	MCA	W X H X D Inch	Weight lbs.
BSV - 1	BSQ96TVJ	230V / 1 PH	0.1	15.3X8.1X2.8	33
BS 2	BSQ36TVJ	230V / 1 PH	0.1	15.3X8.1X2.8	27
BS 3	BSQ36TVJ	230V / 1 PH	0.1	15.3X8.1X2.8	27
BS 4	BSQ36TVJ	230V / 1 PH	0.1	15.3X8.1X2.8	27



GAS STAND SUPPORT DETAIL
NOT TO SCALE

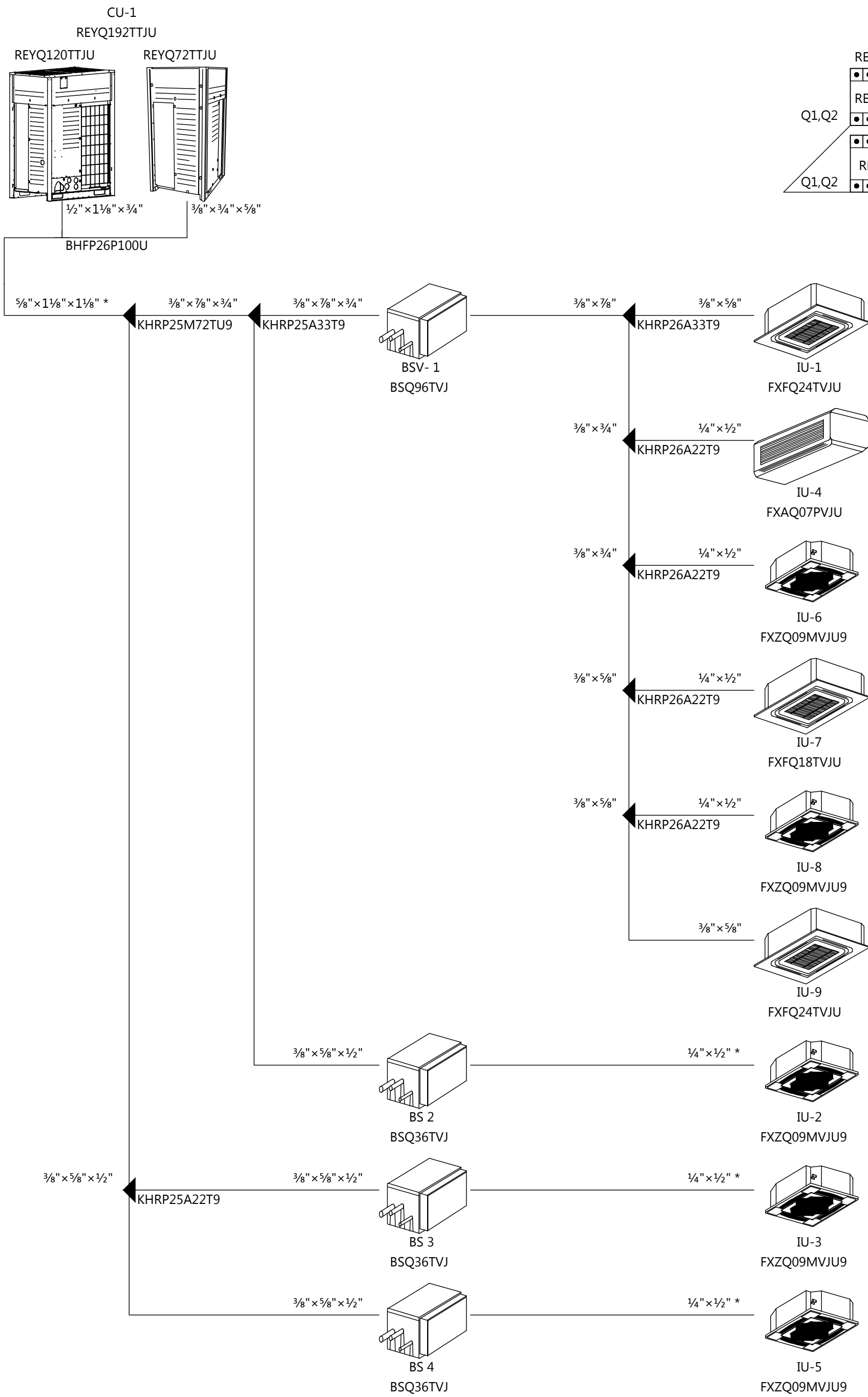


EQUIPMENT RAIL DETAIL
NOT TO SCALE



ROOF PENETRATION HOUSING DETAIL
NOT TO SCALE

- THE VAULT™**
ROOF PENETRATION HOUSING
- 1 THE WALL (SPECCY MODEL)
 - 2 MATCHING PREFAB ALUMINUM CAP
 - 3 MATCHING ALUMINUM CURB 1/4\"/>
 - 4 TO COVER WITH VENTING SYSTEM CURB MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS
 - 5 ALUM FLANGE, FASTEN TO ROOF DECK
 - 6 SIS FLASHING MEMBRANE
 - 7 COMPRESSED GASK WITH RUBBERIZED ASPHALT SEALANT
 - 8 ROOFING SYSTEM
 - 9 RECOVERY BOARD
 - 10 RIGID INSULATION
 - 11 METAL ROOF DECK
 - 12 CONDUIT, PPIPE, REFRIGERANT LINE, ETC. SIZES FROM 1/2\"/>
 - 13 EXIT SEAL - FOR SIZES FROM 1/2\"/>
 - 14 CONDUIT, PPIPE, REFRIGERANT LINE, ETC. SIZES FROM 1/2\"/>
 - 15 EXIT SEAL - FOR SIZES FROM 1/2\"/>
 - 16 VANGAL RESISTANT STAINLESS SCREWS
 - 17 FASTEN CURB FLANGE TO ROOF DECK
- CONTACT RPH AT 1-800-984-0945

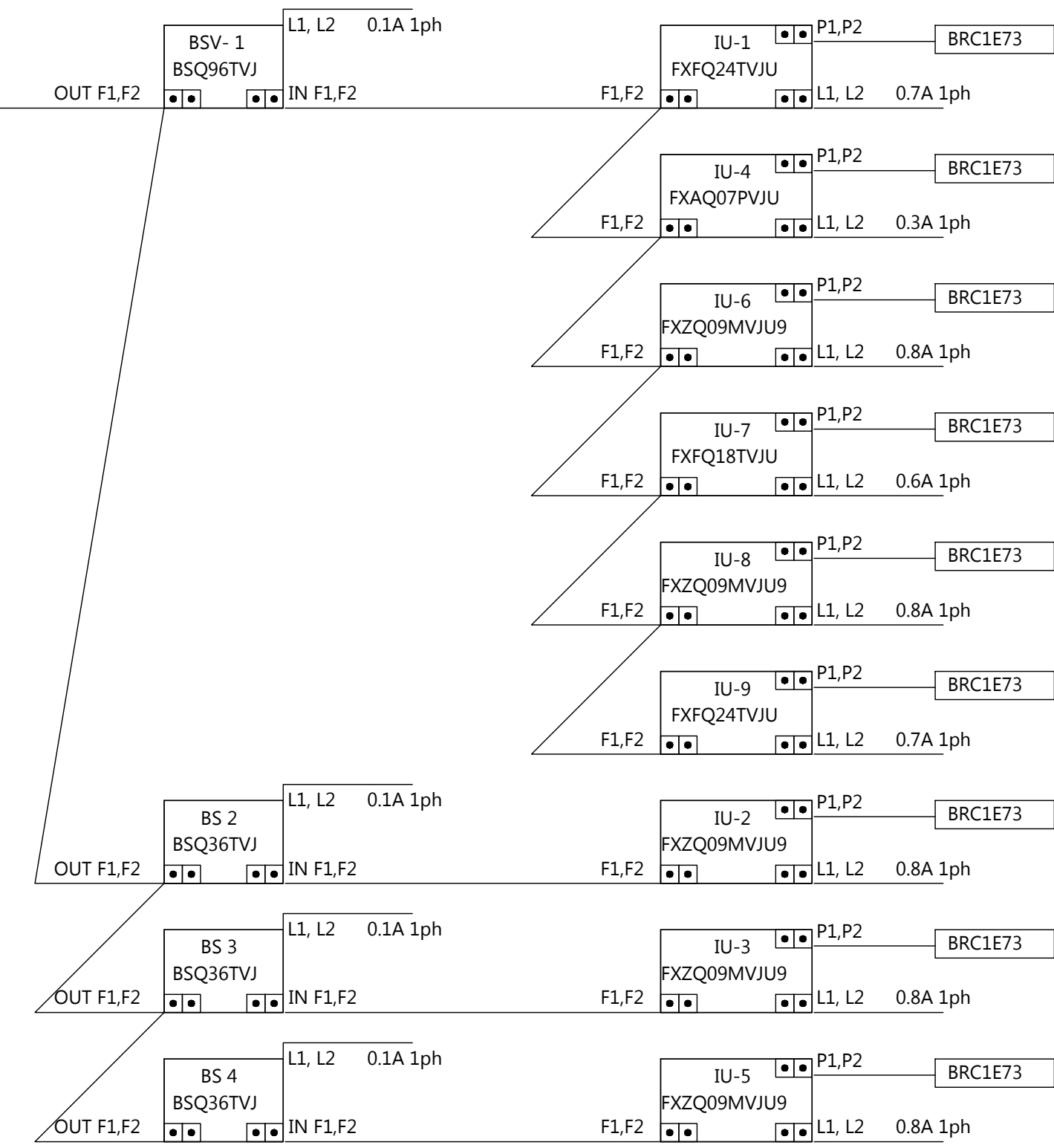


PIPING SCHEMATIC

NOT TO SCALE

- STANDARD CONSTRUCTION:
- 16 GAUGE GALVANIZED STEEL
 - LIMITED CONSTRUCTION WITH INTEGRAL BASE PLATE
 - WELDED CONSTRUCTION
 - WOOD NAILER
 - GALVANIZED COUNTERFLASHING WITH LAG SCREWS
 - INTERNALLY REINFORCED
 - RAIL IS RAISED GANT ON ER-4 STYLE

ROOFTOP EQUIPMENT SUPPORT RAIL DTL.
NO SCALE



WIRING DIAGRAM

NOT TO SCALE

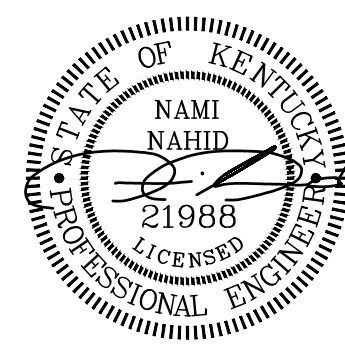
VRF NOTE:

REFRIGERANT PIPING NOTE:
CONTRACTOR SHALL COORDINATE WITH MANUFACTURE TO DETERMINE PIPING SIZES.

ROUTE CONDENSATE LINES TO NEAREST WALL, JAN SINK OR FLOOR DRAIN.

MULTI-PORT BRANCH SELECTOR VALVES BOXES SHALL BE ACCEPTABLE, UPON ENGINEER'S APPROVAL
CONTRACTOR SHALL COORDINATE WITH MANUFACTURER FOR MULTI-PORT BOX LAYOUT AND PIPING SIZING / ROUTING.
ENGINEERING SHALL APPROVE LAYOUT

PROVIDE A STAND-ALONE I-TOUCH CONTROLLER FOR OFFICE AREA VRF SYSTEM.



CONTRACT NO. 8310-23
CLIENT PROJECT NO. XXXX-XX
NAME: NAMI NAHID
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2016 HVAC RENOVATION
ELKTON, KY

REVISED	NO	DESCRIPTION	DATE	BY	DESIGNED	DRAWN	REVIEWED	APPROVED	SCALE
					NN		WR	NN	
					NN		WR	NN	
					NN		WR	NN	
					NN		WR	NN	
					NN		WR	NN	

DATE: MAR, 21, 2016
SCALE: SEE SHEET
SHEET NAME: MECHANICAL
REF. PLAN
SHEET NO.

M2.5

DIFFUSER, GRILLE, & REGISTER SCHEDULE									
UNIT NO.	FRAME SIZE	NECK SIZE	# OF SLOTS	TYPE	LOCATION & MOUNTING	MATERIAL	FINISH	MODEL NO.	NOTES
SD-1	24X24	SEE PLAN	3	PLAQUE FACE	CEILING / LAY-IN	ALUM.	OFF-WHITE	DAT	1,2
RG-1	24X24	14" ROUND	---	EGG-CRATE	CEILING/LAYIN	STEEL	OFF-WHITE	50FF	1,3
RG-2	FIELD VERIFY	SEE PLAN	---	LOUVERED FACE	SIDE-WALL MTD	STEEL	OFF-WHITE	33RL	1
NOTES: 1. BASED ON TITUS BASED ON TITUS 2. PROVIDE COVER INSULATION OVER DIFFUSER. 3. PROVIDE AND INSTALL 1" RETURN FILTER GRILLE.									

PIPING, DUCTWORK, AND INSULATION SCHEDULE
REFRIGERANT PIPING WEATHER EXPOSED REFRIGERANT PIPING: RIDGID COPPER TYPLE L, INSULATED WITH 1" BLACK FOAM AND ADDITIONAL UV PROTECTED PVC JACKET OVER INSTALLATION. PENETRATE REFRIGERANT PIPING THRU SIDE-WALL WITH A SLEEVED OPENING AND SEALED WATER TIGHT AFTER INSTALLATION. REFRIGERANT PIPING WITHIN BUILDING: RIDGID COPPER TYPLE L, INSULATE PIPING WITH 1" BLACK FOAM. SUPPORT PIPING FROM STRUCTURE WITH UNISTRUTS FLEXIBLE INSULATED COPPER SHALL ONLY BE USED FOR SINGLE UNIT CONNECTION WITH MAXIMUM LENGTH OF 6'-0". DUCTWORK AND AIR DEVICES INSULATION. DUCTWORK AS PER LATEST SMACNA GUIDELINES FOR LOW PRESSURE SYSTEM. INSULATED ALL (SUPPLY, RETURN, EXHAUST, OUTSIDE AIR) WITH DOUBLE BUBBLE WRAP TYPE (R-8) ALL DIFFUSERS AND GRILLES SHALL HAVE ABOVE DIFFUSER MOLDED INSULATION ON FACE PLATES. DOMESTIC WATER PIPING. DOMESTIC HOT/COLD WATER SHALL BE TYPE L COPPER WITH 1" BLACK FOAM INSULATION. MARK CONTECT AND FLOW EVERY 10'

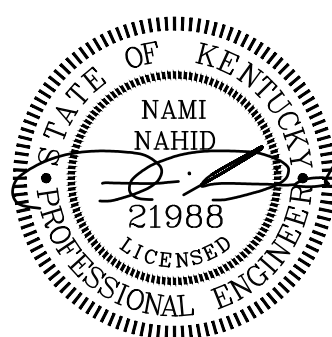
HVAC CONTROLS SYSTEM
Main Building Automation System: All NEW HVAC CONTROL SHALL BE STAND-ALONE OPERATION. PROVIDE PROGRAMMABLE THERMOSTATS FOR ALL RTU AND SPLIT SYSTEMS. VRF SYSTEMS SHALL BE WITH AN I-TOUCH CONTROLLER INSTALLED IN MAIN OFFICE AREA AND REMOTE CONTROLLERS FOR ALL INDOOR UNITS.

ROOF TOP UNIT SCHEDULE			
TAG	RTU-1	RTU-2	RTU-3
MAKE	RHEEM	RHEEM	RHEEM
MODEL	RGEA16	RKKL B120CL	RKKL B120CL
STAGES	2	2	2
TYPE	PACKAGE RTU VERTICAL DISCHARGE	PACKAGE RTU HORIZONTAL DISCHARGE	PACKAGE RTU HORIZONTAL DISCHARGE
VOLTAGE	208 / 3	208-230V - 3PH	208-230V - 3PH
MCA (A)	20	51	51
MOP (A)	25	60	60
EER / SEER	11.8/14	11.2/NA	11.2/NA
IEER	---	12.2	12.2
AIRFLOW (CFM)	800 / 1200	4,000	4,000
ESP (in. H2O)	0.50	0.5	0.5
MOTOR SIZE (HP)	1/2	2.0	2.0
TOTAL CAPACITY (COOLING)	35,400	119,000	119,000
SENSIBLE CAPACITY	24200	85,300	85,300
REFRIGERANT	R410a	R410a	R410a
HEATING TYPE	GAS	GAS	GAS
INPUT SIZE (BTU)	46,000 / 60,000	112,500 / 225,000	112,500 / 225,000
OUTPUT	37,200 / 48,600	91,000 / 182,250	91,000 / 182,250
STAGES	2	2	2
EFFICIENCY	82%	82%	82%
WEIGHT (LBS)	421	1020	1020
NOTES: 1. PROVIDE WITH DISCONNECT 2. 2" MERV 8 FILTER WITH HINGED ACCESS AT UNIT. 3. PROVIDE WITH PROGRAMMABLE THERMOSTAT 4. PROVIDE WITH HAIL GUARD			

WATER HEATER SCHEDULE	
UNIT NO	WH-1
MANUFACTURER	LOCHINVAR
MODEL	PNR200-80
QTY	2
STORAGE CAPACITY (GAL)	80
FUEL TYPE	GAS
BTU/hr INPUT	199,999
VOLTAGE	115 V AC
GAS CONNECTION	3/4"
NOTES: 1. PROVIDE ANY ADDITIONAL ACCESSORIES FOR COMPLETE UNIT INSTILLATION. COORDINATE WITH ELECTRICAL.	

CIRCULATION PUMP SCHEDULE	
UNIT NO	CIRC. PUMP
MANUFACTURER	BELL AND GOSSET
MODEL	A 142F PL30
POWER (HP)	1/12
PHASE	1
VOLTAGE	115
GPM	20 GPM @ 10FT
NOTES: 1. PROVIDE ANY ADDITIONAL ACCESSORIES FOR COMPLETE UNIT INSTILLATION. COORDINATE WITH ELECTRICAL.	

AIR HANDLING UNIT SCHEDULE	
UNIT NO.	AHU-1 TWINNED
QTY	1
MANUFACTURER	RHEEM
SERIES	RAWL
TYPE	VERTICAL
SYSTEM TONNAGE	7.5
AIR HANDLING UNIT	(2) R92PA
QUANTITY	2
MOTOR	VARIABLE - ECM
AIR FLOW CFM	(2) 1750
E.S.P. IN WG.	0.5
SPEED	MED / LO
FAN H.P.	(2) 3/4
POWER	115 / 1
FLA (AMP)	(2) 8.3
HEATING	GAS - TWIN FURNACE
TYPE	CONCEALED COMB.
STAGES	MODULATING HEAT
EFFICIENCY	92%
HIGH INPUT (BTUh)	84000
HIGH OUTPUT (BTUh)	78120
COOLING COIL	
MODEL	RCCL-D5013S
CAPACITY (BTU/HR)	85100
STYLE COIL	L
DRAIN PAN	STAINLESS STEEL
CERTIFICATION	ARI
CONDENSING UNIT	
SERIES	RAWL-090
COOLING STAGES	2
SEER	13.37
POWER	230 / 3
COMPRESSOR	SCROLL TWO-STAGE
MCA (AMP)	34
FUSE SIZE (AMP)	50
ACCESSORIES	
FILTER TYPE	2" (MERV-13)
LOW AMB COOLING	31 DEG F.
HEAD PRES. CONTROL	YES
THERMOSTAT	ECONET - PROG.
NOTES: 1. PROGRAMMABLE THERMOSTAT WITH WALL PLATE. 2. SYSTEM SHALL BE UL LISTED 3. 2" FILTER HOUSING WITH ACCESS DOOR 4. OTHER ACCEPTABLE MANUFACTURERS: LENNOX - TRANE MINIMUM SEER: 16	



CONTRACT NO. 8310-23

STEWART RICHEY
CONTRACTING GROUP

ENGINEERING

NAME
NAMI NAHID
21988
PROFESSIONAL ENGINEER

CLIENT PROJECT NO. XXXX-XX

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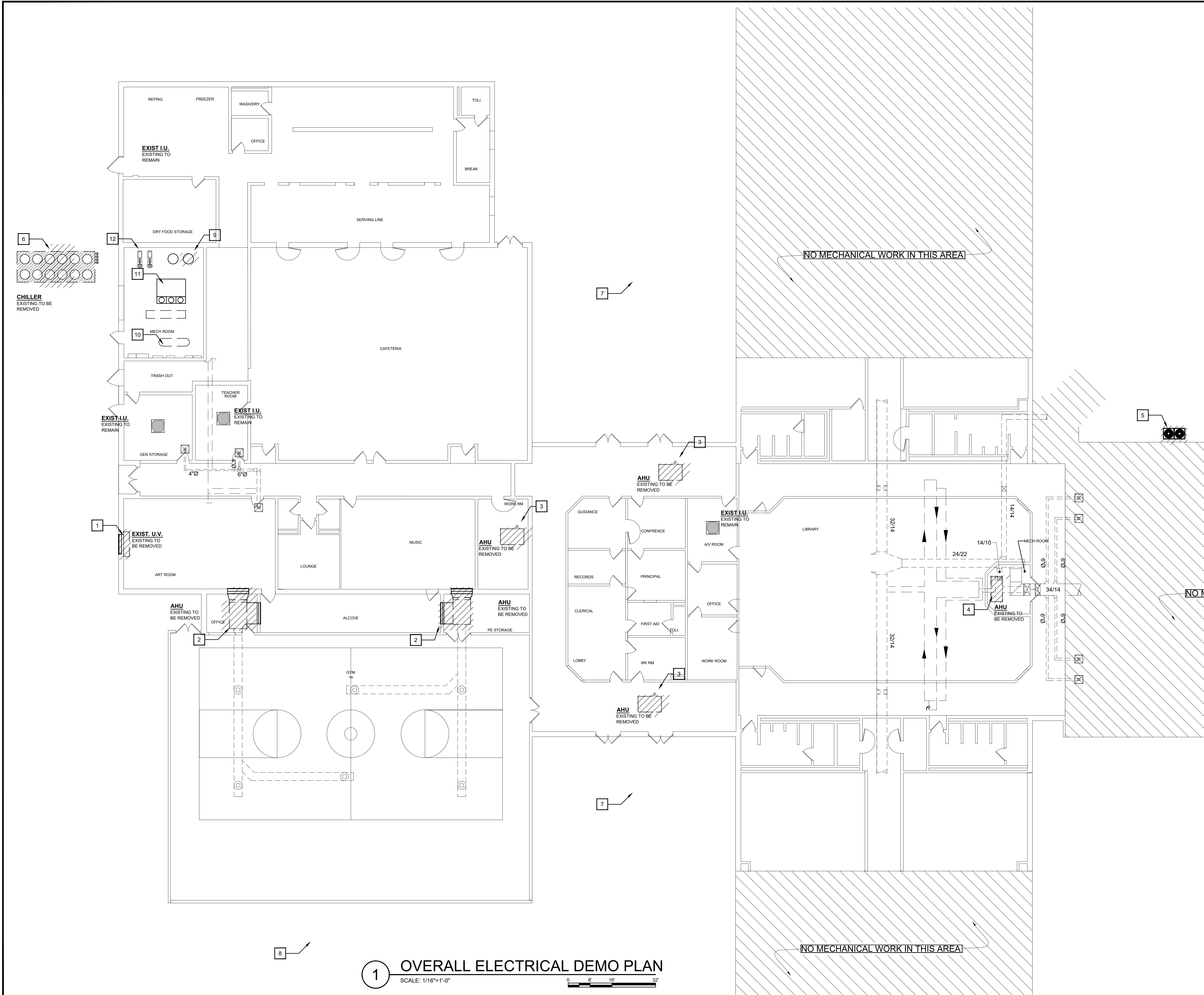
DESIGNED		DRAWN		REVIEWED		APPROVED	
NN	NN	NN	NN	WR	NN	NN	NN
REVISIONS							
NO	DESCRIPTION	DATE	BY	THIS MARK SHOULD MEASURE EXACTLY 1"			

DATE:
MAR, 21, 2016

SCALE:
SEE SHEET

SHEET NAME:
MECHANICAL
SCHEDULES

SHEET NO.



