MECHANICAL GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL BE PURCHASED AND INSTALLED IN ACCORDANCE WITH ALL NATIONAL & NEW YORK STATE CODES AND REGULATIONS (AS WELL AS ALL APPLICABLE LOCAL CODES & REGULATIONS). THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL HVAC WORK IS PROVIDED AND INSTALLED IN STRICT ACCORDANCE WITH SEISMIC REQUIREMENTS.
2. DO NOT SCALE FROM THESE DRAWINGS.
3. THE EXACT MOUNTING HEIGHTS AND LOCATIONS OF ALL HVAC EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL OTHER MECHANICAL, ELECTRICAL, PLUMBING, FIRE SPRINKLER, ARCHITECTURAL AND STRUCTURAL SYSTEMS. DURING SHOP DRAWINGS SUBMISSIONS, SHOW ALL MOUNTING HEIGHTS OF DUCTWORK, UNITS, ETC.
4. VERIFY ALL EQUIPMENT VOLTAGES WITH THE ELECTRICAL DESIGN PRIOR TO ORDERING EQUIPMENT.
5. PROVIDE PHASE LOSS PROTECTION FOR ALL POLY-PHASE MOTOR DEVICES.
6. DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET STEEL IN STRICT COMPLIANCE WITH THE LATEST EDITION OF THE ASHRAE, NFPA, AND SMACNA GUIDE RECOMMENDATIONS. ALL DUCTS TO HAVE PITTSBURGH TYPE LOCK FOR LONGITUDINAL SEAMS AND DRIVE SLIP / "S" SLIP FOR TRANSVERSE JOINTS. "DUCT-MATE" JOINT SYSTEM IS ACCEPTABLE IN LIEU OF PRIOR SEAM SYSTEMS. SIZES AS SHOWN INDICATE INSIDE CLEAR DIMENSIONS OF THE AIR PASSAGE. DUCTWORK SHALL BE FULLY INSULATED AS PER APPLICABLE CODES AND WRITTEN SPECIFICATIONS.
7. DUCT SIZES MUST BE VERIFIED FOR CLEARANCES AT THE JOB SITE PRIOR TO FABRICATION. DIMENSIONS MAY BE CHANGED TO ACCOMMODATE CONSTRUCTION AS LONG AS EFFECTIVE CROSS-SECTIONAL AREA IS MAINTAINED. DUCT TRANSITIONS SHALL BE CONSTRUCTED WITH A SLOPE OF 1" TO 4". ALL DEVIATIONS FROM ORIGINAL CONTRACT DRAWINGS SHALL BE REVIEWED BY ENGINEER DURING THE SHOP DRAWING PROCESS.
8. PROVIDE MANUAL BALANCING DAMPERS AS REQUIRED TO PROPERLY BALANCE EACH INDIVIDUAL AIR DISTRIBUTION SYSTEM. IF THE LOCATION OF THE BALANCING DAMPER IS NOT DEFINED ON THE DRAWINGS, THE FOLLOWING MINIMUMS STANDARDS SHALL GOVERN. ALL SUPPLY, RETURN, AND EXHAUST MAIN BRANCHES FROM TRUNKS, EACH SPLIT AND ALL SUB- BRANCHES FROM MAIN SHALL INCORPORATE BALANCING DAMPERS.
9. PROVIDE FLEXIBLE CONNECTORS AT ALL DUCT CONNECTIONS TO VIBRATING EQUIPMENT. THESE CONNECTORS SHALL BE INSTALLED IN CLOSE PROXIMITY TO SUCH EQUIPMENT.