1 OVERALL ELECTRICAL DEMO PLAN
SCALE: 1/16"=1'-0"

DEMO NOTES:

1. DISCONNECT EXISTING UNIT VENTILATOR FOR REMOVAL. REMOVE ASSOCIATED CONDUIT AND WIRING.
2. DISCONNECT EXISTING AIR HANDLING UNITS SERVING GYMNASIUM FOR REPLACEMENT WITH ROOF TOP UNITS. REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO PANEL H. EXISTING 20A/3P CIRCUIT BREAKERS IN PANEL H SERVING EXISTING UNITS SHALL BE REMOVED AND TURNED OVER TO OWNER.
3. DISCONNECT EXISTING AIR HANDLING UNITS SERVING OFFICE AREA FOR REPLACEMENT WITH VRF SYSTEM. REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO PANEL H.
4. DISCONNECT VERTICAL AIR HANDLING UNIT SERVING MEDIA CENTER WITHIN MECHANICAL CLOSET AREA. RETAIN EXISTING 20A, 3P BRANCH CIRCUIT FROM PANEL DPH TO SERVE NEW AIR HANDLING UNIT.
5. DISCONNECT EXISTING CONDENSING UNIT. RETAIN EXISTING 100A, 3P BRANCH CIRCUIT FROM PANEL DPH TO SERVE NEW COMPRESSOR.
6. DISCONNECT CHILLER FOR REMOVAL. REMOVE ASSOCIATED CONDUIT TO UNDERGROUND. REMOVE ALL WIRING. DISCONNECT AND REMOVE 225A/3P CIRCUIT BREAKER IN EXISTING MSG TO MAKE ROOM FOR NEW CIRCUIT BREAKERS. RETURN CIRCUIT BREAKER TO OWNER.
7. ELECTRICAL CONTRACTOR SHALL RETROFIT ALL EXTERIOR POLE LIGHT FIXTURES WITH NEW LED LAMP, TYPICAL OF 12. REMOVE EXISTING LAMP AND BALLAST AND REWORK.
8. DISCONNECT AND REMOVE EXISTING GROUND MOUNTED FLOOD LIGHTS FOR REPLACEMENT. RETAIN BRANCH CIRCUIT FOR RECONNECTION TO NEW LIGHT FIXTURE, TYPICAL OF 3.
9. DISCONNECT WATER HEATER FOR REMOVAL.
10. DISCONNECT AIR COMPRESSOR AND AIR DRYER FOR REMOVAL. REMOVE ALL ASSOCIATED CONDUIT AND WIRING. LABEL CIRCUIT BREAKER AS "SPARE".
11. DISCONNECT ANY BOILER CONTROLS/CONTROL PANEL FOR REMOVAL. REMOVE ALL ASSOCIATED CONDUIT AND WIRING. LABEL CIRCUIT BREAKER AS "SPARE".
12. DISCONNECT PUMPS PANEL FOR REMOVAL. REMOVE ALL ASSOCIATED CONDUIT AND WIRING. DISCONNECTS, ETC., LABEL CIRCUIT BREAKER AS "SPARE".

6/13/2016

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CLIENT PROJECT NO. XXXX-XX
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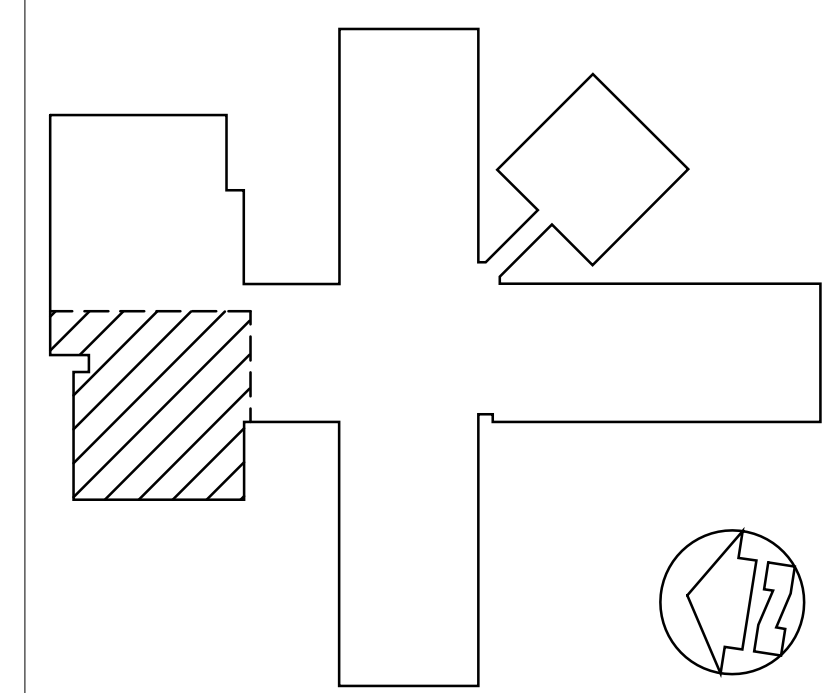
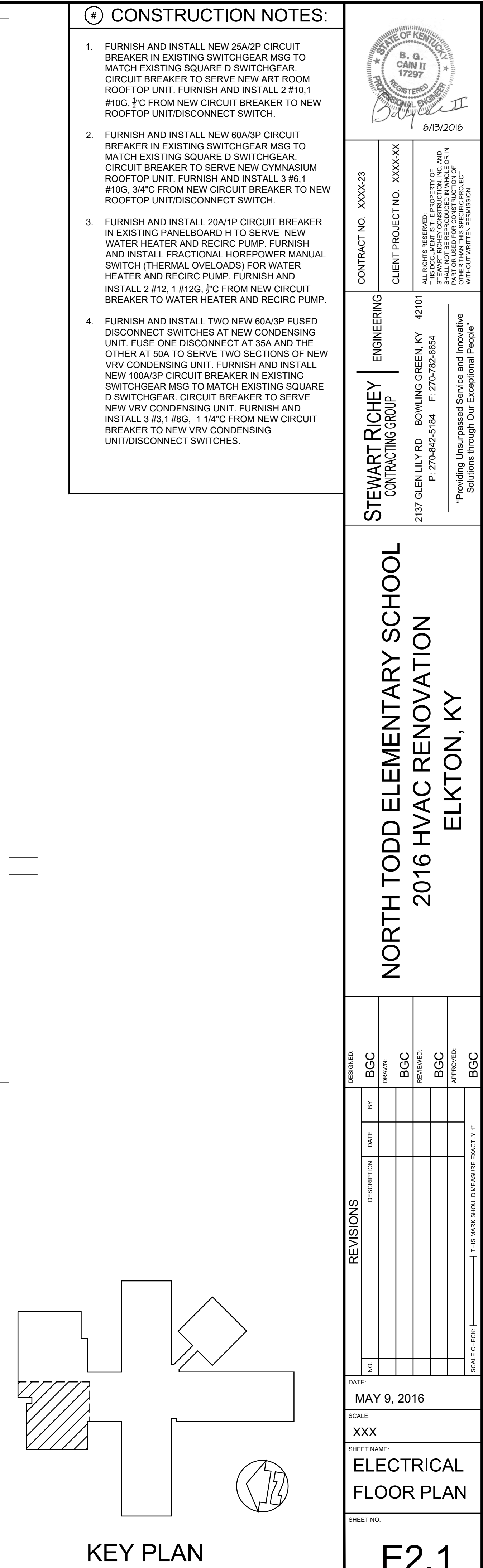
ENGINEERING
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CONTRACTING GROUP

SOUTH TODD ELEMENTARY SCHOOL
2016 HVAC RENOVATION
ELKTON, KY

DESIGNED	BY	DATE	DESCRIPTION
BGC	BGC		
BGC	BGC		
BGC	BGC		
BGC	BGC		

DATE: JUNE 13, 2016
SCALE: SEE SHEET
SHEET NAME: ELECTRICAL DEMO PLAN
SHEET NO. E-2.0

KEY PLAN

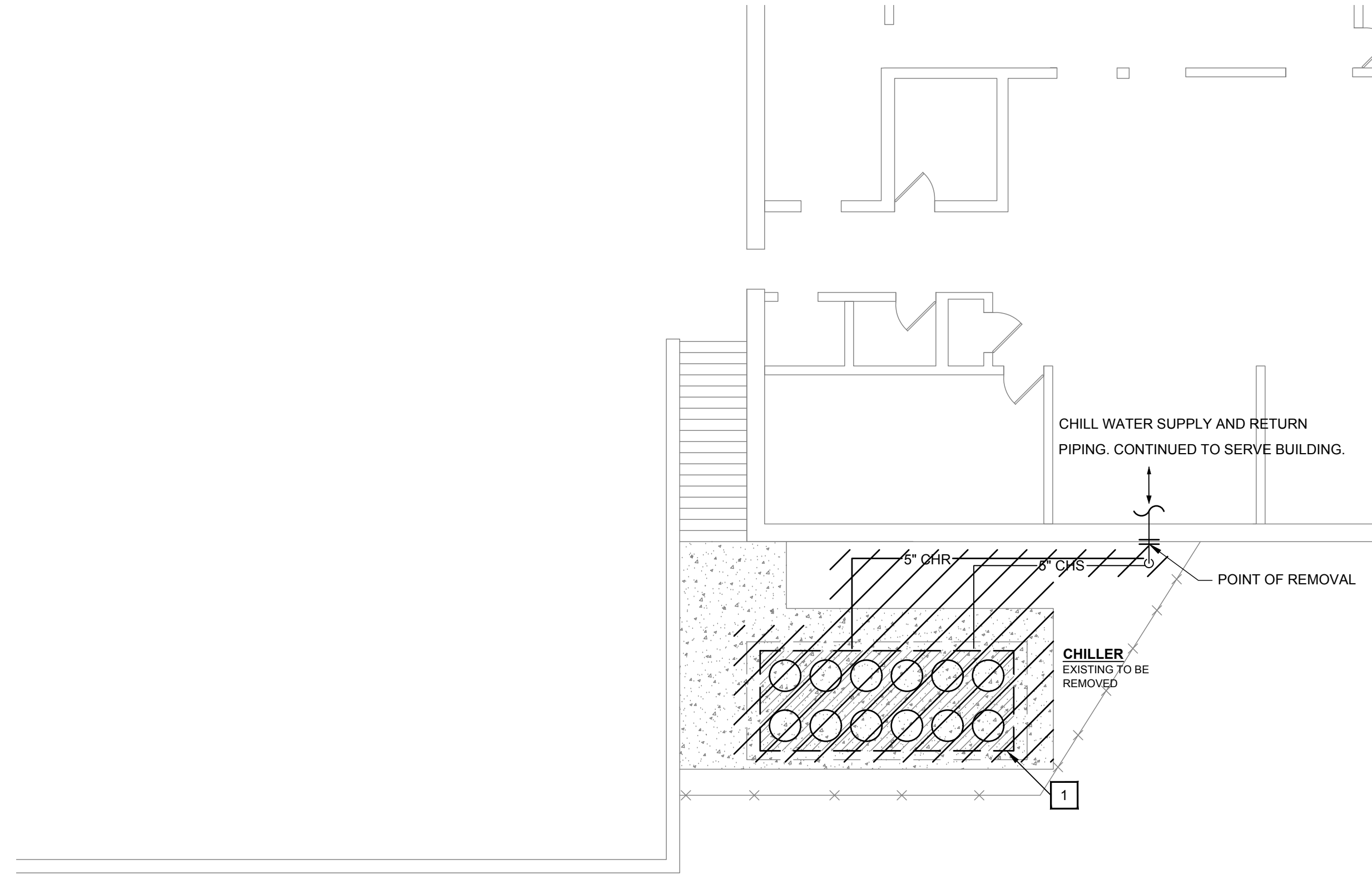




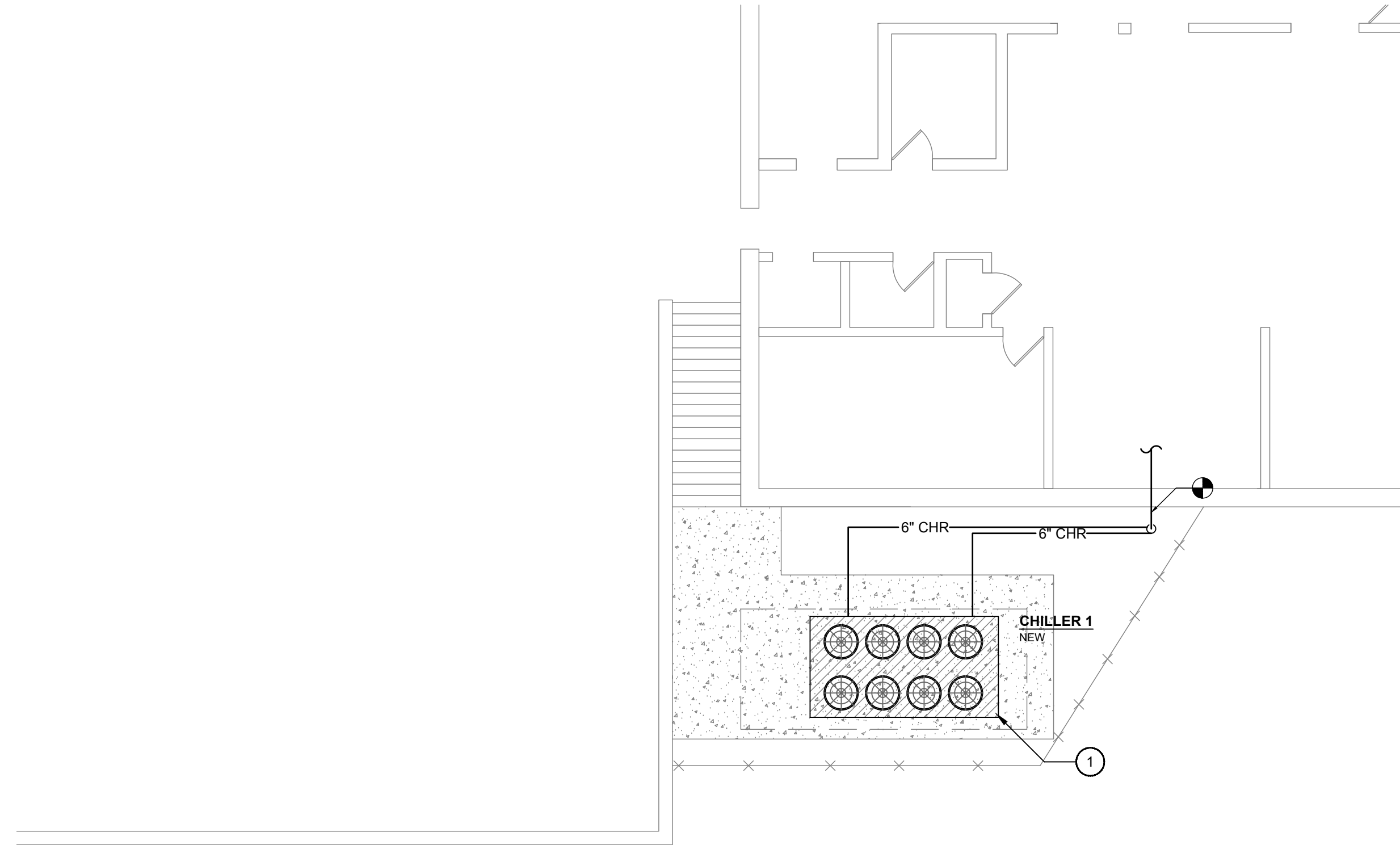
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| <p>6/13/2016</p> | | | |

DESIGNED	REVISIONS			BY	DATE	DESCRIPTION	BGC
							DRAWN
							BGC
							REVIEWED
							BGC
							APPROVED
							BGC

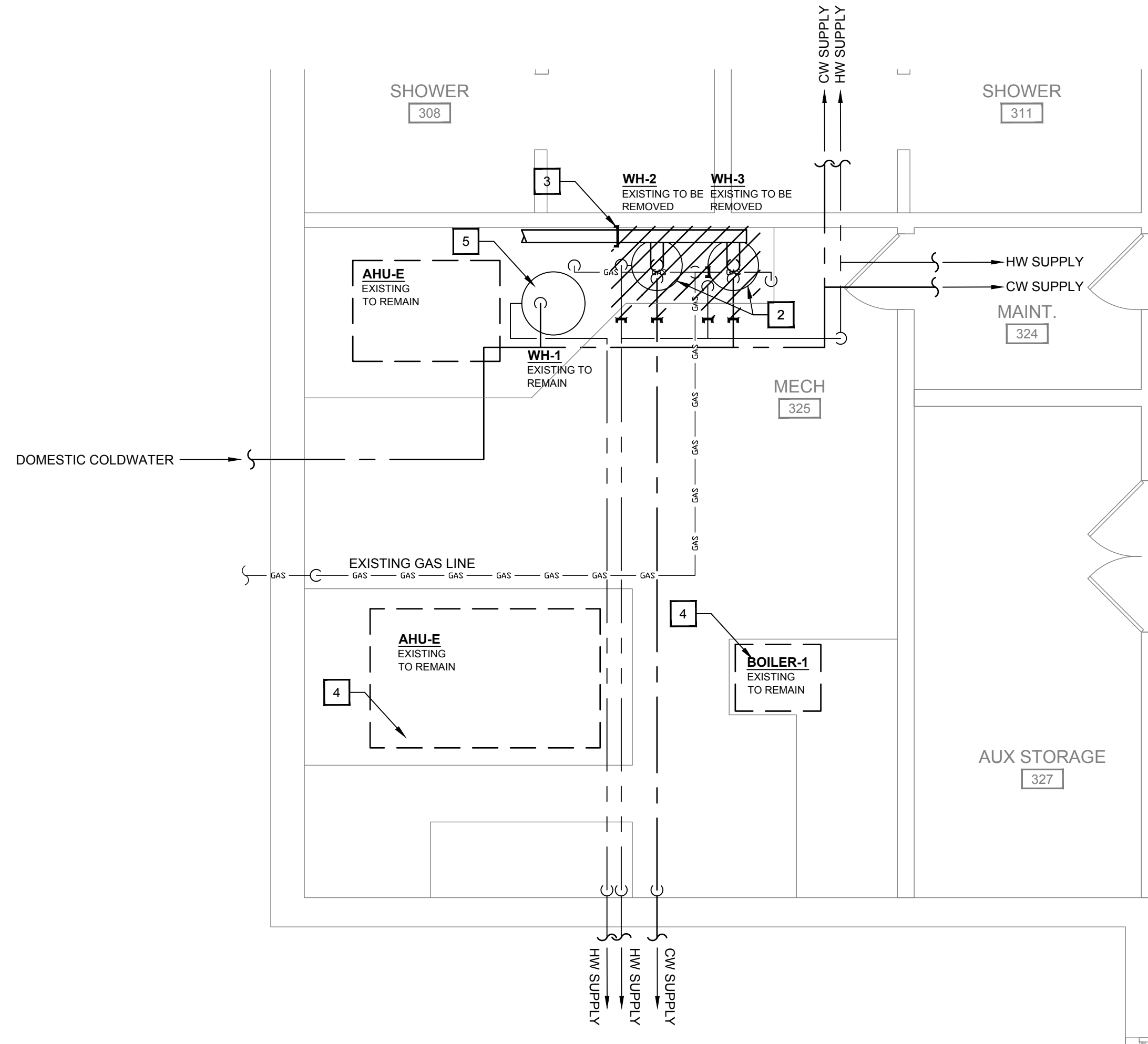
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SHEET NO.:	E2.2		



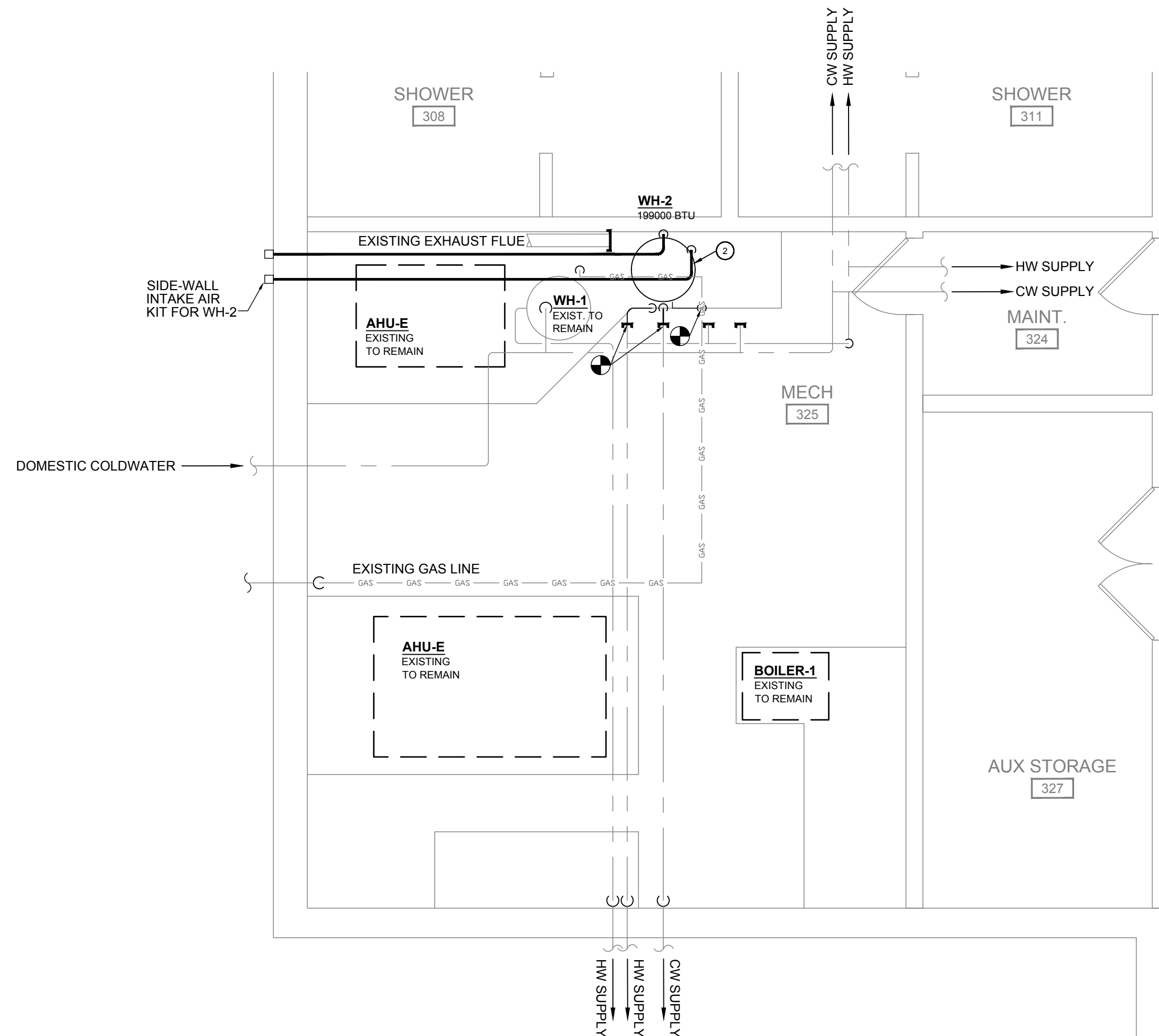
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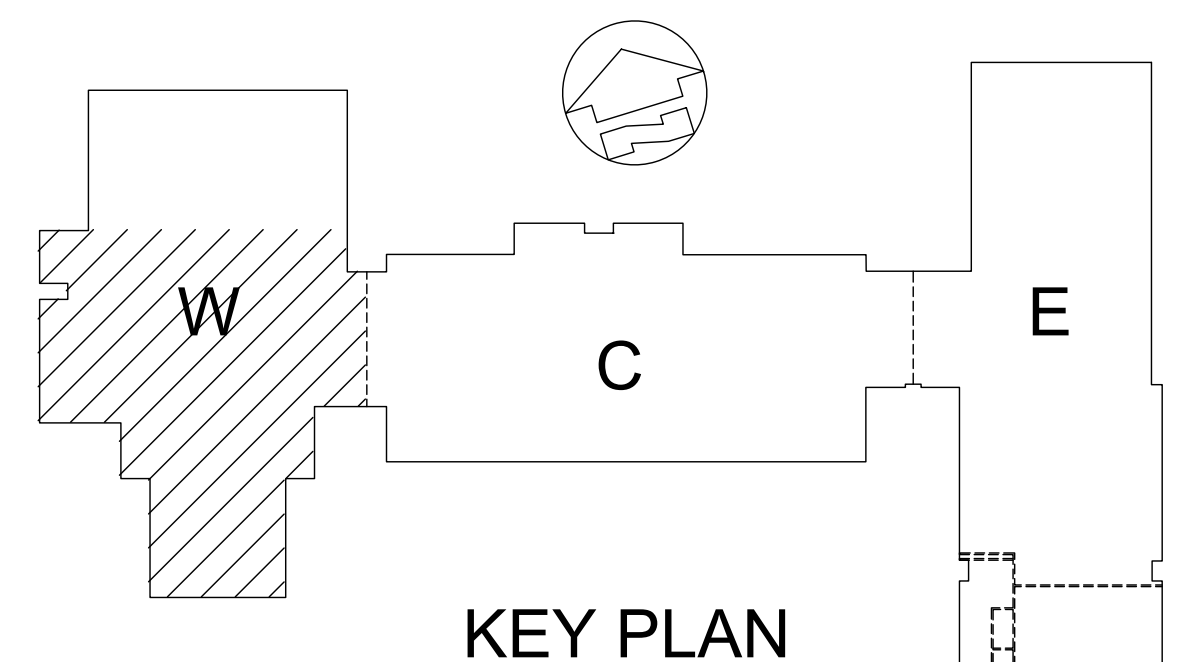
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SCALE: 1/8"=1'-0"



2 WEST WING MECHANICAL ROOM DEMO
SCALE: 1/4"=1'-0"



4 WEST WING MECHANICAL ROOM
SCALE: 1/4"=1'-0"



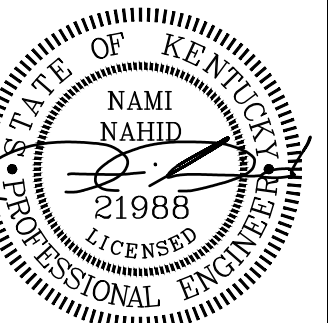
KEY PLAN

DEMO NOTES:

1. REPLACE EXISTING AIR COOLED PACKAGE CHILLER WITH NEW. REMOVE ALL PIPING UP TO POINT OF REMOVAL INDICATED. PREPARE SUPPLY AND RETURN PIPING CONNECTION FOR CONNECTION TO NEW UNIT.
2. REMOVE EXISTING HOT WATER HEATERS (WH-2,3). REMOVE ASSOCIATED EXPANSION TANKS, GAS LINE, PIPING, POWER, WIRING, CONTROLS, EXHAUST FLUE, ETC. PREPARE EXISTING PIPING FOR CONNECTION TO NEW WATER HEATER. SE NEW MECHANICAL PLAN FOR ADDITIONAL DETAILS.
3. REMOVE EXISTING EXHAUST FLUE AND CAP AT LOCATION INDICATED. PREPARE FOR CONNECTION TO NEW EXHAUST GAS
4. EXISTING BOILER AND AHU TO REMAIN.
5. WH-1 AND ASSOCIATED PIPING TO REMAIN.

CONSTRUCTION NOTES:

1. PROVIDE AND INSTALL NEW PACKAGE AIR COOLED CHILLER. NEW PACKAGE CHILLER TO BE INSTALLED ON EXISTING CONC PAD. INSTALL SHUT OFF VALVE AT CHILLED WATER PIPE CONNECTIONS.
2. REPLACE EXISTING WATER HEATER WITH NEW 199,000 BTU WATER HEATER. UTILIZE EXISTING CONNECTIONS FOR DOMESTIC WATER, HOT WATER SUPPLY, HOT WATER RETURN AND NATURAL GAS. FIELD VERIFY CONDITION. CONNECT NEW GAS PIPING TO EXISTING WITH NEW SHUT OFF VALVE AND REGULATOR. INSTALL NEW EXPANSION TANK SIZED PER MANUFACTURES RECOMMENDATION. INSTALL NEW CIRCULATING PUMP. COORDINATE WITH ELEC. FOR WIRING. SEE MECHANICAL SCHEDULE FOR ADDITIONAL DETAILS ON WATER HEATER AND CIRCULATING PUMP.



CONTRACT NO. 8310-23
CLIENT PROJECT NO. XXXX-XX
NAME NAMI NAHID
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TODD COUNTY MIDDLE SCHOOL
2016 HVAC RENOVATION
ELKTON, KY

REVISIONS	NO	DESCRIPTION	DATE	BY	DRAWN	WR	REVIEWED	NN	APPROVED	NN	
SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1"											

DATE: MAR, 21, 2016
SCALE: SEE SHEET
SHEET NAME: WEST WING MECH PLAN
SHEET NO.

M3.1

REPLACE EXISTING AIR COOLED SPLIT CHILLER WITH NEW. REMOVE AND REPLACE EXISTING PIPING INDICATED WITH HATCH. REMOVE ALL WALL HANGERS ON EXTERIOR. SEAL ANY VOID WHERE FASTENERS REMOVED.

REPLACE EXISTING SHELL IN TUBE HEAT EXCHANGER WITH NEW PLATE AND FRAME HEAT EXCHANGER.

EXISTING SUPPLY AND RETURN PIPING TO REMAIN BEYOND POINT OF REMOVAL. PREPARE EXISTING FOR CONNECTION TO NEW EVAPORATOR LOCATED IN MECH ROOM.

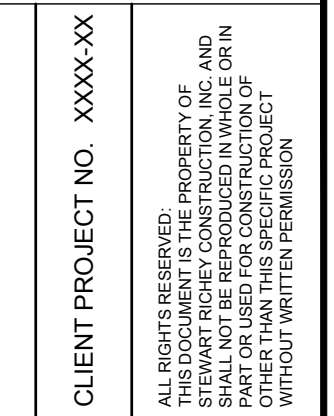
REMOVE AND REPLACE EXISTING LIQUID AND SUCTION REFRIGERATION LINES AS INDICATED. UTILIZE EXISTING OPENINGS IN WALL AND SEAL AT ANY EXTERIOR WALL.

REMOVE EMERGENCY GENERATOR AND ASSOCIATED GAS PIPING AND TANKS. SEE ELEC DRAWINGS FOR MORE DETAILS.

EXISTING WATER HEATER, BOILER AND ASSOCIATED PIPING TO REMAIN.



1. NEW CHILLER CONDENSING SECTION TO BE INSTALLED ON EXISTING CONCRETE PAD, WHERE OLD CHILLER WAS REMOVED. FROM (FIELD VERIFY CONDITION OF EXISTING CONC PAD. SPLIT CHILLER BASED ON JULY 2018 AS2125D WITH EVAPORATOR SECTION IN CENTRAL WING MECH ROOM.
2. NEW REFRIGERANT PIPING WITH 2" BLACK FOAM INSULATION AND SEALED UV PROTECTED PVC JACKET. REFRIGERANT PIPING SHALL BE A MINIMUM 8" ABOVE FINISHED FLOOR AND SUPPORTED MIN 4" ON CENTER WITH SUPPORTING BRACKETS. PENETRATE BUILDING WHERE SHOWN INTO THE MECHANICAL ROOM AND SEAL PENETRATIONS WATER TIGHT.
3. NEW CHILLER EVAPORATOR INSTALLED ON EXISTING CONC PAD, INSTALL SHUTOFF VALVES, DRYERS, SILE GLASS, ETC. PER MANUFACTURES RECOMMENDATIONS ON REFRIGERANT PIPING CONNECTIONS.
4. PROVIDE AND INSTALL NEW GENERATOR. ROUTE NEW 3/4" NATURAL GAS LINE TO GENERATOR LOCATION FROM CENTRAL WING MECH ROOM. SEE ELEC DRAWINGS FOR MORE DETAILS. PROVIDE AND ADDITIONAL GAS PRESSURE REGULATOR PER MANUFACTURES RECOMMENDATIONS WITH SHUT OFF VALVE AND DRIP LEG AT UNIT.



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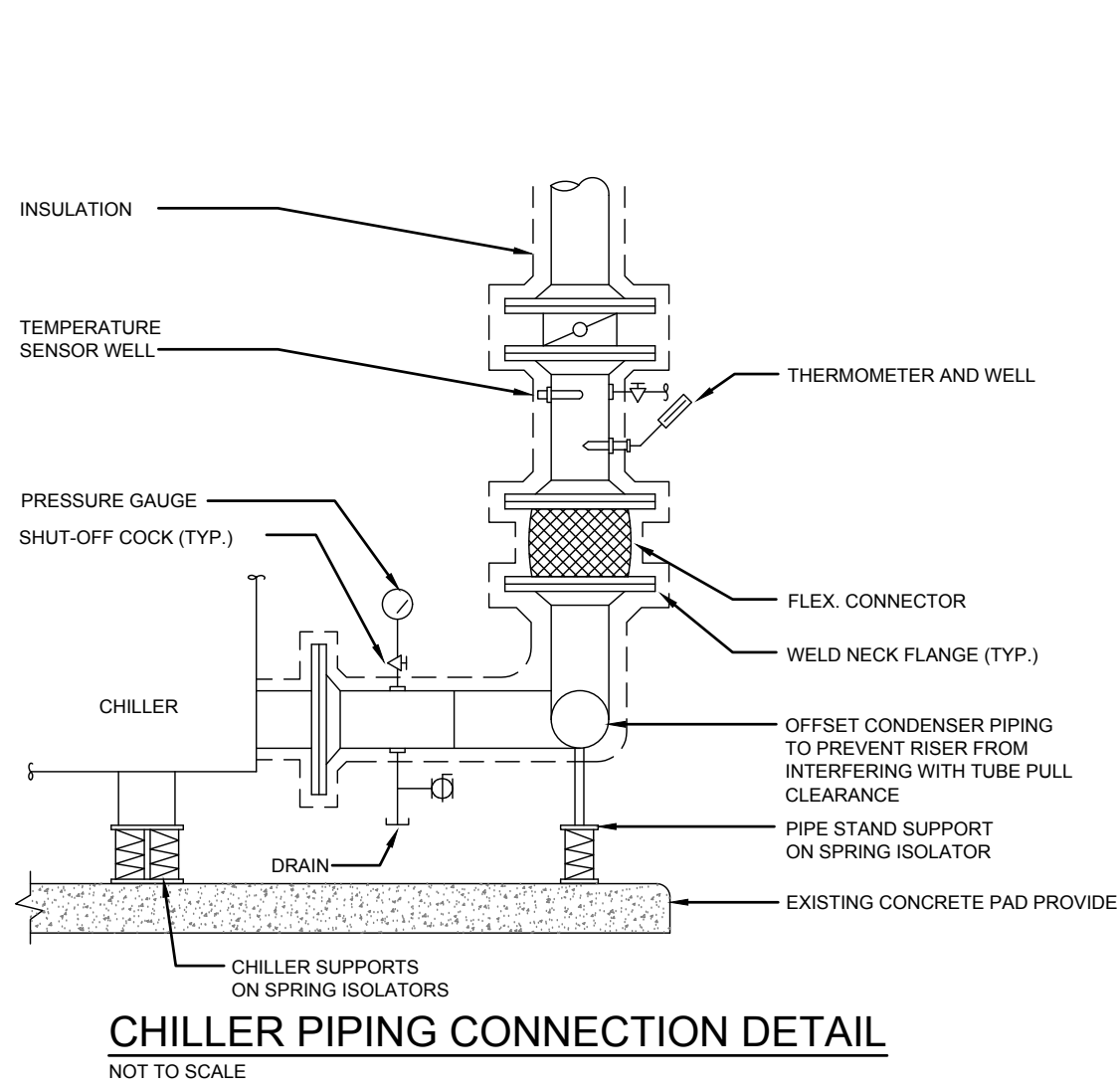
TODD COUNTY MIDDLE SCHOOL
2016 HVAC RENOVATION
ELKTON, KY

REVISIONS				DESIGNED:
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				REVIEWED:
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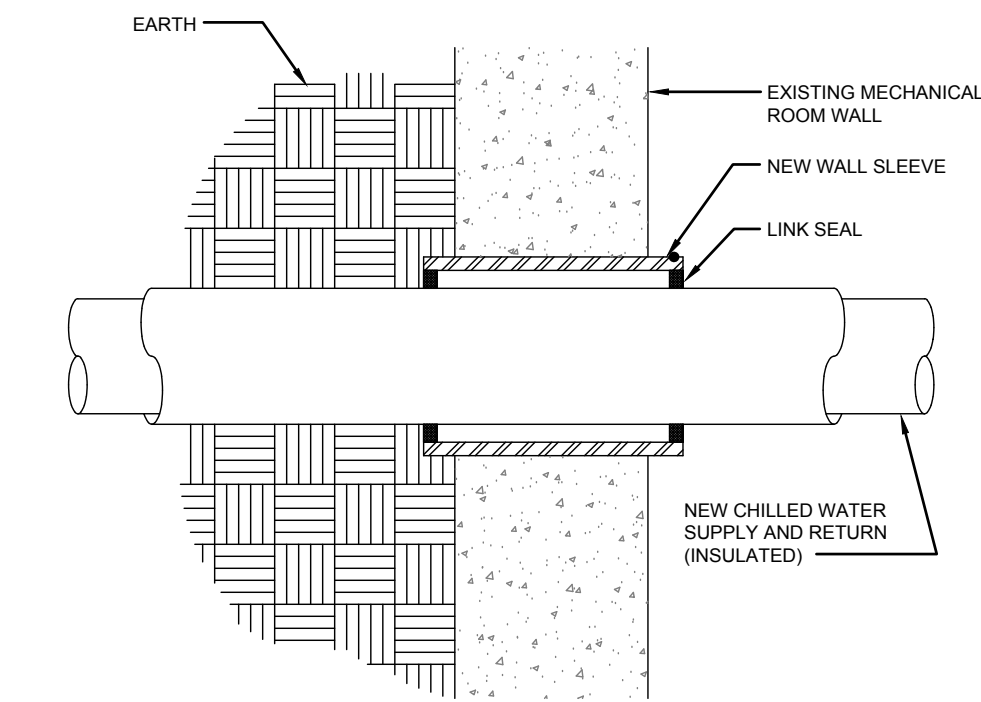
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SHEET NAME:	CENT. WING MECH PLAN
SHEET NO.	

M3.2

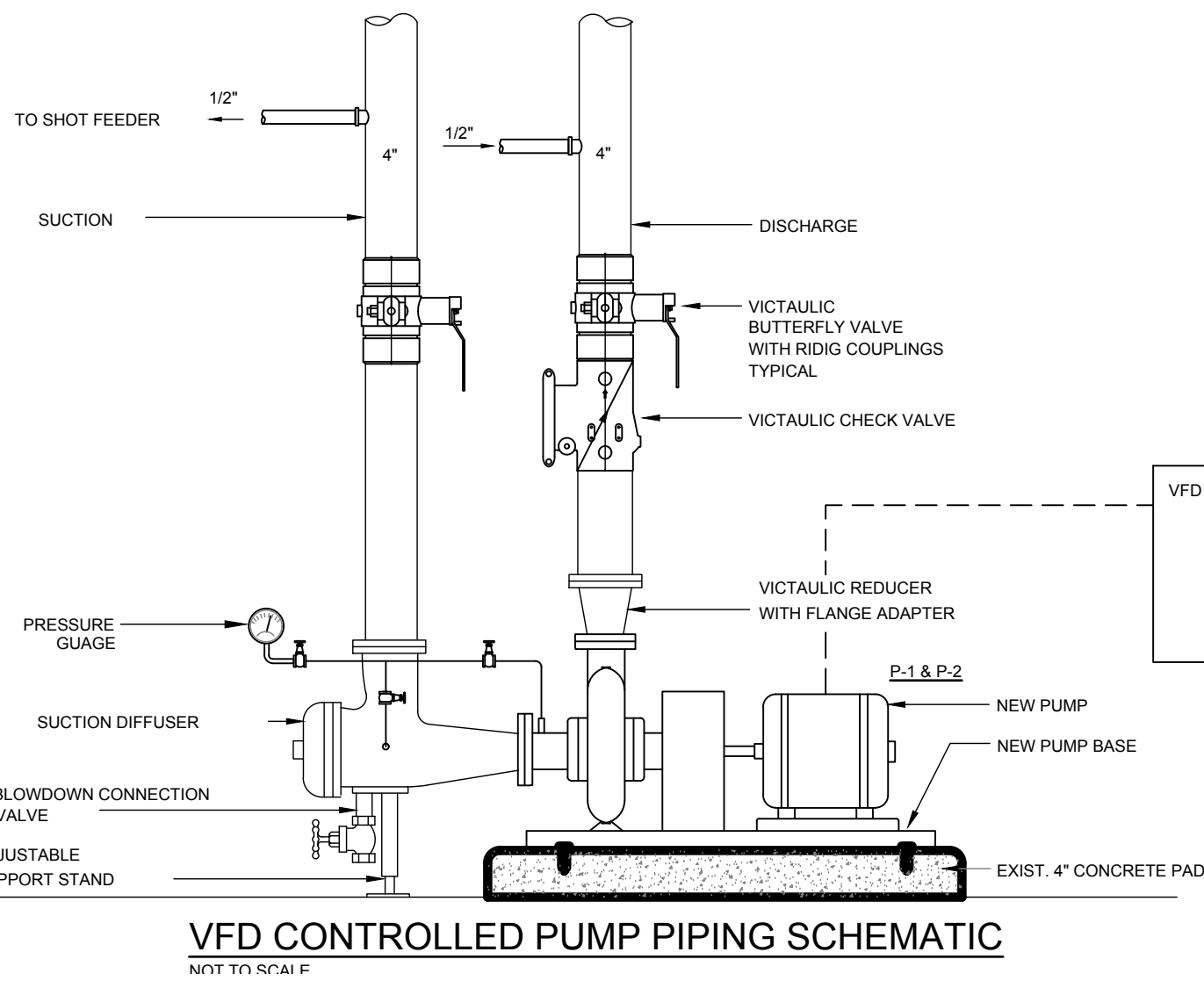




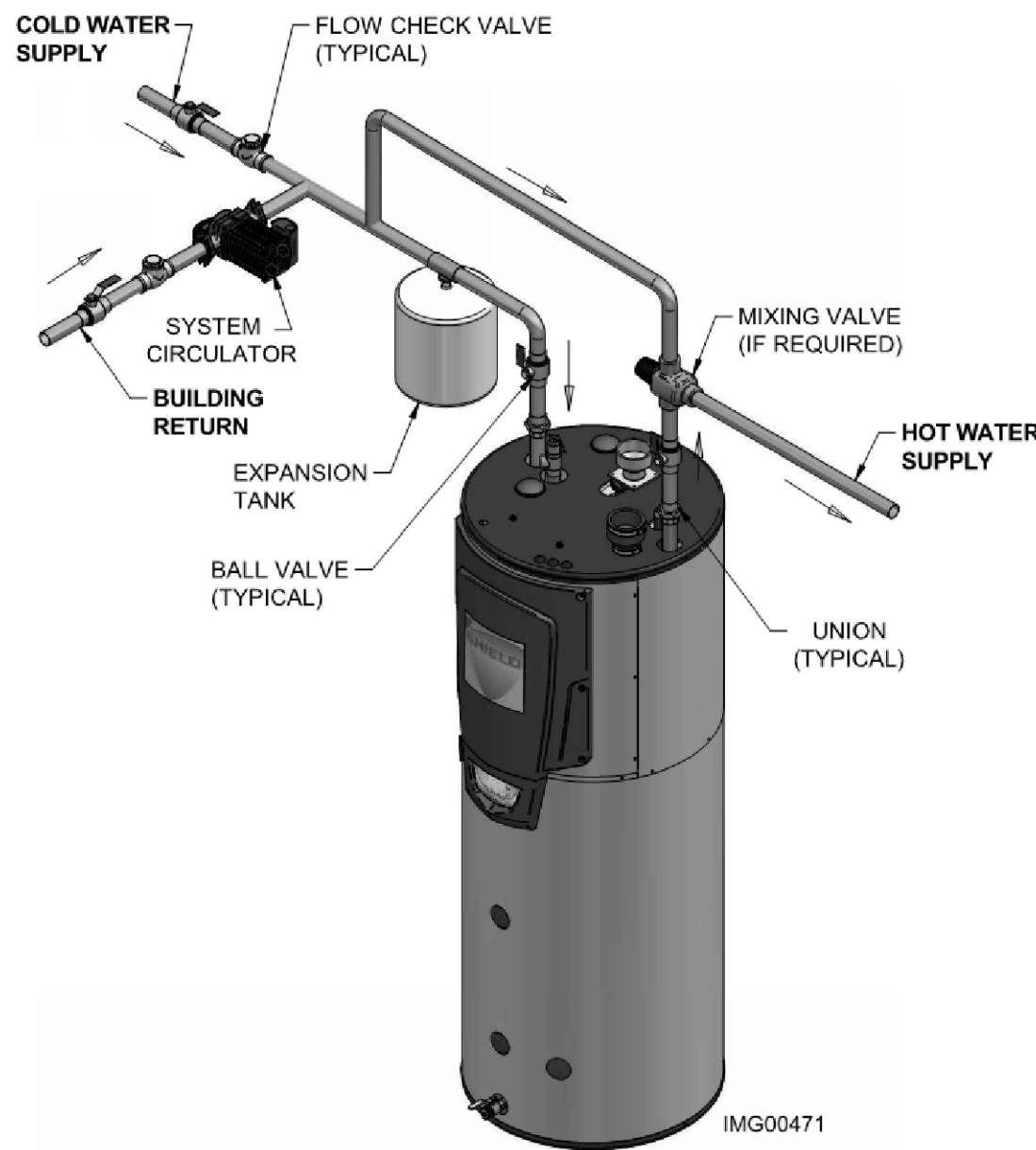
CHILLER PIPING CONNECTION DETAIL
NOT TO SCALE



CHILLED WATER LINES ENTERING BUILDING DETAIL
NOT TO SCALE



VFD CONTROLLED PUMP PIPING SCHEMATIC
NOT TO SCALE



WATER HEATER DETAIL
NO SCALE

PIPING, DUCTWORK, AND INSULATION SCHEDULE

REFRIGERANT PIPING

WEATHER EXPOSED REFRIGERANT PIPING:

RIDGID COPPER TYPLE L, INSULATED WITH 1" BLACK FOAM AND ADDITIONAL UV PROTECTED PVC JACKET OVER INSTALLATION.
PENETRATE REFRIGERANT PIPING THRU SIDE-WALL WITH A SLEEVED OPENING AND SEALED WATER TIGHT AFTER INSTALLATION.

REFRIGERANT PIPING WITHIN BUILDING:

RIDGID COPPER TYPLE L, INSULATE PIPING WITH 1" BLACK FOAM. SUPPORT PIPING FROM STRUCTURE WITH UNISTRUTS
FLEXIBLE INSULATED COPPER SHALL ONLY BE USED FOR SINGLE UNIT CONNECTION WITH MAXIMUM LENGTH OF 6'-0".

DUCTWORK AND AIR DEVICES INSULATION

DUCTWORK AS PER LATEST SMACNA GUIDELINES FOR LOW PRESSURE SYSTEM.

INSULATED ALL (SUPPLY, RETURN, EXHAUST, OUTSIDE AIR) WITH DOUBLE BUBBLE WRAP TYPE (R-8)
ALL DIFFUSERS AND GRILLES SHALL HAVE ABOVE DIFFUSER MOLDED INSULATION ON FACE PLATES.

DOMESTIC WATER PIPING

DOMESTIC HOT/COLD WATER SHALL BE TYPE L COPPER WITH 1" BLACK FOAM INSULATION.
MARK CONTECT AND FLOW EVERY 10'

HVAC CONTROLS SYSTEM

Main Building Automation System:

All NEW HVAC CONTROL SHALL BE STAND-ALONE OPERATION. PROVIDE PROGRAMMABLE THERMOSTATS
FOR ALL RTU AND SPLIT SYSTEMS.

AIR HANDLING UNIT SCHEDULE

UNIT NO.	AHU-1 TWINNED
QTY	1
MANUFACTURER	RHEEM
SERIES	RAWL
TYPE	VERTICAL
SYSTEM TONNAGE	7.5
AIR HANDLING UNIT	(2) R92PA
QUANTITY	2
MOTOR	VARIABLE - ECM
AIR FLOW CFM	(2) 1750
E.S.P. IN WG.	0.5
SPEED	MED / LO
FAN H.P.	(2) 3/4
POWER	115 / 1
FLA (AMP)	(2) 8.3
HEATING	GAS - TWIN FURNACE
TYPE	CONCEALED COMB.
STAGES	MODULATING HEAT
EFFICIENCY	92%
HIGH INPUT (BTU/h)	84000
HIGH OUTPUT (BTU/h)	78120
COOLING COIL	
MODEL	RCCL-D5013S
CAPACITY (BTU/HR)	85100
STYLE COIL	L
DRAIN PAN	STAINLESS STEEL
CERTIFICATION	ARI
CONDENSING UNIT	
SERIES	RAWL-090
COOLING STAGES	2
SEER	13.37
POWER	230 / 3
COMPRESSOR	SCROLL TWO-STAGE
MCA (AMP)	34
FUSE SIZE (AMP)	50
ACCESSORIES	
FILTER TYPE	2" (MERV-13)
LOW AMB COOLING	31 DEG F.
HEAD PRES. CONTROL	YES
THERMOSTAT	ECONET - PROG.
NOTES:	
1.	PROGRAMMABLE THERMOSTAT WITH WALL PLATE.
2.	SYSTEM SHALL BE UL LISTED
3.	2" FILTER HOUSING WITH ACCESS DOOR
4.	OTHER ACCEPTABLE MANUFACTURERS: LENNOX - TRANE
MINIMUM SEER:	16

PACKAGE CHILLER SCHEDULE

UNIT NO	CHILLER 1
MANUFACTURER	TRANE
MODEL	CGAM 120
TYPE	HIGH EFF AIR COOLED CHILLER
CAPACITY (TONS)	120
REFRIGERANT	R410A
OPER. WEIGHT (LBS.)	5965.7
AHRI CERTIFICATION	113.13 TONS
EER	9.9
EVAPORATOR	
GPM	226.9
EWI	56
LWT	44
FOULING FACTOR	0.00010 HR-SQ FT-DEG/BTU
MAX WPD (FT OF HEAD)	9.8
ELECTRICAL	
UNIT VOLTAGE	230 V / 3 PHASE / 60 HZ
SHORT CIRCUIT RATING	5000 A
UNIT POWER	138 KW
SINGLE POINT POWER	MCA - 521.6 A; MOP - 600.00 A
STARTER TYPE	ACROSS THE LINE
ACCESSORIES	
HIGH EFF. PURGE	YES
ISOLATORS	YES
MISC.	SEE NOTES
SEISMIC CERTIFICATION	YES
NOTES:	
1.	PROVIDE FACTOR CORRECTION TO 0.95 AT FULL LOAD
2.	LOW VOLTAGE PROTECTION
3.	SINGLE PHASE PROTECTION
4.	PROVIDE UNIT MOUNTED STARTER

PUMP SCHEDULE

UNIT NO	P-1	P-2
MANUFACTURER	Bell & Gossett	Bell & Gossett
QTY.	1	1
SERVICE	CHILLED WATER SYSTEM	CHILLED WATER SYSTEM
SERIES	e-1510	e-1510
MODEL	2BD	2BD
IMPELLER SIZE	8.5"	8.5"
TYPE	BASE MOUNTED	BASE MOUNTED
PRESSURE (FT. OF HEAD)	60	60
GPM	200	200
FLUID	WATER	WATER
FLUID TEMP (DEG. F)	30-110	30-110
PUMP RPM	1750	1750
MIN EFFICIENCY	3/4	3/4
MOTOR		
HP	5	5
VOLT/PHASE	208 / 3	208 / 3
NOTES:	1. CH P-1 / HW P-1 PUMPS OPERATED THRU VARIABLE FREQUENCY DRIVE. 2. FREQUENCY ADJUSTED FOR EXACT FLOW BY BALANCING CONTRACTOR	

WATER HEATER SCHEDULE

UNIT NO	WH-2	WH-4
MANUFACTURER	LOCHINVAR	LOCHINVAR
MODEL	PNR200-80	PNR200-80
QTY	1	1
STORAGE CAPACITY	80 GAL	80 GAL
FUEL TYPE	GAS	GAS
BTU/hr INPUT	199,999	199,999
VOLTAGE	115 V AC	115 V AC
GAS CONNECTION	3/4"	3/4"
NOTES:	1. PROVIDE ANY ADDITIONAL ACCESSORIES FOR COMPLETE UNIT INSTILLATION. COORDINATE WITH ELECTRICAL	

CIRCULATION PUMP SCHEDULE

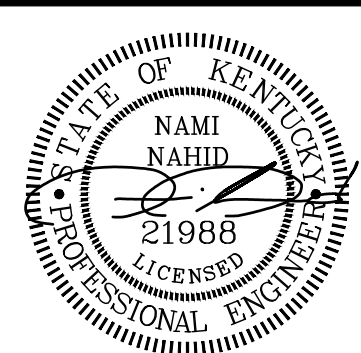
UNIT NO	CIRC. PUMP
MANUFACTURER	BELL AND GOSSET
MODEL	A 142F PL30
POWER (HP)	1/12
PHASE	1
VOLTAGE	115
GPM	20 GPM @ 10FT
QTY	2
NOTES:	
1.	PROVIDE ANY ADDITIONAL ACCESSORIES FOR COMPLETE UNIT INSTILLATION. COORDINATE WITH ELECTRICAL.