10. PROVIDE FIRE DAMPERS WITH RATED ACCESS DOORS AT ALL DUCT PENETRATIONS THROUGH FIRE RATED WALLS, SMOKE AND FIRE STOPPING, SHAFT, FLOORS, RATED CEILINGS AND PARTITIONS AS REQUIRED TO MAINTAIN ARCHITECTURAL FIRE RATINGS. REFER TO THE ARCHITECTURAL PLANS AND SPECIFICATIONS FOR LOCATIONS AND FIRE RATING REQUIREMENTS. CONTRACTOR MUST FULLY REVIEW ALL ARCHITECTURAL AND ENGINEERING DRAWINGS AND VISIT THE SITE PRIOR TO SUBMITTING THE BID. NO EXTRAS WILL BE ALLOWED.
11. ALL ACCESS DOORS REQUIRED IN GENERAL CONSTRUCTION ARE TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY SIZE, TYPE AND LOCATION OF SUCH DOORS FOR PROPER ACCESS TO ALL CONCEALED HVAC EQUIPMENT, VALVES AND OTHER RELATED EQUIPMENT. THE CONTRACTOR SHALL IDENTIFY THESE REQUIREMENTS ON A COORDINATED SHOP DRAWING PRIOR TO SYSTEM FABRICATION AND INSTALLATION.
12. ALL CEILING MOUNTED EQUIPMENT MUST BE SUPPORTED DIRECTLY FROM BUILDING STRUCTURE WITH COMBINATION SPRING AND NEOPRENE-IN-SHEAR HANGERS AND ROD. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT THE LOAD.
13. THE CONTRACTOR MUST CONTRACT AN INDEPENDENT NEBB CERTIFIED AIR BALANCING & TESTING COMPANY TO PERFORM THE AIR BALANCING WORK AND ASSOCIATED SYSTEM AIR BALANCING REPORT. ALL WORK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH ALL APPLICABLE CODES, REGULATIONS, PLANS AND WRITTEN SPECIFICATIONS. SUBMIT THE FINAL AIR BALANCE REPORT TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT, AS DETERMINED BY THE AND OWNER/CLIENT. THE AIR BALANCE REPORT MUST INCLUDE ALL SUPPLY, RETURN, & EXHAUST AIR TERMINALS, FRESH AIR (OUTSIDE AIR) INTAKE AND VENTILATION EXHAUST CFM RATES FOR ALL UNITS. ALSO INCLUDE ACTUAL SUPPLY & RETURN AIR VELOCITY & STATIC PRESSURE READINGS ALONG WITH ALL MOTOR AMPERAGES FOR ALL UNITS.
14. THE CONTRACTOR IS TO INCLUDE IN THEIR BID ALL LOW VOLTAGE CONTROL WIRING, THERMOSTATS, RELAYS, TRANSFORMERS, STARTERS ETC FOR A COMPLETE OPERATING CONTROL SYSTEM AS DESCRIBED IN THE SEQUENCE OF OPERATIONS, THE CONTRACTOR IS ALSO RESPONSIBLE FOR LINE VOLTAGE CONTROL FOR EXHAUST FANS CONTROLLED FROM LIGHT SWITCH AND THERMOSTATS. ALL CONTROL WIRING IN THE AREAS THAT DO NOT HAVE DROPPED CEILINGS THE CONTRACTOR MUST PROVIDE ALL CONTROL WIRING CONDUIT. IN AREAS OF DROPPED CEILING PLENUM RATED CONTROL WIRING CAN BE RUN EXPOSED ABOVE CEILING.
15. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS/SPECIFICATIONS.