SPLIT CHILLER SCHEDULE

UNIT NO	CHILLER 2
MANUFACTURER	TRANE
MODEL	RAUJC8
TYPE	COND. UNIT AIR COOLED
CAPACITY (TONS)	80
REFRIGERANT	R410-A
OPER. WEIGHT (LBS.)	5783
EER @ AHRI (COND ONLY)	11
EVAPORATOR	
GPM	155.06
EWI	56
LWT	44
PFOULING FACTOR	0.00010 HR-SQ FT-DEG F/BTU
MAX WPD (FT OF HEAD)	9.88
MOTOR	
UNIT VOLTAGE	230 V / 3 PHASE / 60 HZ
SHORT CIRCUIT RATING	5000 A
TOTAL POWER	99.94 KW
MCA	358 A
MOP	400 A
ACCESSORIES	
HIGH EFF. PURGE	YES
ISOLATORS	YES
MISC.	SEE NOTES
SEISMIC CERTIFICATION	YES
NOTES:	
1.	PROVIDE FACTOR CORRECTION TO 0.95 AT FULL LOAD
2.	LOW VOLTAGE PROTECTION
3.	SINGLE PHASE PROTECTION
4.	PROVIDE UNIT MOUNTED STARTER

TODD COUNTY MIDDLE SCHOOL O.A. CALCULATIONS

	Unit Served	AREA SQ FT	DESIGNED O.A. CFM	People load	REQUIRED CFM 2012 IMC
CORRIDOR	AHU-1	3600	350	20	316



CONTRACT NO. 8310-23

STEWART RICHEY
CONTRACTING GROUP

ENGINEERING

CLIENT PROJECT NO. XXXX-XX

NAME
NAMI NAHID
21988
KENTUCKY
PROFESSIONAL ENGINEER

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DESIGNED	DRAWN	REVIEWED	APPROVED
NN	NN	WR	NN
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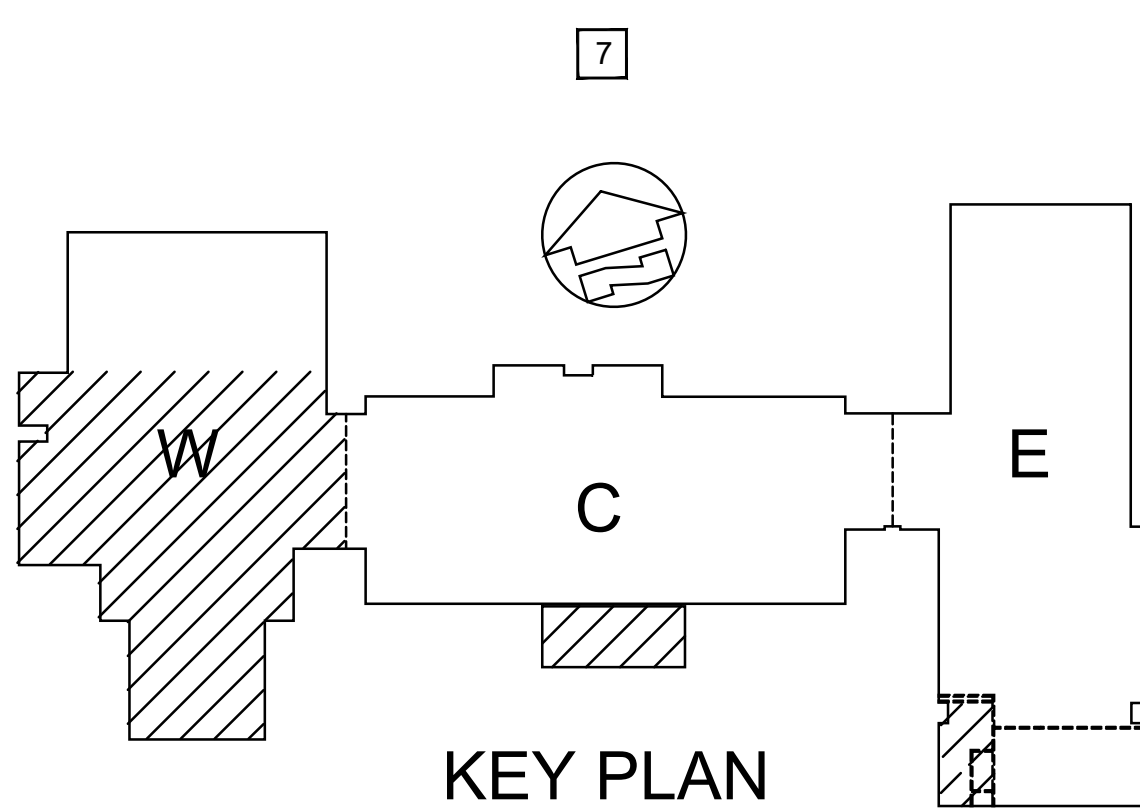
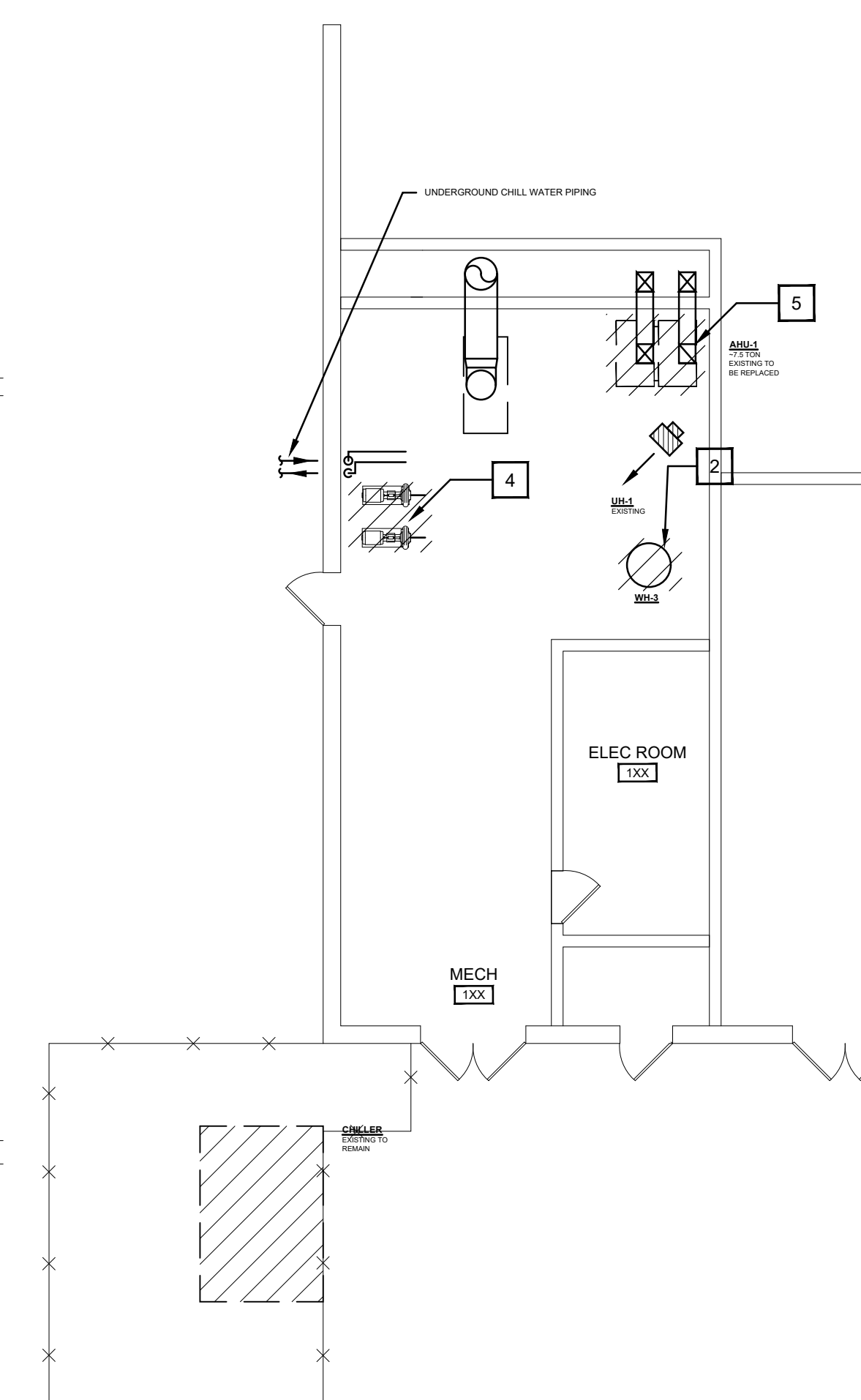
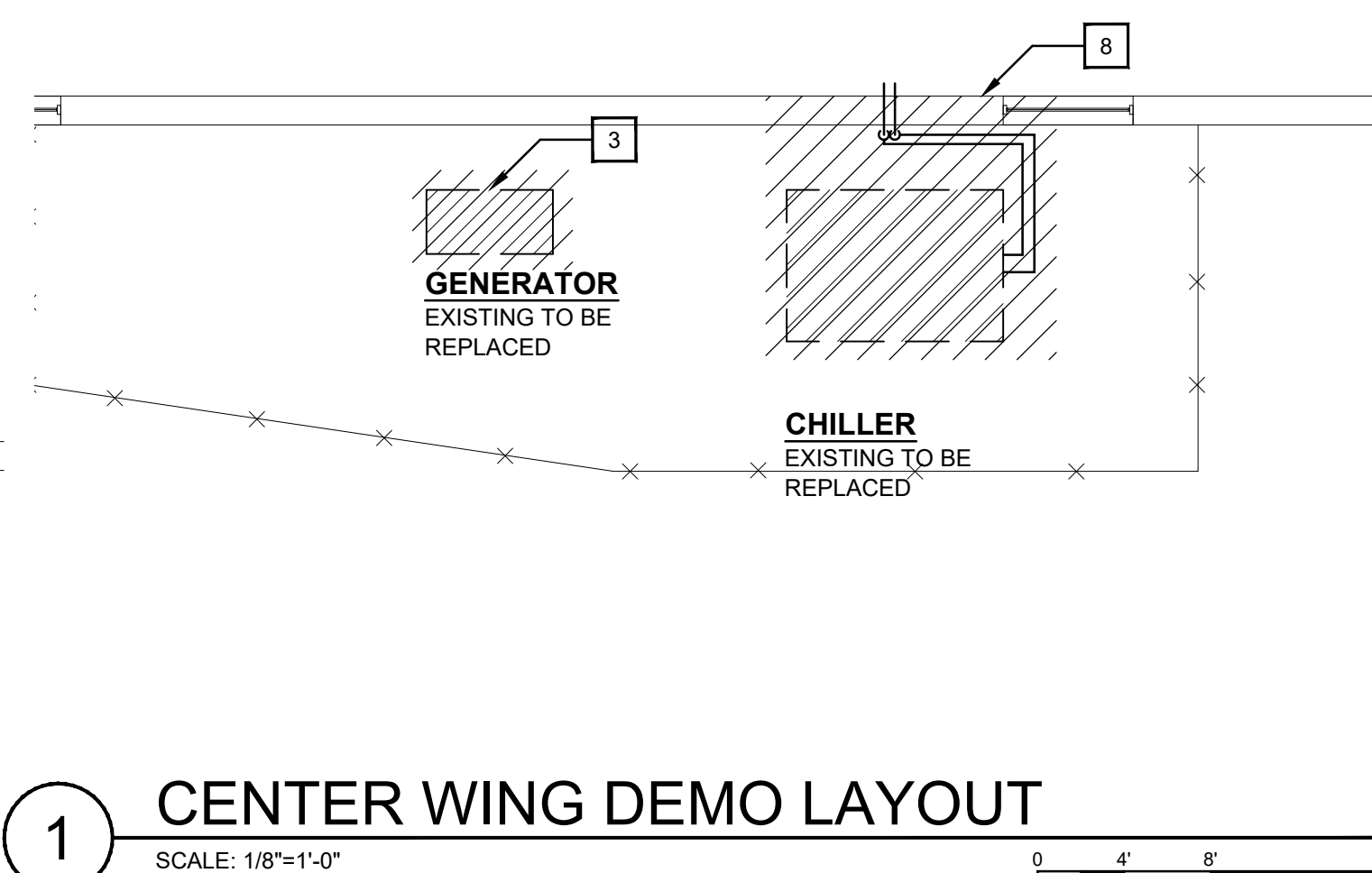
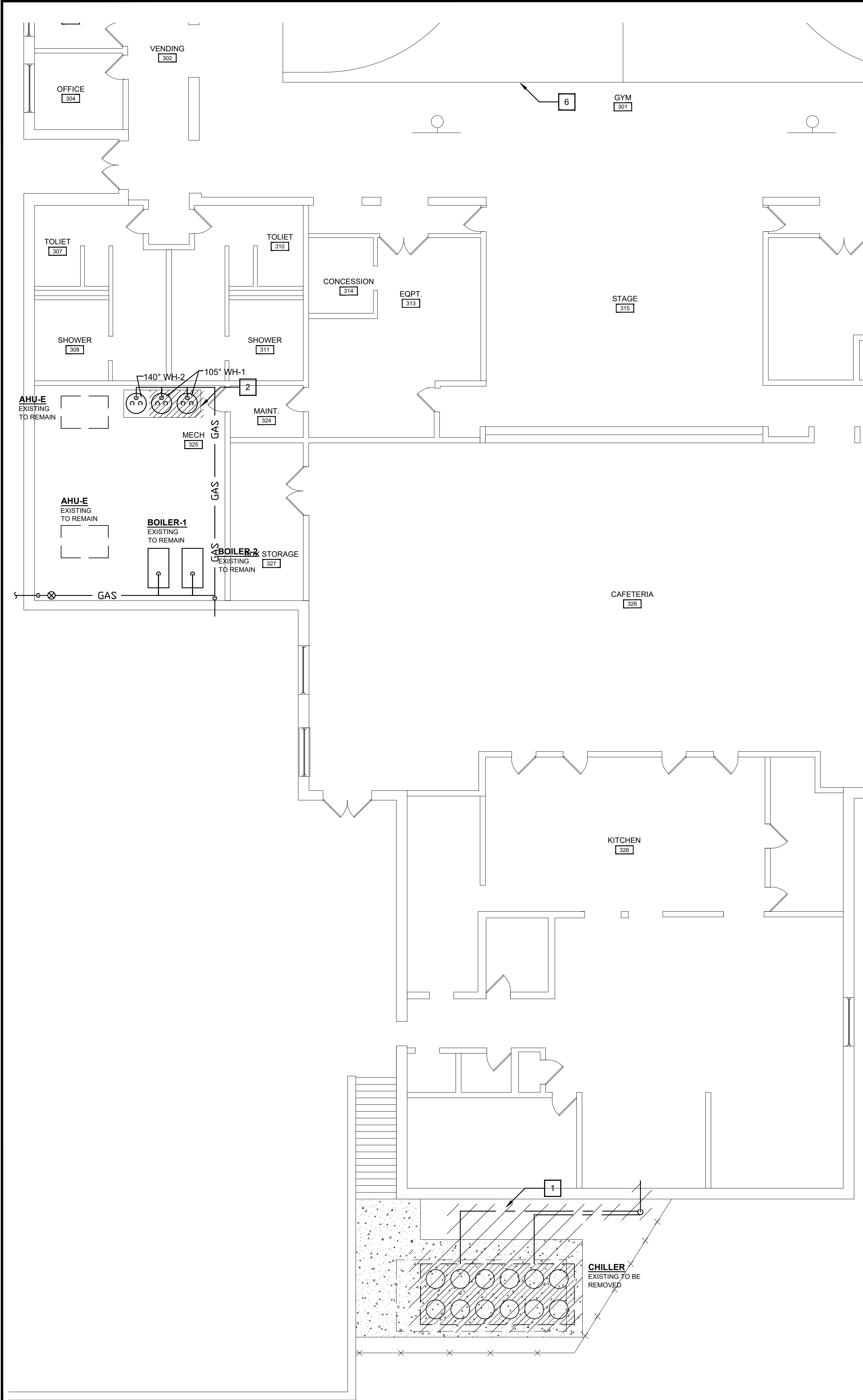
DATE: MAR, 21, 2016

SCALE: SEE SHEET

SHEET NAME:
MECHANICAL
SCHEDULES

SHEET NO.

M3.4



- ### # DEMO NOTES:
1. DISCONNECT AIR COOLED CHILLER FOR REPLACEMENT. DISCONNECT AND REMOVE EXISTING FEEDER AND CIRCUIT BREAKER IN SQUARE D SWITCHGEAR CURRENTLY SERVING EXISTING CHILLER.
 2. DISCONNECT WATER HEATERS FOR REPLACEMENT. RETAIN EXISTING BRANCH CIRCUIT FROM PANEL PA TO SERVE NEW WATER HEATER.
 3. DISCONNECT AND REMOVE EMERGENCY GENERATOR, CONCRETE PAD AND PROPANE TANKS. REMOVE GENERATOR FEEDER TO EXISTING TRANSFER SWITCH.
 4. DISCONNECT TWO EXISTING PUMPS FOR REPLACEMENT WITH TWO NEW PUMPS EQUIPPED WITH VARIABLE FREQUENCY DRIVES. RETAIN EXISTING BRANCH CIRCUIT FOR REWORK/RECONNECTION TO NEW PUMPS.
 5. DISCONNECT EXISTING AHU FOR REPLACEMENT. DISCONNECT AND REMOVE EXISTING BRANCH CIRCUIT. LABEL EXISTING CIRCUITBREAKER IN SWITCHGEAR AS "SPARE".
 6. DISCONNECT AND REMOVE EXISTING HID LIGHTING FIXTURES IN GYMNASIUM. EXISTING EMERGENCY LIGHTING FIXTURES SHALL REMAIN. EXISTING HID LIGHT FIXTURES WILL BE REPLACED WITH NEW LED LIGHT FIXTURE ON A ONE FOR ONE BASIS. SEE E1.0 FOR NEW LIGHTING.
 7. ELECTRICAL CONTRACTOR SHALL RETROFIT SEVEN EXISTING POLE FIXTURES LOCATED AT FRONT OF BUILDING WITH NEW RETROFIT LED LAMPS. REMOVE EXISTING HID LAMPS.
 8. DISCONNECT CHILLER FOR REPLACEMENT. DISCONNECT AND REMOVE EXISTING WALL MOUNTED DISCONNECT SWITCH.

SALVAGE NOTE:

UNLESS NOTED OTHERWISE, SHOWN OR SPECIFIED, ALL HVAC EQUIPMENT, CHILLERS, PIPING, ETC REMOVED OR DEMOLISHED (EXCEPT THAT WHICH IS TO BE SALVAGED AND RELOCATED) AS DIRECTED BY DRAWINGS AND SPECIFICATIONS, SHALL BECOME THE PROPERTY OF THE OWNER. CONTRACTORS SHALL RETURN AND DELIVER EXISTING / SALVAGED EQUIPMENT TO THE OWNER'S SITE. COORDINATE WITH THE OWNER ON LOCATION. IF EQUIPMENT IS NOT WANTED BY THE OWNER, CONTRACTOR SHALL LEGALLY DISPOSE OF EQUIPMENT BY PROPER MEANS.