CODE REFERENCE

2020 NEW YORK STATE BUILDING CODE
2020 NEW YORK STATE MECHANICAL CODE
2020 NEW YORK STATE ENERGY CONSERVATION CODE

MECHANICAL DEMOLITION NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION OF MECHANICAL EQUIPMENT AND MATERIAL RELATING TO THEIR RESPECTIVE TRADE.
2. THE CONTRACTOR SHALL REMOVE, RELOCATE, REPLACE, ADJUST, ADAPT AND MODIFY EXISTING EQUIPMENT AND/OR SYSTEMS AS REQUIRED WHEN SUCH WORK IS UNCOVERED AND FOUND TO INTERFERE WITH COMPLETION OF WORK IN THIS CONTRACT OR OTHER CONTRACT WORK.
3. EXECUTE THE DEMOLITION IN CAREFUL AND ORDERLY MANNER WITH THE LEAST POSSIBLE DISTURBANCE TO THE PUBLIC, EGRESS OR THE FUNCTIONING OF THE EXISTING BUILDING.
4. TAKE NECESSARY PRECAUTIONS TO PREVENT DUST AND DIRT FROM RISING BY WETTING DEMOLISHED DEBRIS. EXCESSIVE USE OF WATER WILL NOT BE PERMITTED.
5. PRIOR TO DEMOLITION, CONTRACTOR SHALL REVIEW WITH OWNER ALL MATERIALS TO BE REMOVED. SHOULD THE OWNER WANT TO KEEP ANY MATERIALS THE CONTRACTOR SHALL REMOVE AND DELIVER THE PARTS TO THE OWNER ON THE SITE WHERE SO DIRECTED. OTHERWISE ALL DEMOLISHED OR REMOVED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND BE DISPOSED OF IN A LEGAL MANNER.
6. DEMOLITION SHALL INCLUDE REMOVAL OF ALL PARTS AND PIECES IN THEIR ENTIRETY BACK TO POINTS INDICATED OR IF NOT INDICATED BACK TO THEIR POINT OF SOURCE.
7. WHERE CONDITIONS PROHIBIT TOTAL REMOVAL OF THE WORK, THE REMAINING PORTION SHALL BE CUT FLUSH WITH THE SURROUNDING SURFACE AND BE CAPPED, PLUGGED OR SEALED AND THE SURROUNDING SURFACE SHALL BE REFINISHED IN AN APPROVED MANNER.
9. DO NOT REMOVE EXISTING STRUCTURAL WORK. DO NOT REMOVE OPERATIONAL ELEMENTS AND SAFETY-RELATED COMPONENTS IN A MANNER RESULTING IN A REDUCTION OF CAPACITIES TO PERFORM IN THE MANNER INTENDED OR RESULTING IN DECREASED OPERATIONAL LIFE, INCREASED MAINTENANCE, OR DECREASED SAFETY.
10. REMOVALS, DISCONNECTIONS, AND RELOCATIONS SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE INVOLVED AND SHALL BE EMPLOYED BY A CONTRACTOR LICENSED IN THE TRADE INVOLVED. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ACCEPTED TRADE PRACTICES.
11. PROVIDE ADEQUATE TEMPORARY SUPPORT FOR WORK TO REMAIN, TO PREVENT FAILURE. DO NOT ENDANGER OTHER WORK.
12. PROTECTION: PROVIDE ADEQUATE PROTECTION WHERE REQUIRED FOR THE PRESENT BUILDING AND ITS CONTENTS. TEMPORARY DUSTPROOF BARRIERS AND BARRICADES SHALL BE ERECTED WHERE REQUIRED FOR PROTECTION OF PERSONNEL, PROTECTION FROM DUST AND DIRT, FOR SECURITY, FIRE AND WEATHER PROTECTIVE REASONS.
13. CONTRACTOR SHALL TAKE EVERY PRECAUTION AGAINST FIRE BY EMPLOYING FIRE DEPARTMENT TYPE HOSES AND PORTABLE FIRE EXTINGUISHERS AS REQUIRED BY OSHA AND/OR THE OWNER'S INSURANCE UNDERWRITER.
14. BEFORE STARTING DEMOLITION OPERATIONS, PROVIDE THE NECESSARY PROTECTIVE DEVICES, WHERE REQUIRED, AND IN STRICT ACCORDANCE WITH OSHA RULES AND REGULATIONS.
14. USE TEMPORARY ENCLOSURES, OR OTHER SUITABLE METHODS TO LIMIT DUST AND DIRT RISING AND SCATTERING TO LOWEST PRACTICAL LEVEL. COMPLY WITH GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
15. FIELD VERIFY DEMOLITION REQUIREMENTS AND EXISTING CONDITIONS. DEMOLITION NOTES ARE INDICATED IN NOTE FORM.
16. CONTRACTOR SHALL ESTABLISH A PATH OF TRAVEL AND TIME SCHEDULE FOR THE REMOVAL OF ALL DEBRIS AND WASTE, AND HAVE THIS APPROVED BY OWNER. CONTRACTOR IS TO ENSURE THAT ALL CORRIDORS AND PUBLIC AREAS BE KEPT FREE OF OBSTRUCTIONS, DEBRIS, AND ARE TO BE BROOM SWEPT CLEAN AT ALL TIMES.
17. CONTRACTOR SHALL VISIT THE SITE AND BECOME INFORMED AS TO THE CONDITION OF THE PREMISES AND THE EXTENT AND CHARACTER OF WORK REQUIRED. NO ADDITIONAL COMPENSATION WILL BE APPROVED DUE TO FIELD CONDITIONS.