6/13/2016

CONTRACT NO. XXXX-23

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2016 HVAC RENOVATION

ELKTON, KY

DESIGNED	DRAWN	REVIEWED	APPROVED
BGC	BGC	BGC	BGC

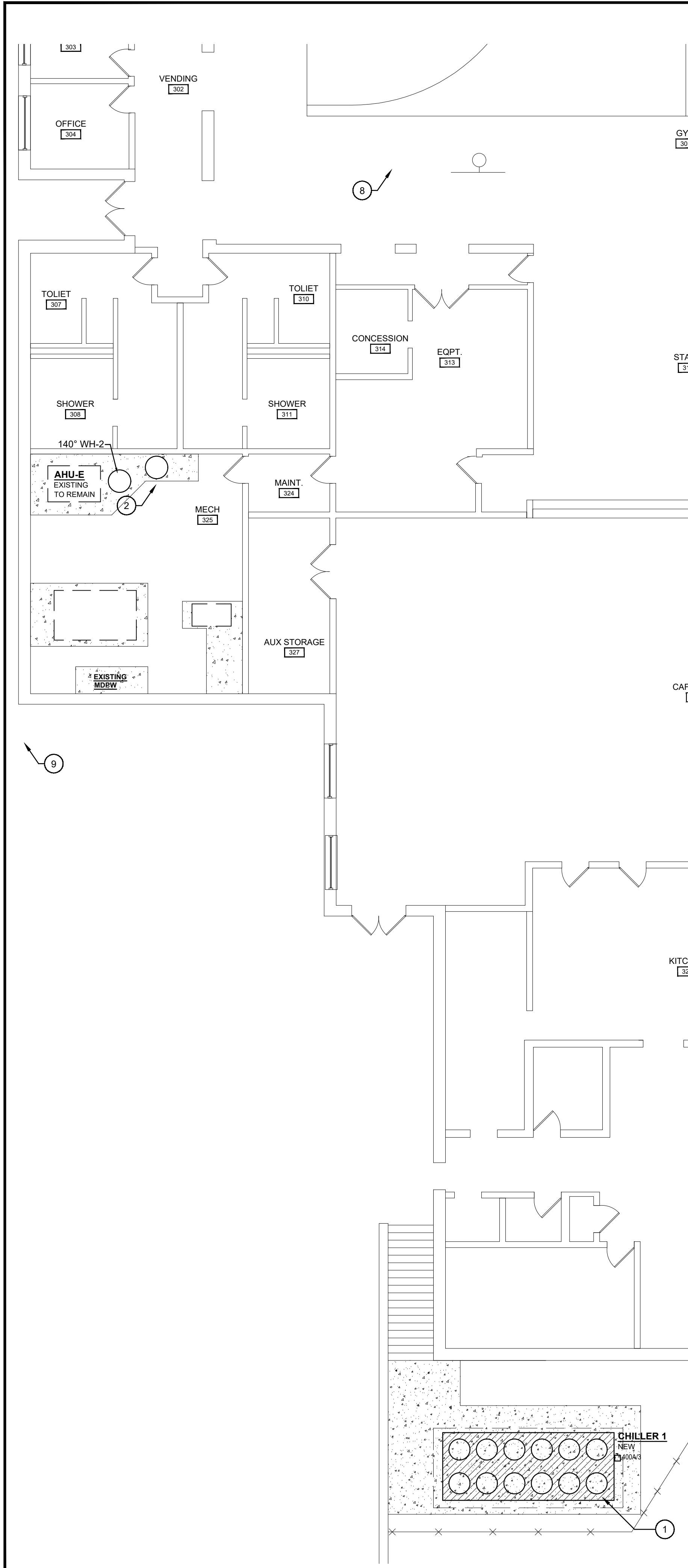
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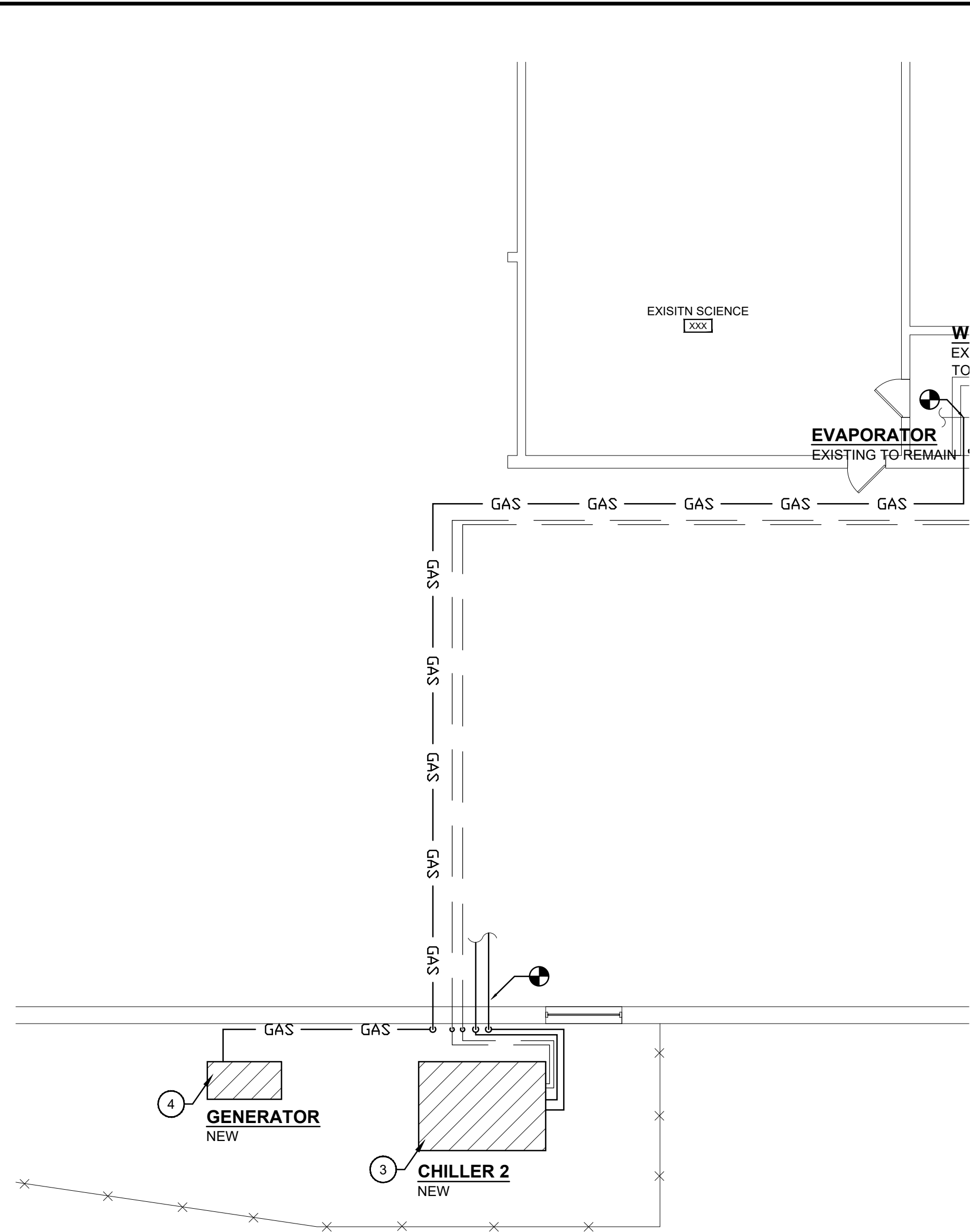
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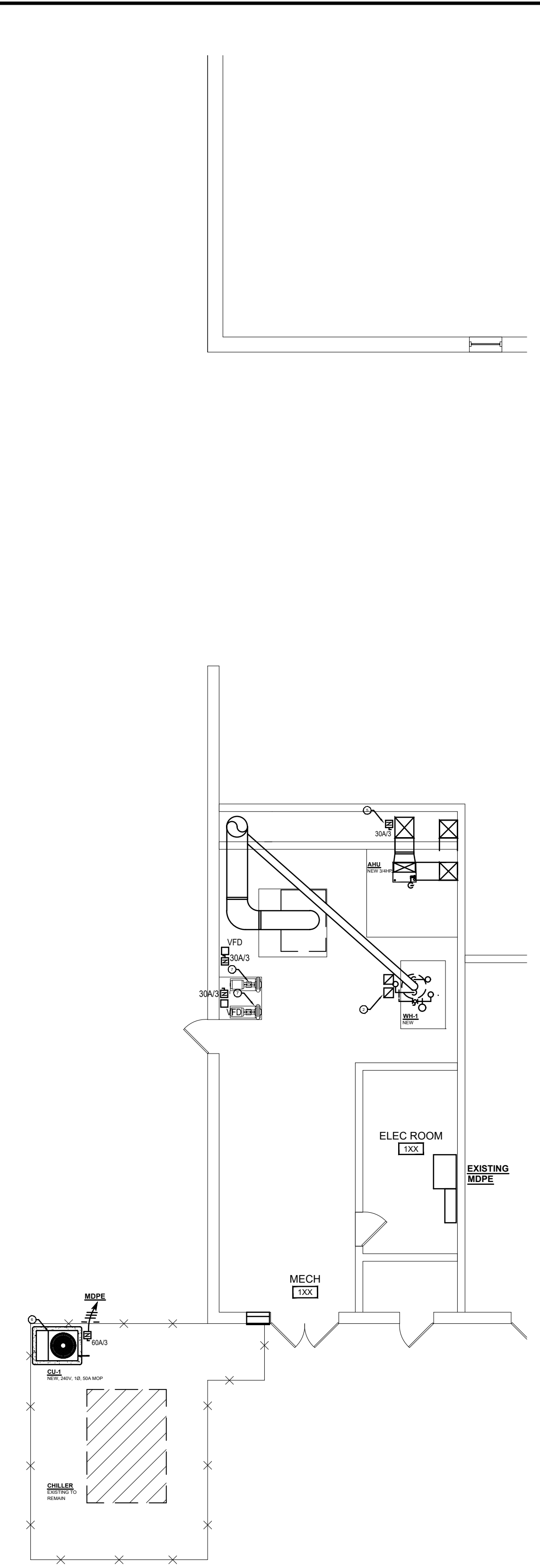
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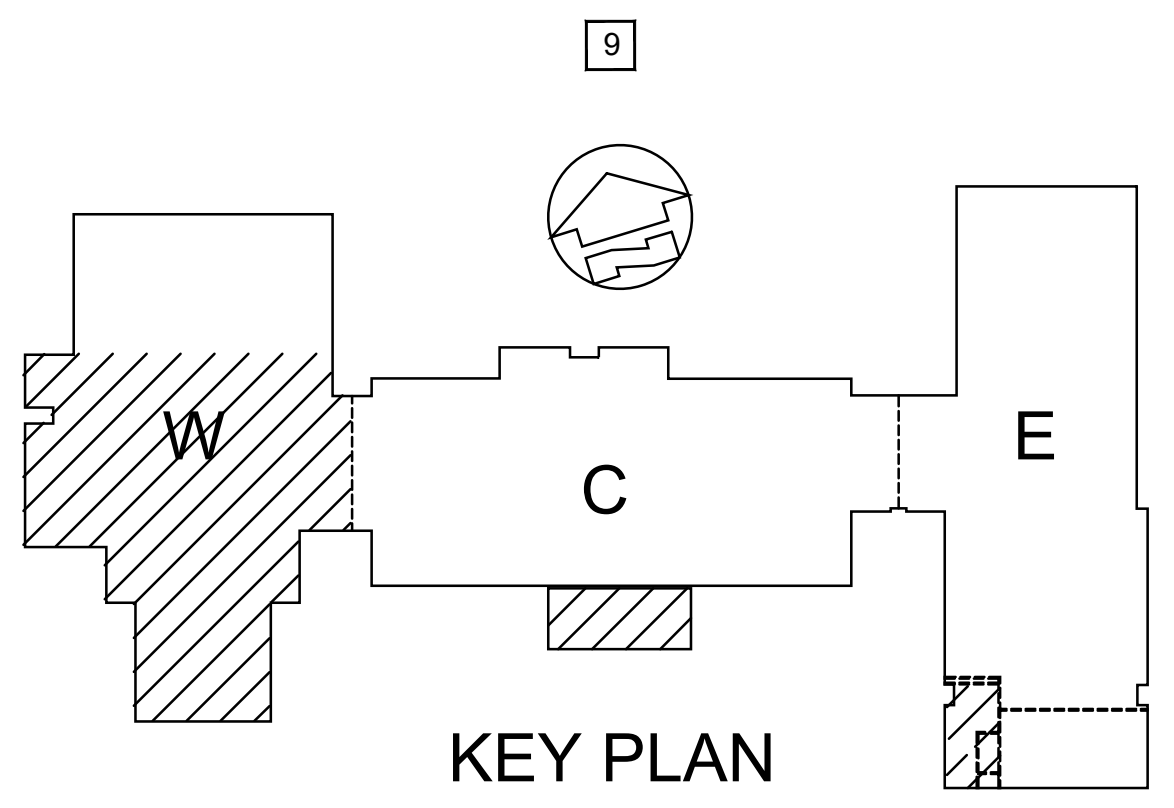
3 WEST WING ELECTRICAL PLAN
SCALE: 1/8"=1'-0"



3 CENTER WING ELECTRICAL PLAN
SCALE: 1/8"=1'-0"



3 EAST WING ELECTRICAL PLAN
SCALE: 1/8"=1'-0"



- CONSTRUCTION NOTES:**
- FURNISH AND INSTALL NEW 600A CIRCUIT BREAKER IN EXISTING MAIN SWITCHBOARD TO MATCH EXISTING EQUIPMENT. FURNISH AND INSTALL TWO SETS OF 3#550MCM, 1#x6G FROM EXISTING MAIN SWITCHBOARD TO NEW CHILLER AND CONNECT TO FACTORY INSTALLED MOTOR STARTER/DISCONNECT ON CHILLER.
 - CONNECT NEW WATER HEATER AND RECIRCULATING PUMP TO EXISTING 120V BRANCH CIRCUIT CURRENTLY SERVING EXISTING WATER HEATER. PROVIDE SEPERATE LOCAL DISCONNECT SWITCH FOR WATER HEATER AND RECIRCULATING PUMP. EXTEND/REWORK AND RECONNECT TO NEW WATER HEATER.
 - FURNISH AND INSTALL NEW JUNCTION BOX ON WALL AT CURRENT LOCATION OF DISCONNECT SWITCH. EXTEND FEEDER TO NEW CHILLER AND CONNECT TO FACTORY MOUNTED STARTER/DISCONNECT SWITCH.
 - FURNISH AND INSTALL NEW 8KW (MINIMUM), 120/240V, 1Ø NATURAL GAS EMERGENCY GENERATOR, ASSOCIATED 30A, 120/240V, 1Ø AUTOMATIC TRANSFER SWITCH AND REMOTE ALARM PANEL TO REPLACE EXISTING. FURNISH AND INSTALL NEW CONCRETE REINFORCED PAD. LOCATE GENERATOR AND AUTOMATIC TRANSFER SWITCH IN SAME GENERAL VICINITY AS EXISTING. ROUTE NEW 3 #8, 1 #10G, 3/4" C FROM EMERGENCY GENERATOR TO NEW TRANSFER SWITCH AND FROM TRANSFER SWITCH TO EXISTING 30A EMERGENCY PANEL "E". FURNISH AND INSTALL ALL CONTROL/ALARM WIRING FROM GENERATOR TO TRANSFER SWITCH AND TO REMOTE ALARM PANEL PER GENERATOR MANUFACTURER REQUIREMENTS.
 - FURNISH AND INSTALL NEW 30A DISCONNECT SWITCH AT NEW AIR HANDLING UNIT. FURNISH AND INSTALL 15A/2P CIRCUIT BREAKER IN EXISTING SWITCHGEAR TO MATCH EXISTING SWITCHGEAR. FURNISH AND INSTALL 2#12, 1#12G, 1/2" C FROM NEW CIRCUIT BREAKER TO AHU/DISCONNECT SWITCH.
 - FURNISH AND INSTALL NEW 50A/2P CIRCUIT BREAKER IN EXISTING MAIN DISTRIBUTION GEAR MDPE TO MATCH EXISTING SWITCHGEAR. NEW CIRCUIT BREAKER SHALL SERVE NEW CONDENSING UNIT. FURNISH AND INSTALL 3 #8, 1 #10G, 3/4" C FROM NEW CIRCUIT BREAKER TO DISCONNECT SWITCH/CONDENSING UNIT.
 - MECHANICAL CONTRACTOR TO FURNISH VFD FOR NEW PUMPS, ELECTRICAL CONTRACTOR TO INSTALL AND WIRE. MECHANICAL CONTRACTOR TO PROGRAM AND STARTUP. FURNISH AND INSTALL NON FUSED DISCONNECT SWITCH WITH AUX CONTACT WIRED TO VFD TO DIASABLE VFD WHEN DISCONNECT IN OPEN POSITION. REWORK/EXTEND EXISTING BRANCH CIRCUIT AS REQUIRED AND RECONNECT TO DISCONNECT SWITCH/VFD/PUMP.
 - REPLACE ALL CEILING HID LIGHTING FIXTURES IN GYMNASIUM WITH MAXLITE CAT. NO. BLH7235USD4820-MLHFLB8DFWGL OR EQUAL LED LIGHT FIXTURE. RECONNECT TO EXISTING BRANCH CIRCUITRY AND SWITCHING. FIELD VERIFY.
 - RETROFIT ALL EXTERIOR POLE MOUNTED FIXTURES (TYPICAL OF SEVEN) WITH LED LAMP RETROFIT KIT SPECIFICALLY DESIGNED FOR LIGHT FIXTURE. LED LAMP SHALL BE EQUIVALENT TO HID LAMP CURRENTLY INSTALLED.

DESIGNED
BGC

BY

DATE

DESCRIPTION

REVISIONS

NO

DATE

DESCRIPTION

DATE:
JUNE 13, 2016

SCALE:
SEE SHEET

SHEET NAME:
ELECTRICAL
PLAN

SHEET NO.:

STEWART RICHEY
CONTRACTING GROUP

ENGINEERING

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PART WITHOUT THE WRITTEN PERMISSION OF
STEWART RICHEY CONSTRUCTION, INC.
OTHER THAN THIS SPECIFIC PROJECT

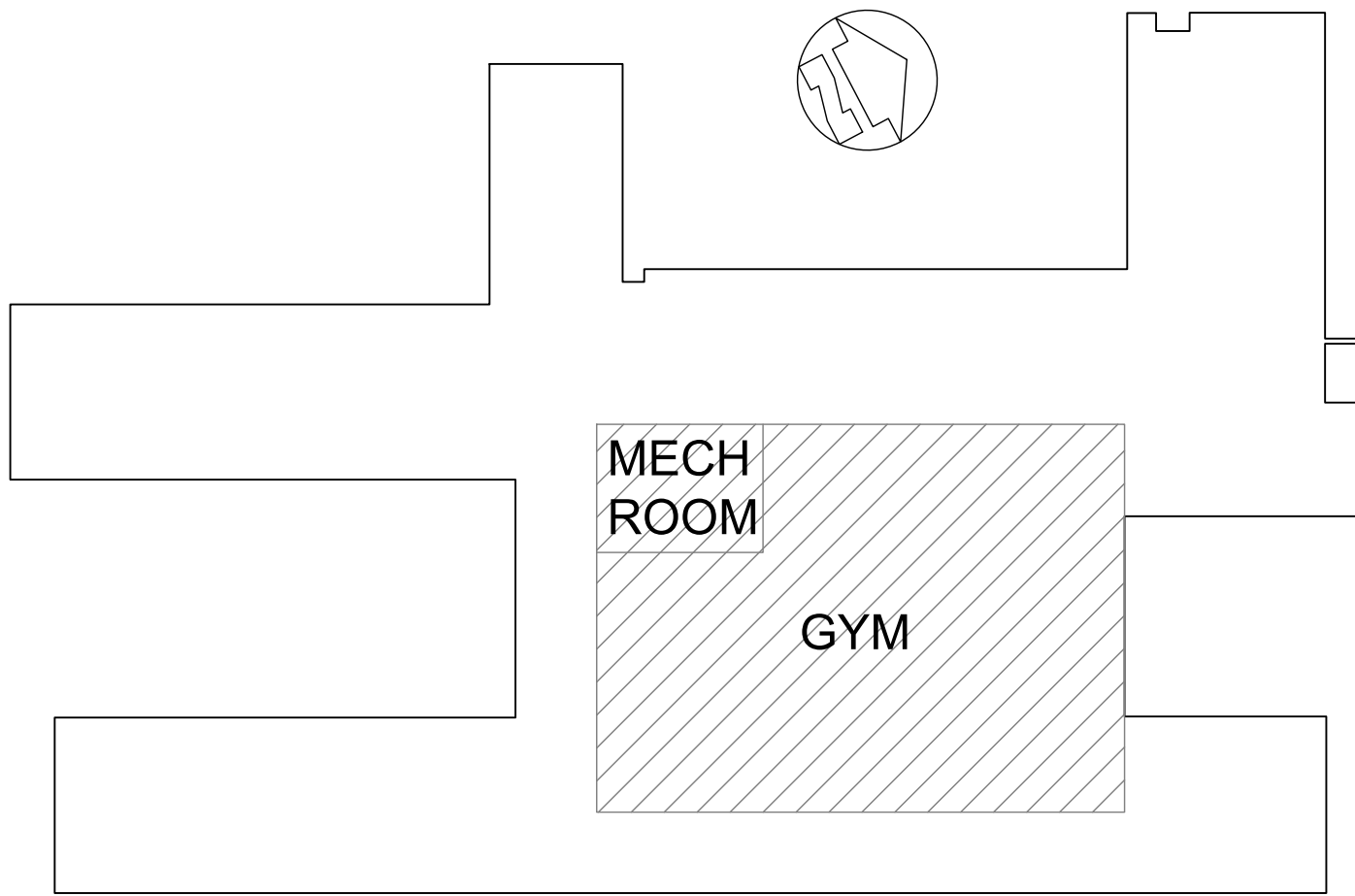
TODD COUNTY MIDDLE SCHOOL
2016 HVAC RENOVATION
ELKTON, KY

E3.1



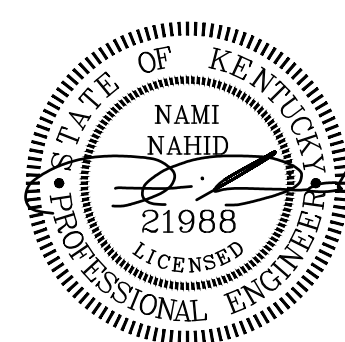
DEMO NOTES:

1. REMOVE EXISTING (4) CEILING HANGED AIR HANDLING UNITS WITH ASSOCIATED PIPING, CONTROLS, ETC... REMOVE ALL HANGERS, REMOVE PIPING THRU THE WALL AND CAP AND SEAL WALL OPENING. PAINT AREAS TO MATCH WALL COLOR WHERE PIPING IS REMOVED. REMOVE FRESH AIR DUCT CONNECTED TO EXTERIOR LOUVER. SEAL LOUVER WITH 2" BAT INSULATION BETWEEN TWO LAYER OF SHEETMETAL. PAINT SHEETMETAL TO MATCH WALL COLOR.



KEY PLAN

1 GYMNASIUM - DEMO PLAN
SCALE: 1/8"=1'-0"



CONTRACT NO. 8310-23

CLIENT PROJECT NO. XXXX-XX

ALL RIGHTS RESERVED. NO PART OF THIS DOCUMENT SHALL NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF STEWART RICHEY CONTRACTING GROUP, INC. AND STEWART RICHEY CONSTRUCTION, INC.

2137 GLEN LILY RD. BOWLING GREEN, KY 42101
P: 270-842-5184 F: 270-782-6654

STEWART RICHEY CONTRACTING GROUP

ENGINEERING

PROVIDING UNSURPASSED SERVICE AND INNOVATIVE SOLUTIONS THROUGH OUR EXCEPTIONAL PEOPLE

**TODD COUNTY CENTRAL HS
2016 HVAC RENOVATION
ELKTON, KY**

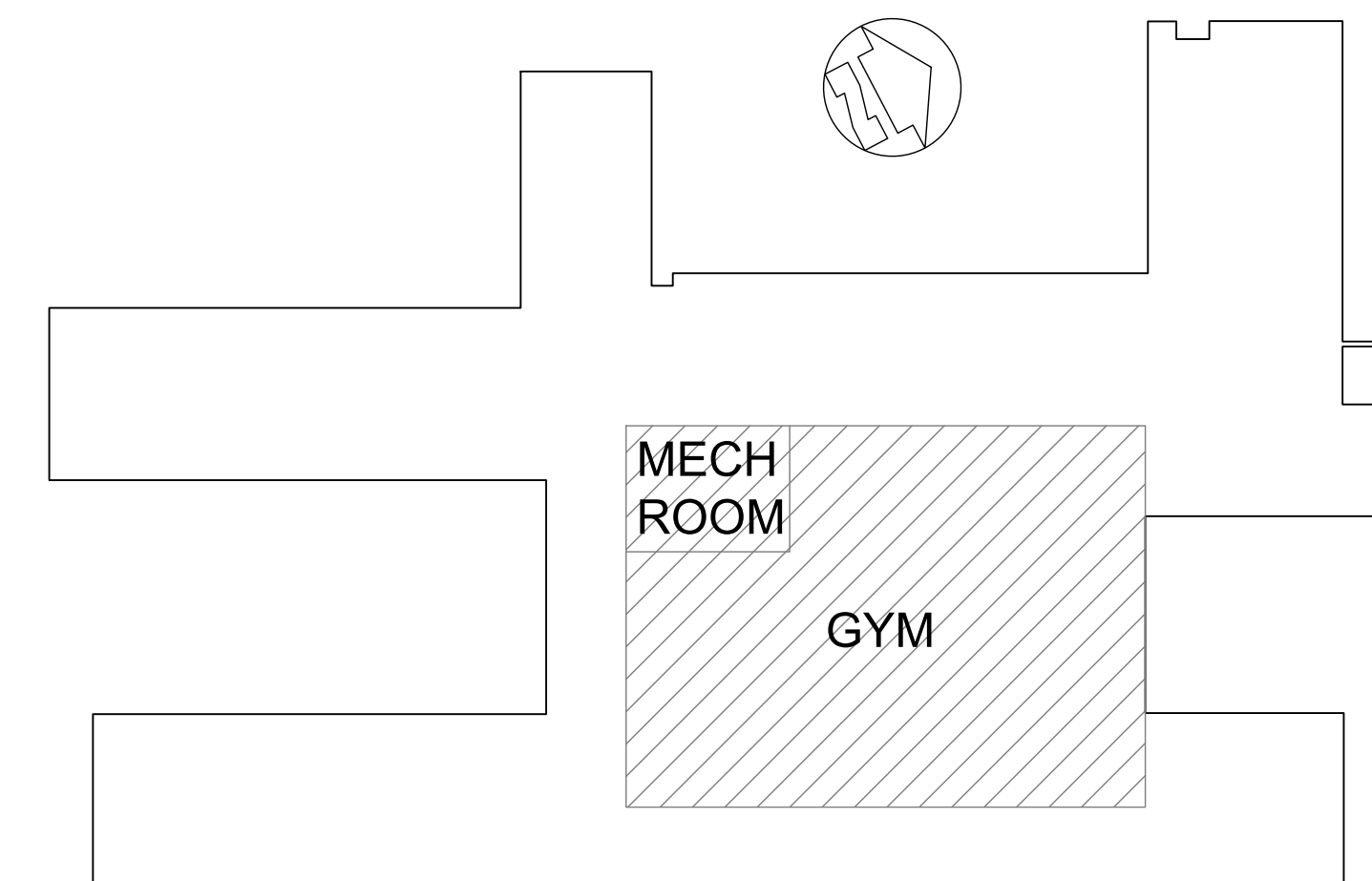
NO	REVISIONS	DESCRIPTION	DATE	BY	DESIGNED
					NN
					NN
					WR
					NN
					NN
					NN

DATE: MARCH 23, 2016

SCALE: SEE SHEET

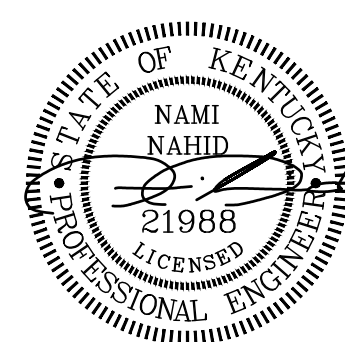
SHEET NAME: MECHANICAL DEMO PLAN

SHEET NO.