NYSECC ENERGY COMPLIANCE STATEMENT:

PER SECTION C101.7 OF THE 2020 NYSECC HISTORIC BUILDINGS ARE EXEMPT FROM THE REQUIREMENTS OF THE ENERGY CODE.

HVAC SYMBOL LIST

IDENTIFIER	DESCRIPTION
	NEW DUCTWORK OR PIPING
	EXISTING DUCTWORK OR PIPING TO BE REMOVED
	EXISTING DUCTWORK OR PIPING TO REMAIN
24X12 / 24X12	DOUBLE-LINE AND SINGLE-LINE RECTANGULAR DUCT, FIRST NUMBER INDICATES SIDE IN VIEW IN INCHES, SECOND NUMBER INDICATES SIDE IN DEPTH IN INCHES
	FLEXIBLE DUCTWORK
	REGULAR SUPPLY AIR DUCT (UP AND DOWN)
	REGULAR RETURN AIR DUCT (UP AND DOWN)
	REGULAR EXHAUST AIR DUCT (UP AND DOWN)
	REGULAR OUTSIDE AIR DUCT (UP AND DOWN)
VD	VOLUME DAMPER
BD	BACKDRAFT DAMPER
	MOTOR OPERATED DAMPER
XXX / XX	EQUIPMENT TAG / EQUIPMENT NUMBER
XXX / X-XXX	DETAIL TAG/CALL OUT TAG / MECHANICAL SHEET NUMBER
T	THERMOSTAT
	EXHAUST GRILLE
F#	REFER TO SUPPLEMENTAL FIGURE INDICATED BY NUMBER (I.E. F2 REFERS TO FIGURE 2)

HVAC ABBREVIATIONS

IDENTIFIER	DESCRIPTION
AC	DIRECT EXPANSION AIR CONDITION UNIT
CFM	CUBIC FEET PER MINUTE
COND	CONDENSATE
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
DB	DRY BULB
DN	DOWN
EA	EXHAUST AIR
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EUH	ELECTRIC UNIT HEATER
EER	ENERGY EFFICIENCY RATIO
EG	EXHAUST GRILLE
FAI	FRESH AIR INTAKE
GC	GENERAL CONTRACTOR
MBH	THOUSAND BTU PER HOUR
PC	PLUMBING CONTRACTOR
RG	RETURN GRILLE
RGL	REFRIGERANT GAS LINE
RLL	REFRIGERANT LIQUID LINE
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
SD	SUPPLY DIFFUSER
TYP.	TYPICAL
VIF	VERIFY IN FIELD

SCOPE OF WORK

DEMOLITION

1. REMOVE TWO (2) EXISTING RANGE HOODS AS INDICATED.
2. REMOVE TWO (2) EXISTING FLUES AS INDICATED.
3. REMOVE TWO (2) EXISTING CEILING VENTILATION GRILLES AS INDICATED.
4. REMOVE ONE (1) EXISTING RELIEF VENT AS INDICATED.
5. REMOVE TWO (2) EXISTING ROOFTOP FANS AND ASSOCIATED DUCTWORK, CONTROLS AND ACCESSORIES.