Age Group	Percentage
18-24	2.5%
25-34	3.5%
35-44	4.5%
45-54	5.5%
55-64	6.5%
65-74	7.5%
75-84	8.5%
85+	9.5%

M4.1



CONTRACT NO. XXXX-23
CLIENT PROJECT NO. XXXX-XX
ALL RIGHTS RESERVED. NO PART OF THIS DOCUMENT SHALL BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF STEWART RICHEY CONTRACTING GROUP, INC. AND WITHOUT WRITTEN PERMISSION.
ENGINEERING
STEWART RICHEY CONTRACTING GROUP
2137 GLEN LILY RD BOWLING GREEN, KY 42101
P: 270-842-5184 F: 270-782-8654
"Providing Unsurpassed Service and Innovative Solutions through Our Exceptional People"

TODD COUNTY CENTRAL HS
2016 HVAC RENOVATION
ELKTON, KY

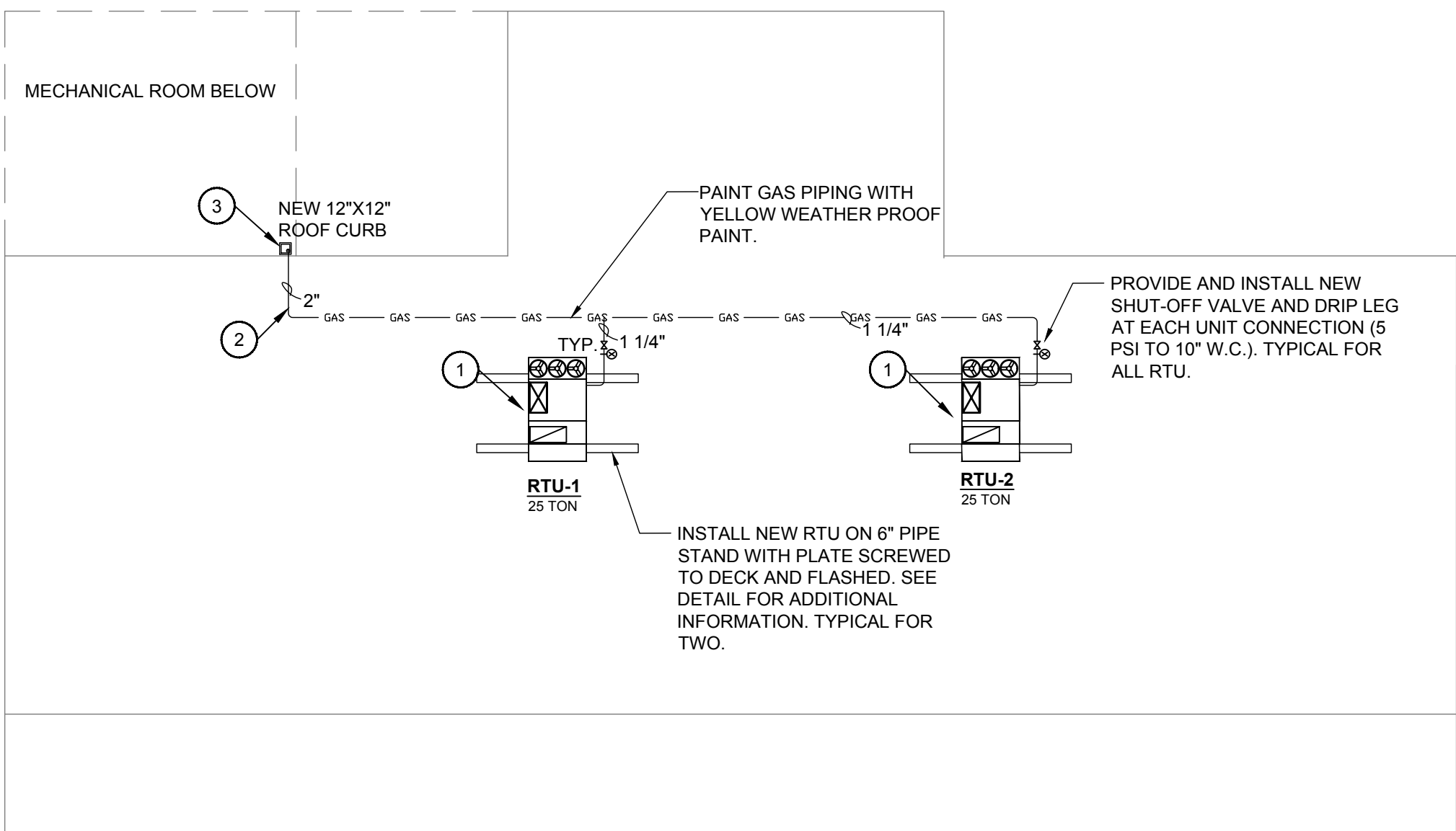
DESIGNED	BY	DATE	DESCRIPTION	DRAWN	REVIEWED	APPROVED
NN	NN			WR	NN	NN

DATE: MARCH 23, 2016
SCALE: SEE SHEET
SHEET NAME: MECHANICAL ROOF PLAN
SHEET NO.

M4.2

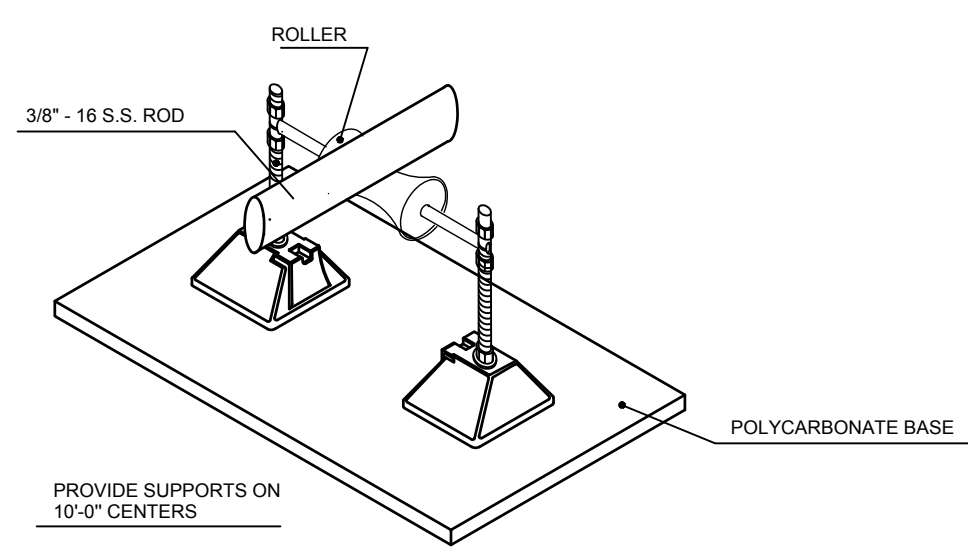
CONSTRUCTION NOTES:

1. PROVIDE AND INSTALL TWO NEW PACKAGE ROOF TOP UNIT SERVING GYMNASIUM. MOUNT RTU ON GYM ROOF. SEE MECH ROOF PLAN FOR ADDITIONAL DETAILS. CONNECT NEW FABRIC DUCTWORK TO SUPPLY AND ROUTE AS INDICATED.
2. NEW 2" GAS PIPE ROUTED FROM MECH ROOM TO NEW RTU. ROUTE PIPING OVER ROOF WITH GAS SUPPORT STANDS. PROVIDE AND INSTALL REGULATOR AND SHUTOFF VALVE AS INDICATED.
3. PROVIDE AND INSTALL NEW 12" X 12" ROOF CURB WITH COVER. ROUTE NEW 2" GAS PIPE FOR NEW RTU THROUGH COVER. SEAL WATER TIGHT. ROUTE NEW FRESH AIR INTAKE AND EXHAUST FOR NEW WATER HEATER THROUGH COVER. SEAL WATER TIGHT.

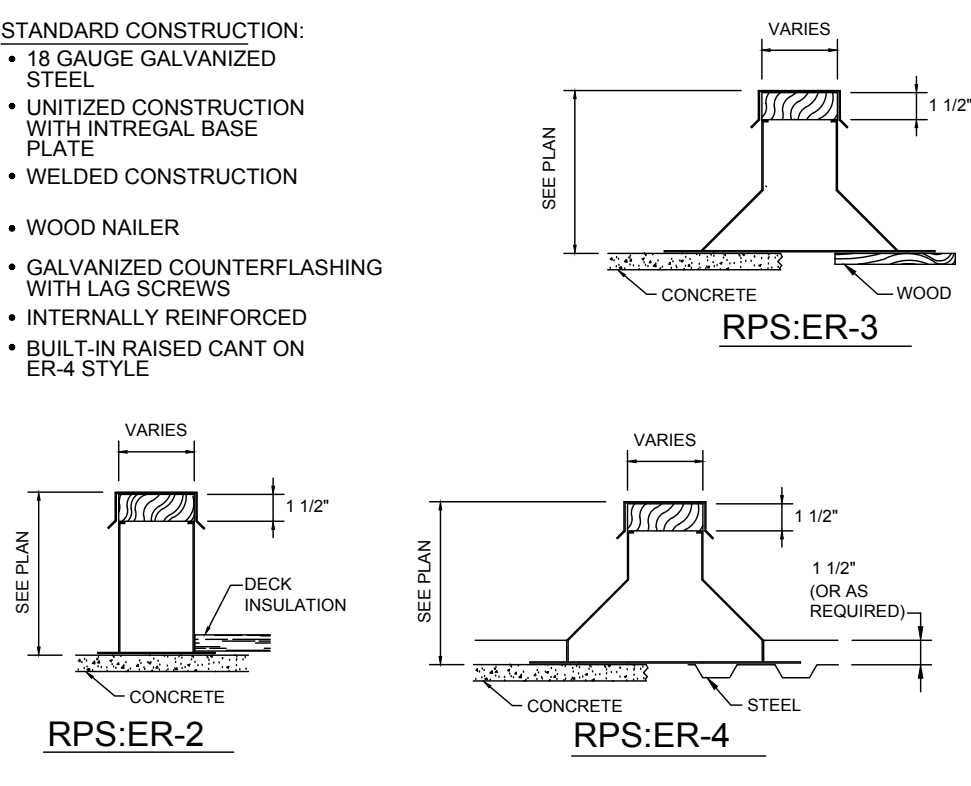


1 GYMNASIUM AND MECHANICAL ROOM - ROOF PLAN
SCALE: 1/16"=1'-0"

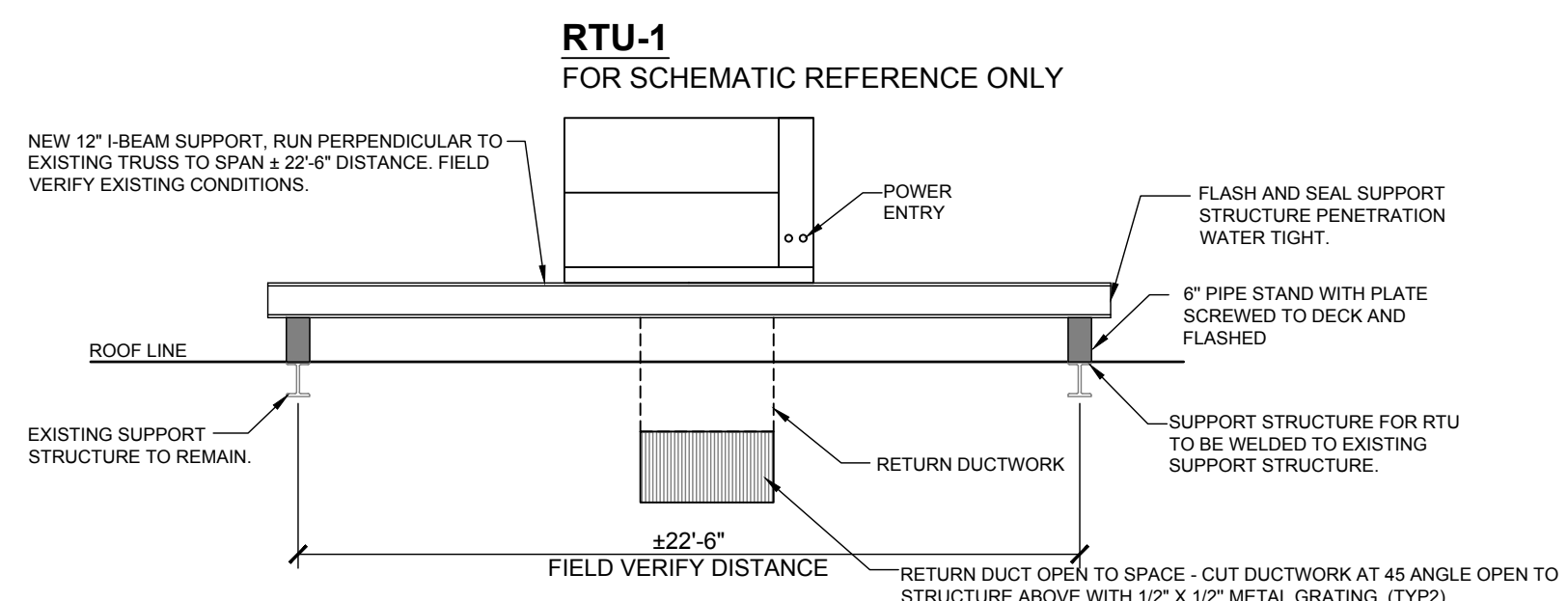
0 8' 16' 32'



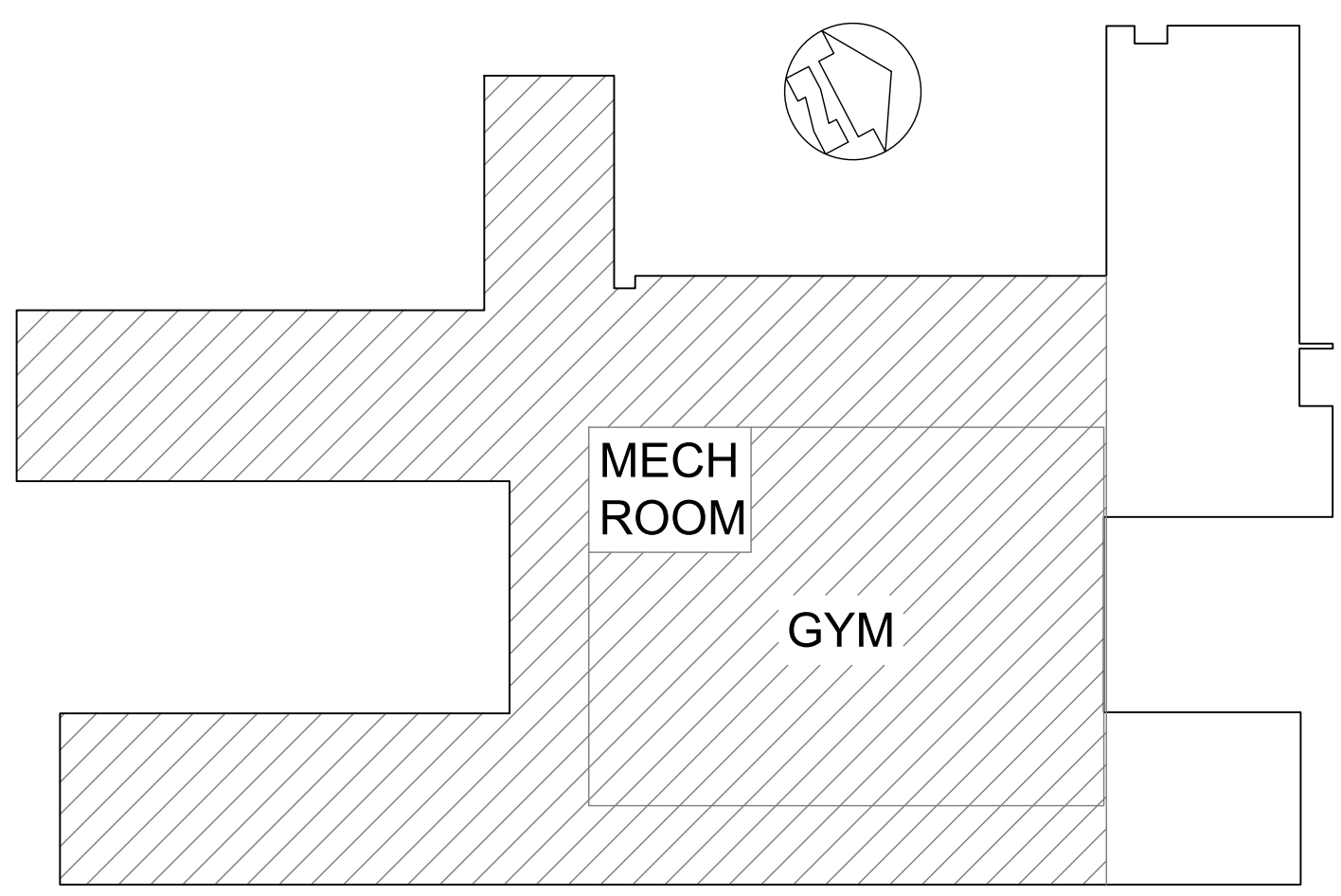
ELEVATED GAS STAND SUPPORT DETAIL
NOT TO SCALE



ROOFTOP EQUIPMENT SUPPORT RAIL DTL.
NO SCALE



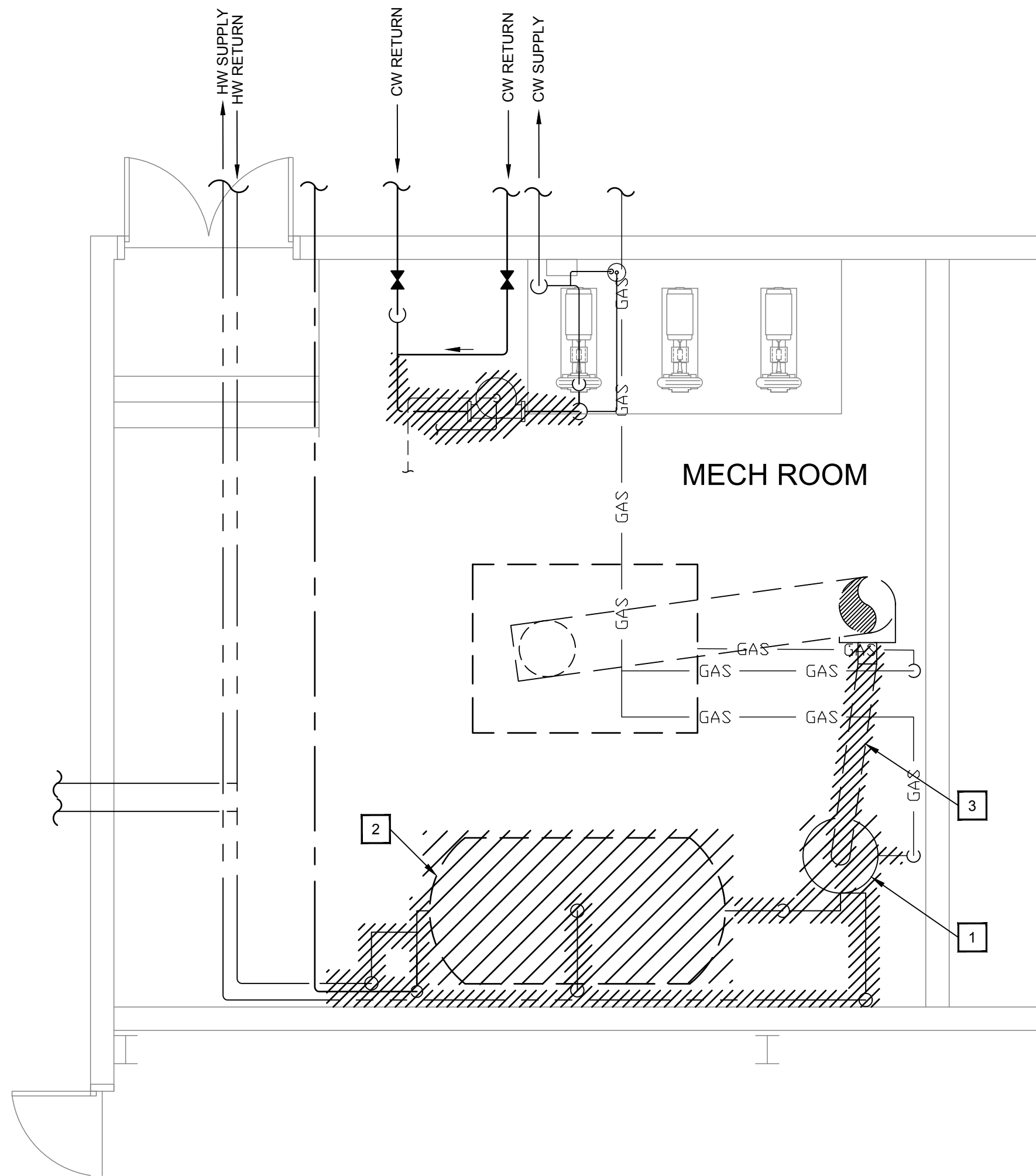
ELEVATION - ROOFTOP UNIT DETAIL
NOT TO SCALE



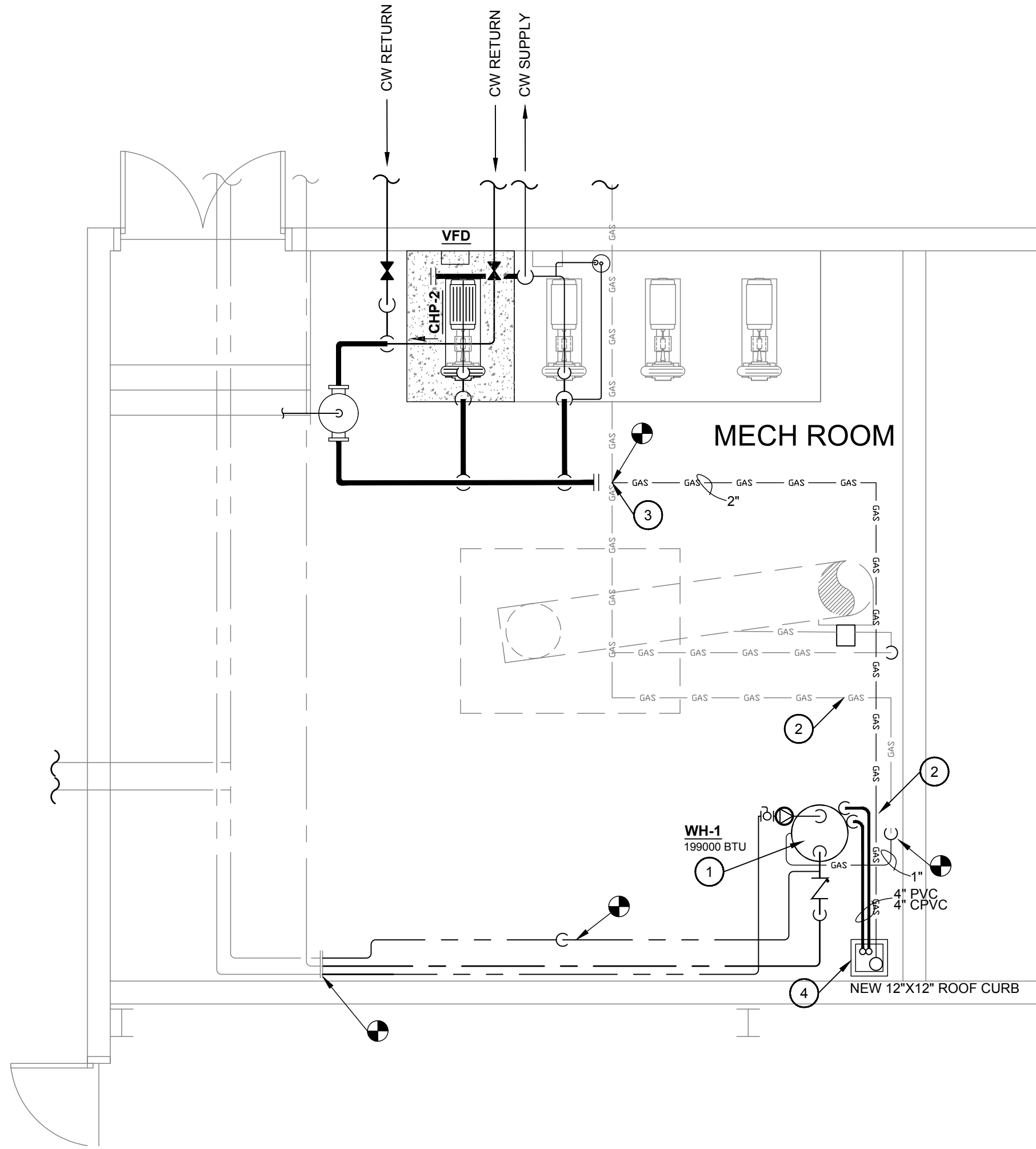
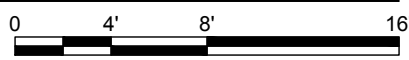
KEY PLAN

DEMO NOTES:

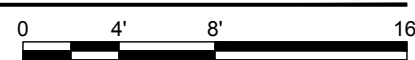
1. REMOVE EXISTING WATER HEATER IN ENTIRETY, INCLUDING ASSOCIATED WIRING, POWER, PIPING, EXHAUST FLUE, ETC.
2. REMOVE EXISTING HOT WATER STORAGE TANK INCLUDING ASSOCIATED PIPING. REMOVE ASSOCIATED PIPING AT MAIN AS INDICATED IN DRAWING.



1 MECHANICAL ROOM - DEMO
SCALE: 1/8"=1'-0"



2 MECHANICAL ROOM - NEW
SCALE: 1/8"=1'-0"

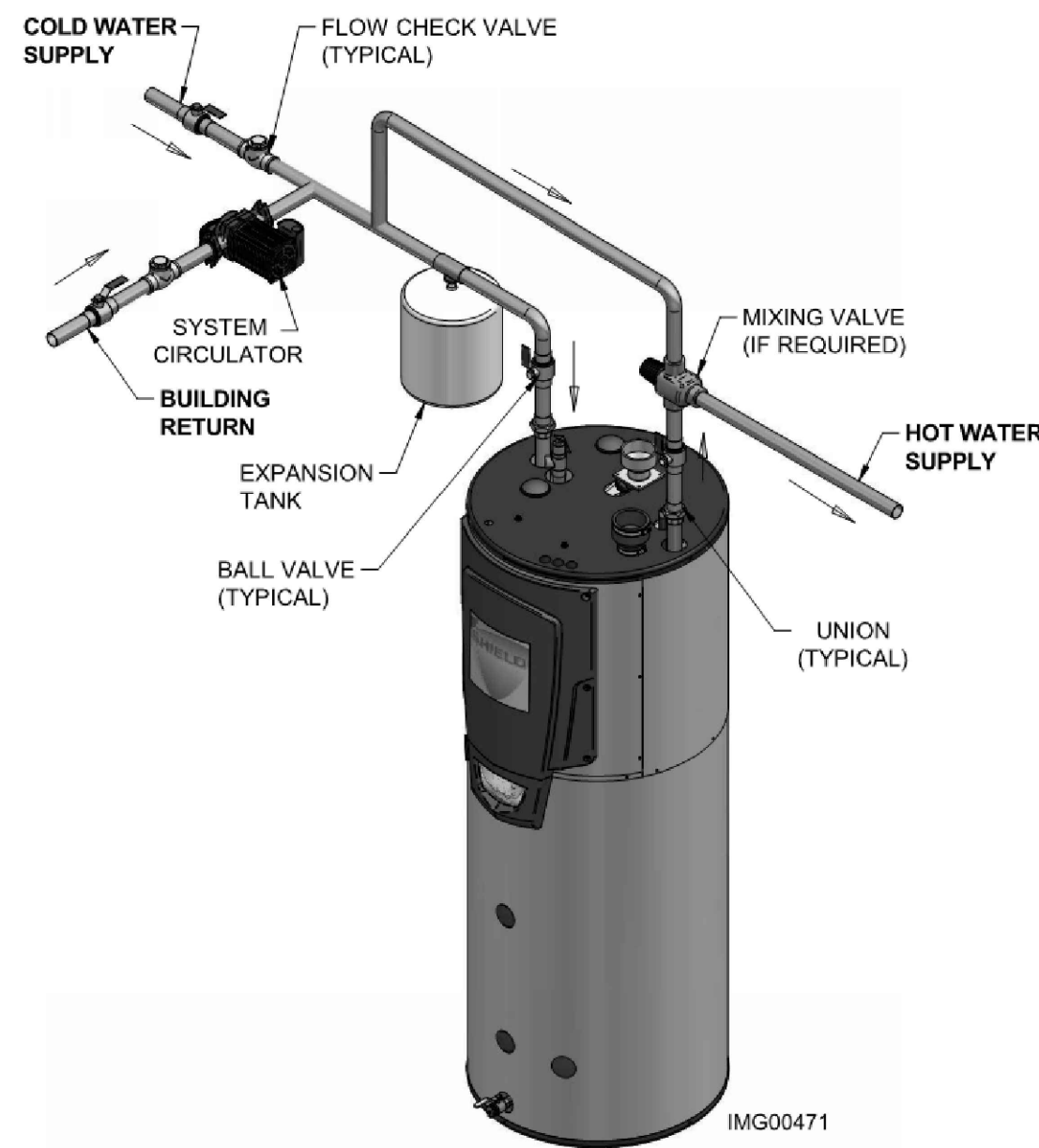


WATER HEATER REPLACEMENT NOTES:

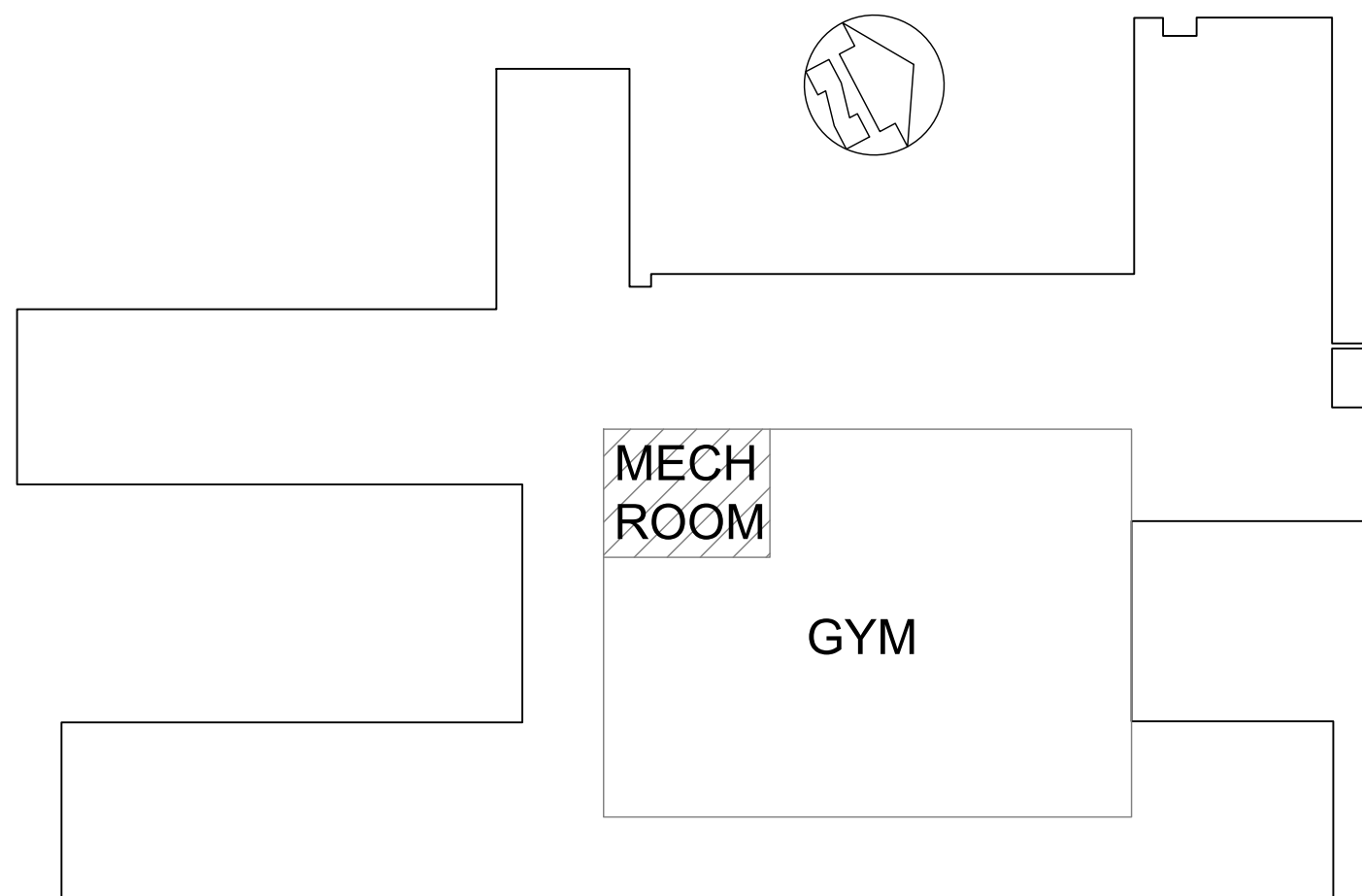
1. REPLACE EXISTING WATER HEATER WITH NEW 199,000 BTU WATER HEATER. UTILIZE EXISTING CONNECTIONS FOR DOMESTIC WATER, HOT WATER SUPPLY, HOT WATER RETURN AND NATURAL GAS. FIELD VERIFY CONDITION. CONNECT NEW GAS PIPING TO EXISTING WITH NEW SHUT OFF VALVE AND REGULATOR. INSTALL NEW EXPANSION TANK SIZED PER MANUFACTURES RECOMMENDATION. INSTALL NEW CIRCULATING PUMP. COORDINATE WITH ELEC. FOR WIRING. SEE MECHANICAL SCHEDULE FOR ADDITIONAL DETAILS ON WATER HEATER AND CIRCULATING PUMP.
2. ROUTE NEW 2" NATURAL GAS LINE THROUGH ROOF CURB AS INDICATED. SEAL PENTRATION WATER TIGHT. ROUTE NEW PIPING TO PACKAGE ROOF TOP UNITS LOCATED ON GYMNASIUM ROOF. SEE MECH ROOF PLAN FOR ADDITIONAL DETAILS.
3. ROUTE NEW FRESH AIR AND EXHAUST FROM NEW WATER HEATER THROUGH ROOF CURB. SEAL PENETRATIONS WATER TIGHT. PROVIDE GOOSENECK WITH METAL GRATE AT DISCHARGE OF PIPE.

PUMP REPLACEMENT NOTES:

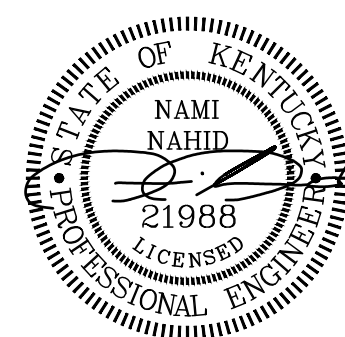
1. POUR ADDITIONAL 4" CONCRETE PAD FOR NEW CHILLED WATER PUMP CHP-2.
2. INSTALL NEW CHILLED WATER PUMP WITH VFD. TACO MODEL FI4011C, 1760 RPM, 450 GPM, 90' HEAD, 460/3 PHASE. PROVIDE VFD FOR 15HP PUMP. PUMP WITH VALVES AS PER DETAIL. THIS NEW PUMP WILL RUN CONTINUOUSLY WITH EXISTING PUMP IN BACK UP POSITION. INSTALL CHECK VALVE IN THE EXISTING PUMP DISCHARGE LINE.
3. INSTALL NEW 6" COALESCING AIR ELIMINATOR BASED ON TACO MODEL 4900. INSTALL NEW 3/4" MAKE UP WATER ASSEMBLY TIED TO EXISTING WATER LINE. PROVIDE SHUT OFF VALVES AS PER DRAWINGS AND DETAILS.
4. TIE NEW PUMP TO EXISTING TRACER CONTROL SYSTEM AND REPROGRAM.
5. NEW CHILLED WATER PIPING WITH INSULATION AND VAPOR BARRIER. INSULATE PUMP WITH BLACK FOAM INSULATION AND VELCRO FOR IMPELLER ACCESS.



WATER HEATER DETAIL
NO SCALE



KEY PLAN

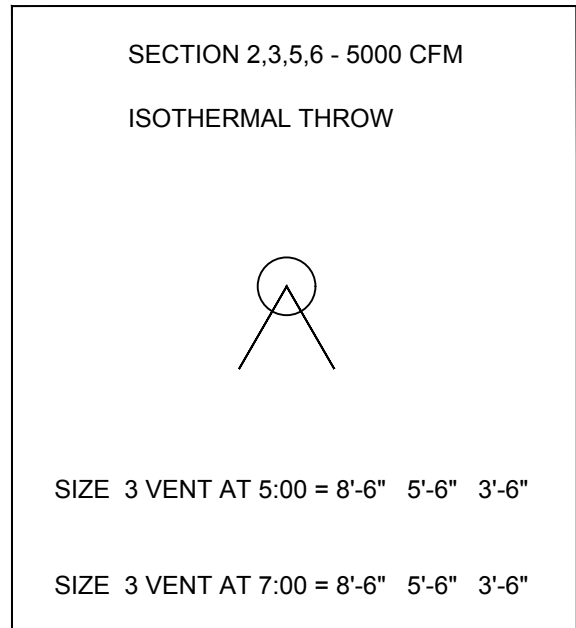
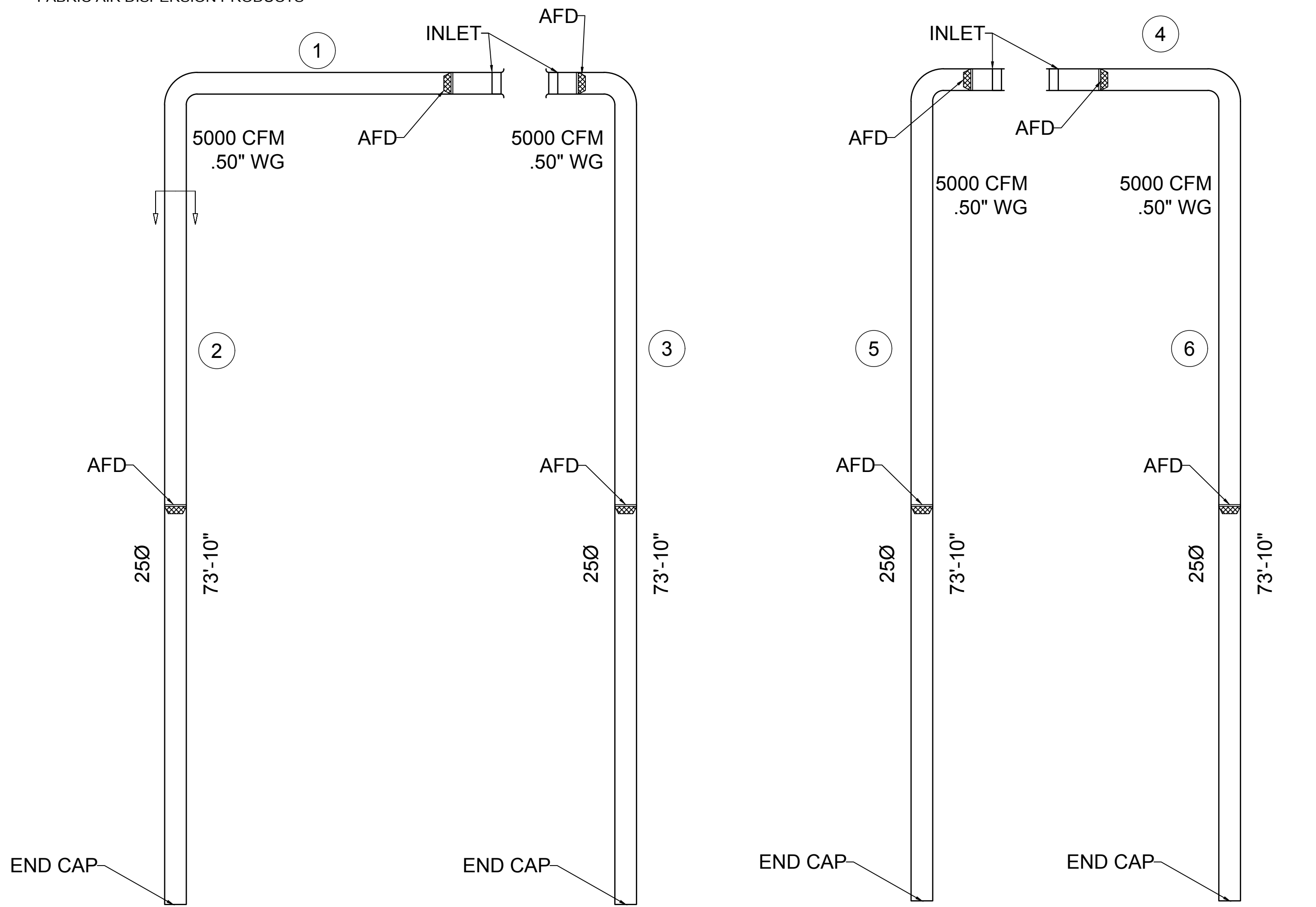


CONTRACT NO. 8310-23	ENGINEERING
CLIENT PROJECT NO. XXXX-XX	CONTRACTING GROUP
ALL RIGHTS RESERVED. NO PART OF THIS DOCUMENT SHALL BE REPRODUCED IN WHOLE OR IN PART WITHOUT WRITTEN PERMISSION.	STEWART RICHEY CONTRACTING GROUP
2137 GLEN LILY RD P. 270-842-5184	BOWLING GREEN, KY 42101 F. 270-782-6654
Providing Unsurpassed Service and Innovative Solutions through Our Exceptional People	

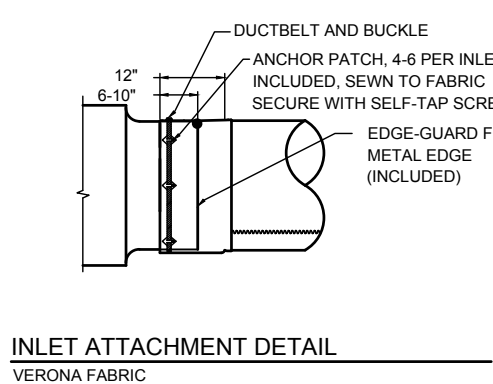
TODD COUNTY CENTRAL HS
2016 HVAC RENOVATION
ELKTON, KY

DESIGNED		BY		DATE		DESCRIPTION	
DESIGNED	NN	BY	NN	DATE		DESCRIPTION	
REVISIONS		NO					
SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1"							

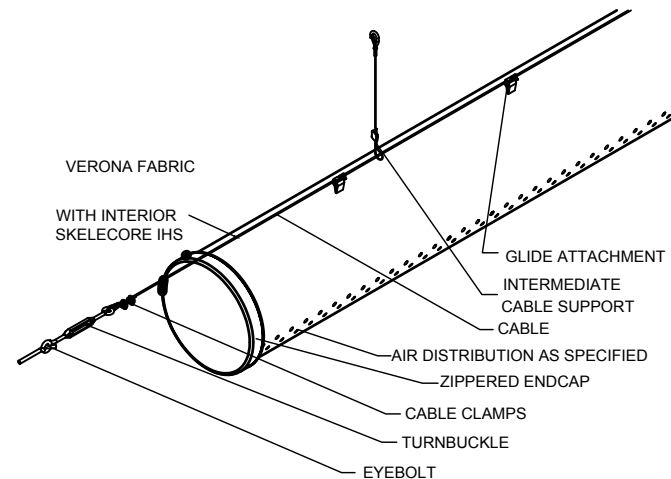
DATE:	MARCH 23, 2016
SCALE:	SEE SHEET
SHEET NAME:	MECHANICAL FLOOR PLAN
SHEET NO.	



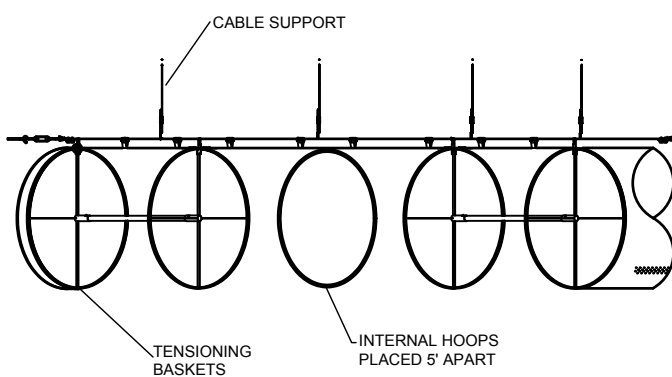
NOTES:
VERONA MATERIAL
PULL-TIGHT CABLE SUSPENSION
PROVIDE SKELECORE
3" ORIFICE VENT, HI-THROW
COLOR TO BE RED
HANGING HEIGHT = 20', COORDINATE WITH OTHER
TRADES.
COORDINATE WITH MANUFACTURER - DIAGRAM IS
FOR REFERENCE ONLY.



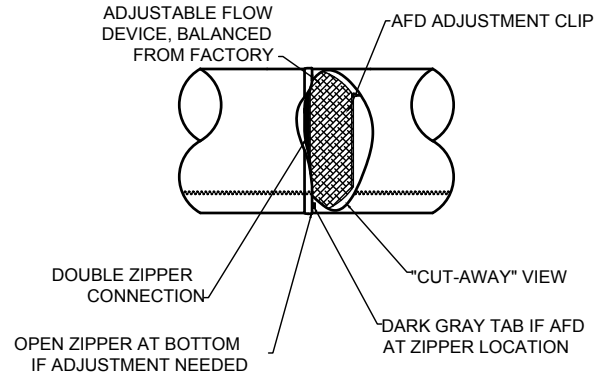
INLET ATTACHMENT DETAIL
VERONA FABRIC



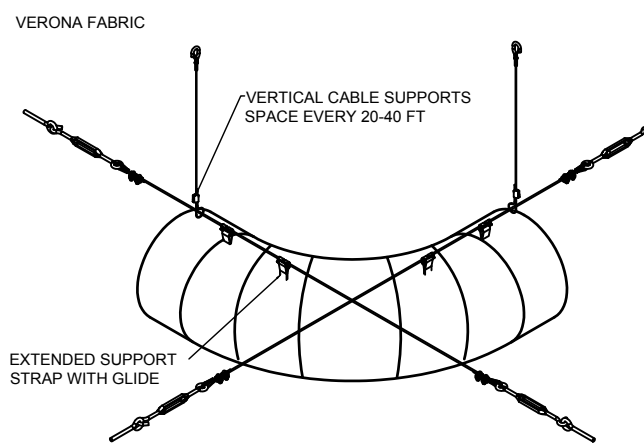
SUSPENSION DETAIL
1 ROW CABLE SUSPENSION AT 12 O'CLOCK /SKELE CORE



CUT AWAY VIEW OF SKELECORE IHS
VIEW OF INTERIOR OF DUCTSOX WITH SKELECORE IHS HANGING



ADJUSTABLE FLOW DEVICE (AFD)
INSTALLED AT ZIPPER LOCATION AT INLET OR AS SPECIFIED
IN OTHER LOCATIONS. ZIPPER TO ZIPPER CONNECTION AS
SHOWN. EXTERNAL LABEL IDENTIFIES LOCATION. VERONA FABRIC



SUSPENSION DETAIL
RADIUS ELBOW, 1 ROW CABLE SUSPENSION

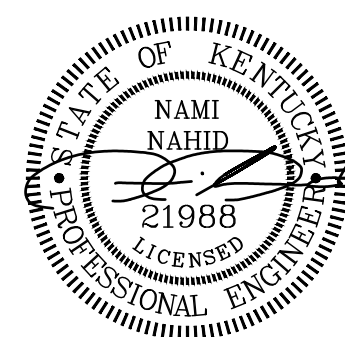
ROOF TOP UNIT SCHEDULE		
TAG	RTU-1	RTU-2
MAKE	RHEEM	RHEEM
MODEL	RKNL-G300DR30E	RKNL-G300DR30E
STAGES	2	2
TYPE	PACKAGE RTU VERTICLE DISCHARGE	PACKAGE RTU VERTICLE DISCHARGE
VOLTAGE	460V - 3PH	460V - 3PH
MCA (A)	60	60
MOP (A)	70	70
EER / SEER	10/NA	10/NA
IEER	14.1	14.1
AIRFLOW (CFM)	10,000	10,000
ESP (in. H2O)	0.45	0.45
MOTOR SIZE (HP)	7.5	7.5
TOTAL CAPACITY (COOLING BTU)	306,000	306,000
SENSIBLE CAPACITY	210,000	210,000
REFRIGERANT	R410a	R410a
HEATING TYPE	GAS	GAS
HEATING INPUT BTU/h	150,000 / 300,000	150,000 / 300,000
STAGES	2	2
EFFICIENCY	81%	81%
WEIGHT (LBS)	2468	2468
NOTES:		
1. PROVIDE WITH DISCONNECT		
2. 2" MERV 8 FILTER WITH HINGED ACCESS AT UNIT.		
3. PROVIDE WITH PROGRAMMABLE THERMOSTAT IN LOCKEABLE METAL COVER.		
4. PROVIDE WITH HAIL GUARD		

CIRCULATION PUMP SCHEDULE	
UNIT NO	CIRC. PUMP
MANUFACTURER	BELL AND GOSSET
MODEL	A 142F PL30
POWER (HP)	1/12
PHASE	1
VOLTAGE	115
GPM	20 GPM @ 10FT
QTY	3
NOTES:	
1. PROVIDE ANY ADDITIONAL ACCESSORIES FOR COMPLETE UNIT INSTILLATION. COORDINATE WITH ELECTRICAL.	

WATER HEATER SCHEDULE	
UNIT NO	WH-1
MANUFACTURER	LOCHINVAR
MODEL	PNR200-80
QTY	1
STORAGE CAPACITY	80 GAL
FUEL TYPE	GAS
BTU/hr INPUT	199,999
VOLTAGE	115 V AC
GAS CONNECTION	3/4"
NOTES:	
1. PROVIDE ANY ADDITIONAL ACCESSORIES FOR COMPLETE UNIT INSTALLATION. COORDINATE WITH ELECTRICAL.	