CONSTRUCTION

1. PROVIDE ONE (1) NEW ROOFTOP AIR HANDLING UNIT RTU-1. PROVIDE DUCTWORK TO NEW SPACES AS INDICATED.
2. PROVIDE ONE (1) NEW OUTDOOR SPLIT CONDENSER AIR CONDITIONER UNIT AS INDICATED.
3. PROVIDE TWO (2) NEW CEILING RECESSED INDOOR AIR CONDITIONER UNITS AS INDICTED.
4. PROVIDE ONE (1) NEW PACKAGED TERMINAL AIR CONDITIONER UNIT AS INDICATED
5. PROVIDE ONE (1) NEW GENERAL KITCHEN/TRASH ROOM EXHAUST FAN ON ROOF AND ASSOCIATED DUCTWORK AS INDICATED.
6. PROVIDE ONE (1) NEW ATTIC EXHAUST FAN AS INDICATED.
7. PROVIDE ONE (1) NEW WALL MOUNTED ELECTRIC UNIT HEATER AS INDICATED.
8. PROVIDE TWO (2) NEW RAIN RESISTANT LOUVERS AS INDICATED.

MECHANICAL DRAWING LIST

SHEET NO.	SHEET NAME	REVISON NO.	REVISION DATE
K-M-01	MECHANICAL NOTES, SYMBOLS & LEGENDS	0	-
K-M-11	MECHANICAL 1ST FLOOR DEMOLITION PLAN	0	-
K-M-12	MECHANICAL ROOF DEMOLITION PLAN	0	-
K-M-21	MECHANICAL 1ST FLOOR CONSTRUCTION PLAN	0	-
K-M-22	MECHANICAL ATTIC FLOOR CONSTRUCTION PLAN	0	-
K-M-23	MECHANICAL ROOF CONSTRUCTION PLAN	0	-
K-M-61	MECHANICAL SCHEDULES	0	-
K-M-81	MECHANICAL DETAILS 1 OF 2	0	-
K-M-82	MECHANICAL DETAILS 2 OF 2	0	-
K-M-91	MECHANICAL CONTROLS	0	-

MECHANICAL VENTILATION SCHEDULE

SPACE DETAILS		MECH CODE REQUIREMENTS							DESIGN				
ROOM	AREA (FT²)	# PEOPLE	OA / SQ FT	OA PER PERSON	# OF FIXT (TOILET/URINALS/SLOP SINK)	EXH CFM/SQFT	EXH CFM/FIXTURE	NET OA	MIN DESIGN OA FLOW (CFM)	ACTUAL SA FLOW (CFM)	ACTUAL RA FLOW (CFM)	ACTUAL EA FLOW (CFM)	NOTES
105 KITCHEN	1347	27	0.12	7.5	-	0.7	-	943	1000	2400	1400	1000	1
102 DRY ROOM	67	-	0.12	-	-	-	-	8	100	100	-	100	1

NOTES:
1. NEW YORK STATE MECHANICAL CODE.

NATURAL VENTILATION SCHEDULE

SPACE DETAILS			DESIGN			NOTES
ROOM	AREA (SF)	4% FLOOR AREA (SF)	WINDOW FREE AREA (SF)	DOOR AREA (SF)	TOTAL OPENABLE AREA (SF)	
101 SEASONAL FOOD SERVICE	343	14	-	156	156	1,2

NOTES:
1. NEW YORK STATE MECHANICAL CODE.
2. NATURAL VENTILATION OF AN OCCUPIED SPACE SHALL BE THROUGH WINDOWS, DOORS, LOUVERS, AND OTHER OPENINGS TO THE OUTDOORS. THE MINIMUM OPENABLE AREA TO THE OUTDOORS SHALL BE 4 PERCENT OF THE FLOOR AREA BEING VENTILATED.

TABLE 1: ENERGY CODE ANALYSIS TABLE FOR MECHANICAL SYSTEMS

(PER 2020 NYS ENERGY CODE)

ITEM DESCRIPTION			PROPOSED VALUE	MINIMUM EFFECIENCY	CODE PRECRIBED VALUE AND CITATION	CITATION	SUPPORTING DOCUMENTATION
	UNIT TAG	EQUIPMENT TYPE					
HVAC EQUIPMENT PERFORMANCE	RTU-1	SINGLE PACKAGED UNIT	SEER= 12.6	SEER=11.2	MINIMUM EFFICIENCY REQUIREMENTS: ELECTRICALLY OPERATED UNITARY AIR CONDITIONERS AND CONDENSING UNITS > 65,000 Btu/H < 135,000 Btu/h	C403.2.3(1)	MECHANICAL SCHEDULES
HVAC EQUIPMENT PERFORMANCE	AC-1,AC-2, CU-1	SPLIT SYSTEM HEAT PUMP	HSPF = 11.2 SEER= 15.0	HSPF = 8.2 SEER= 14.0	MINIMUM EFFICIENCY REQUIREMENTS: ELECTRICALLY OPERATED UNITARY AIR CONDITIONERS AND CONDENSING UNITS < 65,000 Btu/h	C403.2.3(1)	MECHANICAL SCHEDULES
HVAC SYSTEM CONTROLS	ALL HEATING COOLING EQUIPMENT	THERMOSTATIC CONTROLS	DIGITAL THERMOSTATS	-	THERMOSTATIC CONTROLS FOR HVAC SYSTEM	C403.2.6	MECHANICAL SCHEDULES AND PLANS
SHUTOFF DAMPERS			GRAVITY/BACKDRAFT DAMPERS PROVIDED IN LIEU OF MOTORIZED DAMPER MOTORIZED DAMPERS PER EXCEPTIONS 1	-	BACKDRAFT DAMPER INSTALLED AT EXHAUST OPENINGS	C403.7.7	MECHANICAL SCHEDULES AND PLANS
DUCT LEAKAGE			SMACNA HVAC DUCT LEAKAGE TEST	-	SMACNA HVAC DUCT LEAKAGE TEST	PER C403	MECHANICAL DWGS. & SPECS

TABLE 2: ENERGY CODE COMPLIANCE INSPECTIONS FOR MECHANICAL SYSTEMS

(IIB - MECHANICAL AND SERVICE WATER HEATING INSPECTIONS)