PIPING, DUCTWORK, AND INSULATION SCHEDULE	
REFRIGERANT PIPING WEATHER EXPOSED REFRIGERANT PIPING: RIDGID COPPER TYPE L, INSULATED WITH 1" BLACK FOAM AND ADDITIONAL UV PROTECTED PVC JACKET OVER INSTALLATION. PENETRATE REFRIGERANT PIPING THRU SIDE-WALL WITH A SLEEVED OPENING AND SEALED WATER TIGHT AFTER INSTALLATION. REFRIGERANT PIPING WITHIN BUILDING: RIDGID COPPER TYPE L, INSULATE PIPING WITH 1" BLACK FOAM. SUPPORT PIPING FROM STRUCTURE WITH UNISTRUTS FLEXIBLE INSULATED COPPER SHALL ONLY BE USED FOR SINGLE UNIT CONNECTION WITH MAXIMUM LENGTH OF 6'-0". DUCTWORK AND AIR DEVICES INSULATION. DUCTWORK AS PER LATEST SMACNA GUIDELINES FOR LOW PRESSURE SYSTEM. INSULATED ALL (SUPPLY, RETURN, EXHAUST, OUTSIDE AIR) WITH DOUBLE BUBBLE WRAP TYPE (R-8) ALL DIFFUSERS AND GRILLES SHALL HAVE ABOVE DIFFUSER MOLDED INSULATION ON FACE PLATES. DOMESTIC WATER PIPING. DOMESTIC HOT/COLD WATER SHALL BE TYPE L COPPER WITH 1" BLACK FOAM INSULATION. MARK CONTECT AND FLOW EVERY 10'	
HVAC CONTROLS SYSTEM	
MAIN BUILDING AUTOMATION SYSTEM: GYMANASIUM RTU CONTROL - STAND ALONE PROGRAMMABLE IN LOCKABLE COVER.	

TODD COUNTY O.A. CALCULATIONS					
	Unit Served	AREA SQ FT	DESIGNED O.A. CFM	People load	REQUIRED CFM 2012 IMC
GYMNASIUM	CU-1	650	50	2	49



CONTRACT NO. 8310-23	CLIENT PROJECT NO. XXXX-XX
ENGINEERING STEWART RICHEY CONTRACTING GROUP	NAME BOWLING GREEN, KY 42101 P: 270-842-5184 F: 270-762-6654 *Providing Unsurpassed Service and Innovative Solutions through Our Exceptional People*

TODD CENTRAL HIGH SCHOOL
2016 HVAC RENOVATION
ELKTON, KY

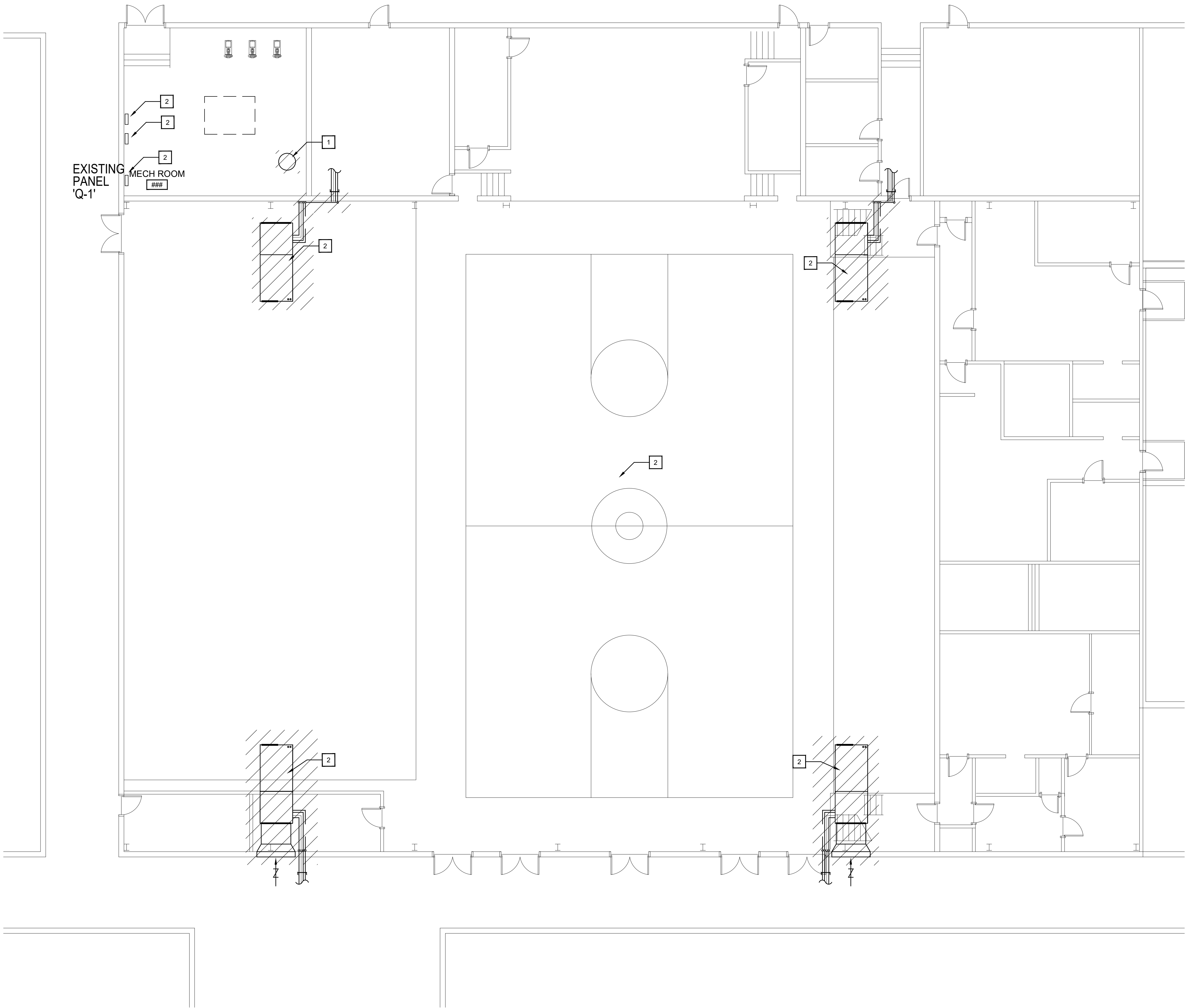
REVISIONS				DESIGNED	
NO	DESCRIPTION	DATE	BY		
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				WR	
				REVIEWED	
				NN	
				APPROVED	

DATE:
MARCH 23, 2016

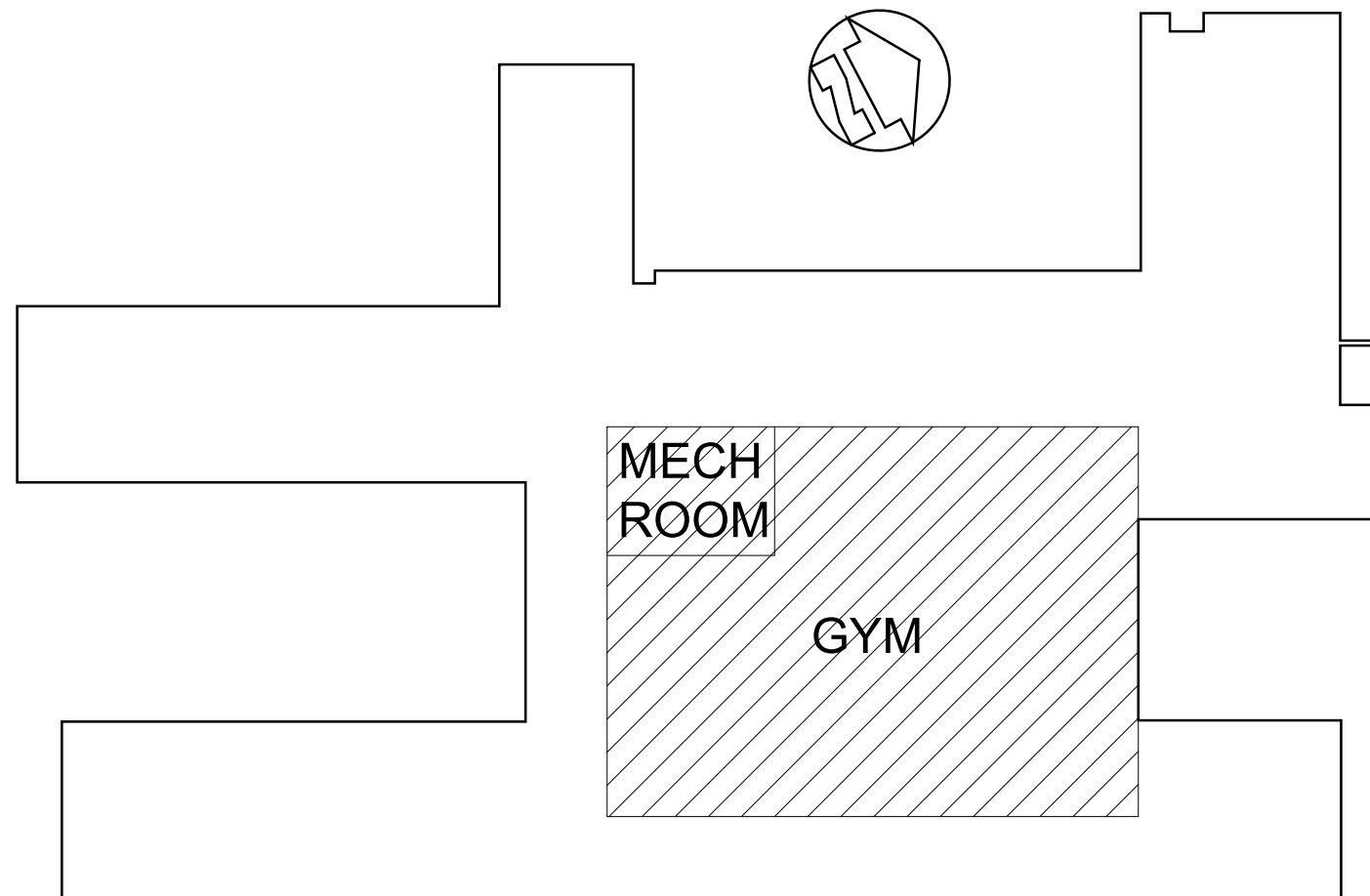
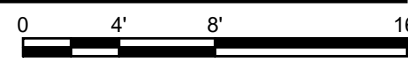
SCALE:
SEE SHEET

SHEET NAME:
MECHANICAL
FLOOR PLAN

SHEET NO.



1 GYM AND MECHANICAL ROOM - ELECTRICAL DEMO PLAN
SCALE: 1/8"=1'-0"



KEY PLAN

GENERAL NOTES:

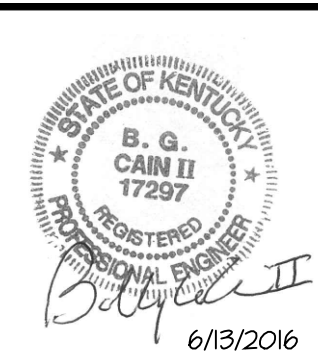
1. ALL WORK SHALL BE DONE BY A LICENSED CONTRACTOR.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR JOBSITE SAFETY, INCLUDING REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
3. ALL CONSTRUCTION DEBRIS SHALL BE DISPOSED OF BY THE CONTRACTOR, UNLESS NOTES OTHERWISE.
4. THERE SHALL BE NOTHING ABANDONED IN PLACE, UNLESS SPECIFICALLY IDENTIFIED AS SUCH.
5. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, INCLUDING ADDENDA, AND APPLICABLE CODES AND STANDARDS.
6. ALL TRADES SHALL COORDINATE THE ROUTING AND INSTALLATION OF HIS WORK WITH THAT OF ALL OTHER TRADES THROUGH THE GENERAL CONTRACTOR.
7. PROVIDE ALL EQUIPMENT, MATERIAL, LABOR, SUPERVISION, COST, AND SERVICES REQUIRED TO INSTALL COMPLETE AND WORKING SYSTEMS, INCLUDING ALL ITEMS AND APPURTENANCES NECESSARY, REASONABLE, INCIDENTAL, OR CUSTOMARILY INCLUDED, EVEN THOUGH EACH AND EVERY ITEM IS NOT SPECIFIED OR SHOWN.

DEMO NOTES:

1. DISCONNECT WATER HEATER FOR REMOVAL. SEE MECHANICAL AND ELECTRICAL SHEETS FOR ADDITIONAL INFORMATION ON NEW EQUIPMENT TO BE INSTALLED.
2. DISCONNECT ALL AIR HANDLERS IN GYM AND REMOVE ASSOCIATED CONDUIT AND CONDUCTORS. REMOVE ASSOCIATED CIRCUIT BREAKERS IN PANELBOARD Q-1 FOR REPLACEMENT. SEE MECHANICAL AND ELECTRICAL SHEET FOR INFORMATION ON NEW EQUIPMENT TO BE INSTALLED.

SALVAGE NOTE:

UNLESS NOTED OTHERWISE, SHOWN OR SPECIFIED, ALL HVAC EQUIPMENT, CHILLERS, PIPING, ETC REMOVED OR DEMOLISHED (EXCEPT THAT WHICH IS TO BE SALVAGED AND RELOCATED) AS DIRECTED BY DRAWINGS AND SPECIFICATIONS, SHALL BECOME THE PROPERTY OF THE OWNER. CONTRACTORS SHALL RETURN AND DELIVER EXISTING / SALVAGED EQUIPMENT TO THE OWNER'S SITE. COORDINATE WITH THE OWNER ON LOCATION.
IF EQUIPMENT IS NOT WANTED BY THE OWNER, CONTRACTOR SHALL LEGALLY DISPOSE OF EQUIPMENT BY PROPER MEANS.



CONTRACT NO. XXXX-23
CLIENT PROJECT NO. XXXX-XX
ALL RIGHTS RESERVED. NO PART OF THIS DOCUMENT SHALL BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF STEWART RICHEY CONTRACTING GROUP, INC.
STEWART RICHEY CONTRACTING GROUP, INC.
2137 GLEN LILY RD. BOWLING GREEN, KY 42101
P: 270-842-5184 F: 270-842-6654

ENGINEERING
STEWART RICHEY CONTRACTING GROUP
2137 GLEN LILY RD. BOWLING GREEN, KY 42101
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TODD COUNTY CENTRAL HS
2016 HVAC RENOVATION
ELKTON, KY

REVISIONS	NO.	DESCRIPTION	DATE	BY	DESIGNED
					BGC
					DRAWN: BGC
					REVIEWED: BGC
					APPROVED: BGC
SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1"					BGC

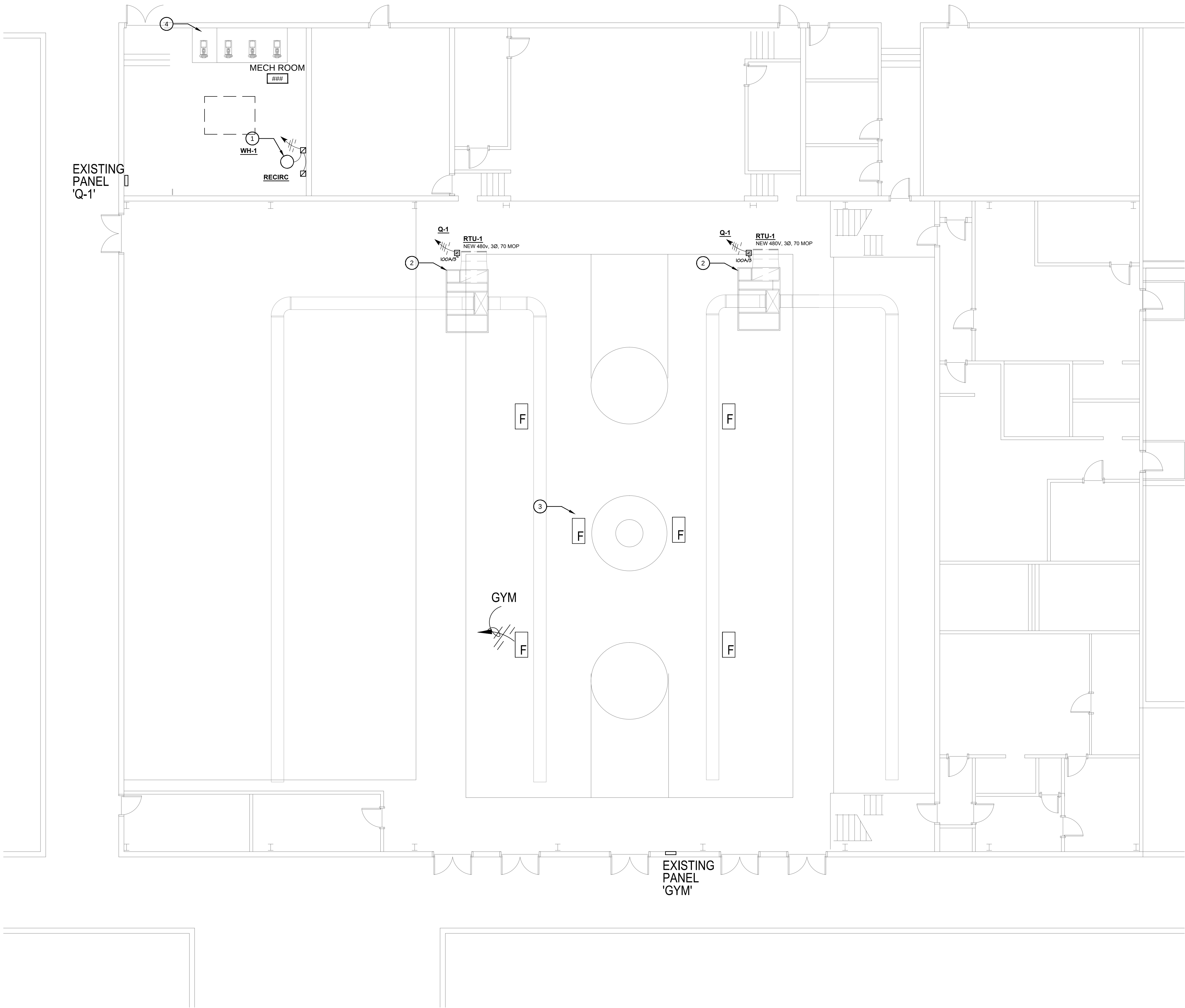
DATE: JUNE 13, 2016

SCALE: SEE SHEET

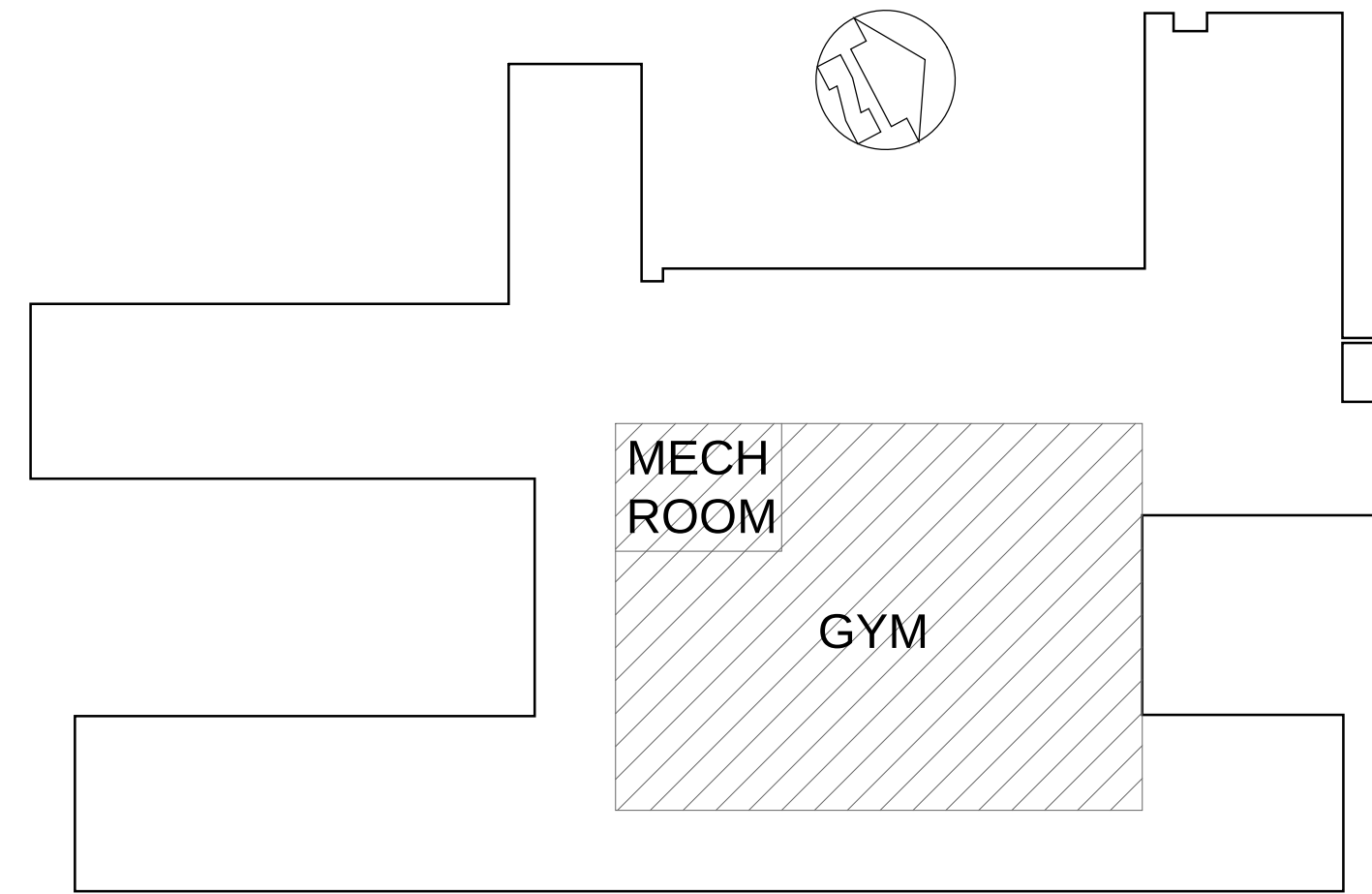
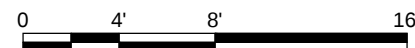
SHEET NAME: ELECTRICAL DEMO PLAN

SHEET NO.

E4.0



1 GYM AND MECHANICAL ROOM ELECTRICAL PLAN
SCALE: 1/8"=1'-0"



KEY PLAN

GENERAL NOTES:

- ALL WORK SHALL BE DONE BY A LICENSED CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR JOBSITE SAFETY, INCLUDING REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
- ALL CONSTRUCTION DEBRIS SHALL BE DISPOSED OF BY THE CONTRACTOR, UNLESS NOTES OTHERWISE.
- THERE SHALL BE NOTHING ABANDONED IN PLACE, UNLESS SPECIFICALLY IDENTIFIED AS SUCH.
- ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, INCLUDING ADDENDA, AND APPLICABLE CODES AND STANDARDS.
- ALL TRADES SHALL COORDINATE THE ROUTING AND INSTALLATION OF HIS WORK WITH THAT OF ALL OTHER TRADES THROUGH THE GENERAL CONTRACTOR.
- PROVIDE ALL EQUIPMENT, MATERIAL, LABOR, SUPERVISION, COST, AND SERVICES REQUIRED TO INSTALL COMPLETE AND WORKING SYSTEMS, INCLUDING ALL ITEMS AND APPURTENANCES NECESSARY, REASONABLE, INCIDENTAL, OR CUSTOMARILY INCLUDED, EVEN THOUGH EACH AND EVERY ITEM IS NOT SPECIFIED OR SHOWN.

CONSTRUCTION NOTES:

- CONNECT NEW WATER HEATER AND CIRCULATING PUMP TO EXISTING 20A/1P SPARE CIRCUIT BREAKER IN EXISTING 120/208V PANELBOARD IN MECHANICAL ROOM. FURNISH AND INSTALL LOCAL DISCONNECT SWITCH FOR EACH UNIT.
- FURNISH AND INSTALL NEW 70A/3P CIRCUIT BREAKER IN EXISTING SQUARE D CIRCUIT BREAKER PANELBOARD Q1, CIRCUITS 17 AND 23, TO MATCH EXISTING PANELBOARD. ROUTE 3# 4.1 #8G, 1" C FROM NEW CIRCUIT BREAKER TO NEW ROOFTOP UNIT.
- FURNISH AND INSTALL NEW LED LIGHT FIXTURES, MAXLITE CAT NO. BLHT235USD4820-MLFHL8DEWGL OR EQUAL THROUGHOUT GYMNASIUM. EXACT LOCATION TO BE DETERMINED IN FIELD BY ENGINEER/OWNER. CONNECT TO EXISTING GYMNASIUM LIGHTING PANEL AS REQUIRED.
- FURNISH AND INSTALL NEW 35A/3P CIRCUIT BREAKER IN EXISTING SQUARE D CIRCUIT BREAKER PANELBOARD Q1 TO MATCH EXISTING PANELBOARD. ROUTE 3# 8.1 #10G, 3/4" C FROM NEW CIRCUIT BREAKER TO NEW VFD/PUMP UNIT. VFD PROVIDED BY MECHANICAL, INSTALLED BY ELECTRICAL MECHANICAL TO START UP AND PROGRAM VFD AS REQUIRED.

STATE OF KENTUCKY
B. G. CAIN II
17297
REGISTERED PROFESSIONAL ENGINEER
6/13/2016

CONTRACT NO. XXXX-23
CLIENT PROJECT NO. XXXX-XX
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BOWLING GREEN, KY 42101
"Providing Unsurpassed Service and Innovative Solutions through Our Exceptional People"

ENGINEERING
STEWART RICHEY CONTRACTING GROUP

TODD COUNTY CENTRAL HS
2016 HVAC RENOVATION
ELKTON, KY

NO.	DESCRIPTION	DATE	BY	DESIGNED
				BGC
				BGC
				BGC
				BGC

DATE: JUNE 13, 2016
SCALE: SEE SHEET
SHEET NAME: ELECTRICAL FLOOR PLAN
SHEET NO.:
SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1"

E4.1