	INSPECTION TEST	FREQUENCY	REFERENCE STANDARDS	INSPECTION DESCRIPTION	ECC CITATION
IIB2	SHUT-OFF DAMPERS	AS REQUIRED DURING INSTALLATION	APPROVED CONSTRUCTION DOCUMENTS	DAMPERS FOR STAIR AND ELEVATOR SHAFT VENTS AND OTHER OUTDOOR AIR INTAKES AND EXHAUST OPENINGS INTEGRAL TO THE BUILDING ENVELOPE SHALL BE VISUALLY INSPECTED TO VERIFY THAT SUCH DAMPERS, EXCEPT WHERE PERMITTED TO BE GRAVITY DAMPERS, COMPLY WITH APPROVED CONSTRUCTION DRAWINGS. MANUFACTURER'S LITERATURE SHALL BE REVIEWED TO VERIFY THAT THE PRODUCT HAS BEEN TESTED AND FOUND TO MEET THE STANDARD.	NYSECC C403.2.4.4, C403.7.7, OR ASHRAE 90.1-6.4.3.4
IIB3	HVAC AND SERVICE WATER HEATING EQUIPMENT	PRIOR TO FINAL MECHANICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	EQUIPMENT SIZING, EFFICIENCIES AND OTHER PERFORMANCE FACTORS OF ALL MAJOR EQUIPMENT UNITS, AS DETERMINED BY THE APPLICANT OF RECORD, AND NO LESS THAN 15% OF MINOR EQUIPMENT UNITS, SHALL BE VERIFIED BY VISUAL INSPECTION AND, WHERE NECESSARY, REVIEW OF MANUFACTURER'S DATA. POOL HEATERS AND COVERS SHALL BE VERIFIED BY VISUAL INSPECTION	NYSECC C403.2, C404.2, C404.7, C406.2
IIB4	HVAC AND SERVICE WATER HEATING SYSTEM CONTROLS	AFTER INSTALLATION AND PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION, EXCEPT THAT FOR CONTROLS WITH SEASONALLY DEPENDENT FUNCTIONALITY, SUCH TESTING SHALL BE PERFORMED BEFORE SIGN-OFF FOR ISSUANCE OF A FINAL CERTIFICATE OF OCCUPANCY	APPROVED CONSTRUCTION DOCUMENTS INCLUDING CONTROL SYSTEM NARRATIVES	NO LESS THAN 20% OF EACH TYPE OF REQUIRED CONTROLS AND ECONOMIZERS SHALL BE VERIFIED BY VISUAL INSPECTION AND TESTED FOR FUNCTIONALITY AND PROPER OPERATION. SUCH CONTROLS SHALL INCLUDE, BUT ARE NOT LIMITED TO, THERMOSTATIC AND ECONOMIZER CONTROLS	NYSECC C403.2.4, C403.2.5.1, C403.2.11, C403.3, C403.4, C404.3, C404.6, C404.7
IIB6	HVAC DUCT LEAKAGE TESTING	PRIOR TO CLOSING CEILINGS AND WALLS AND PRIOR TO FINAL CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS; NYC MECHANICAL CODE	WHERE THE AIR HANDLER AND/OR SOME DUCTWORK IS IN UNCONDITIONED SPACE, DUCT-LEAKAGE TESTING SHALL BE PERFORMED EITHER AFTER ROUGH-IN OR POST-CONSTRUCTION TO ENSURE COMPLIANCE WITH ECC R403.3.3 AND R403.3.4. NOT LESS THAN 20% OF SUCH DUCTWORK SHALL BE TESTED	NYSECC C403

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CONSULTANT SEAL
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REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION
☐ AS BUILT – CHANGES AS NOTED ☐ AS BUILT – NO CHANGES

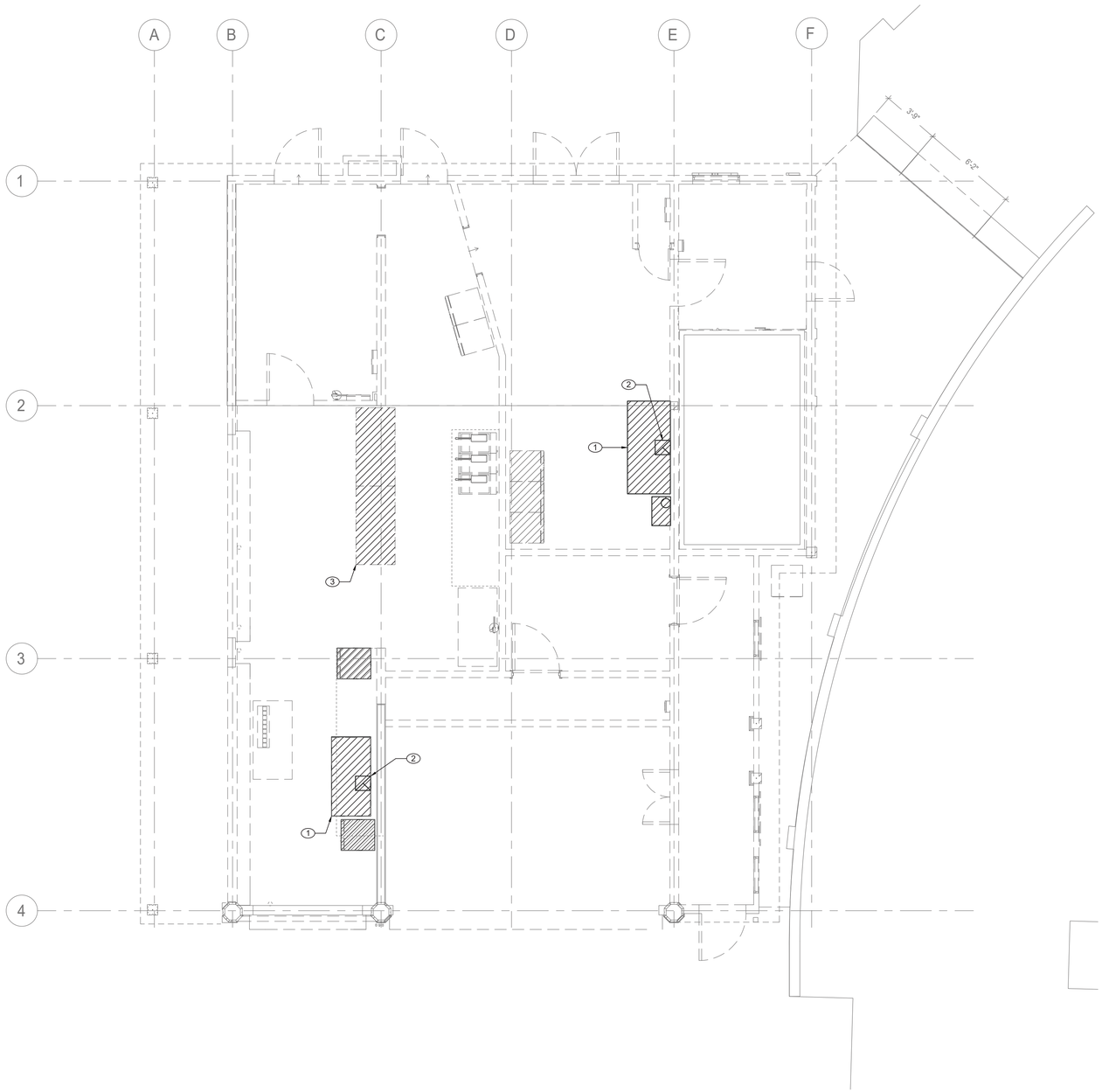
CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

INFRASTRUCTURE REHABILITATION - PHASE 3
PLAYLAND PARK, RYE, NEW YORK
RESTAURANT KITCHEN WITH FOOD VENDING
MECHANICAL NOTES, SYMBOLS AND LEGENDS

CONTRACT NUMBER 22-523
SHEET NUMBER K-M-01
DWG NO.: 549 of 664
SCALE: AS INDICATED
DATE: 08/23/2022
DPW FILE NUMBER 1-118-M-1298-0
REV. NO. 0



1 MECHANICAL FIRST FLOOR DEMOLITION PLAN

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

GENERAL NOTES:

1. RETURN REMOVED EXISTING EQUIPMENT TO OWNER IF IT IS IN WORKING CONDITION.
2. CONTRACTOR TO COORDINATE WITH FACILITY WHEN WORKING AROUND OR ABOVE THE RIDE COMPONENTS, AND PROVIDE ALL NECESSARY MEASURES TO PROTECT THESE COMPONENTS PER THE REQUIREMENTS OF THE FACILITY.

MECHANICAL DEMOLITION NOTES:

(1) REMOVE EXISTING RANGE HOOD AND ASSOCIATED DUCTWORK AND PIPING. DEMOLISH EXISTING ANSUL FIRE PROTECTION SYSTEM AND ASSOCIATED CONTROLS. COORDINATE REMOVAL OF ANSUL SYSTEM WITH FIRE PROTECTION CONTRACTOR AND OWNER.

(2) REMOVE EXISTING FLUE VENT FOR OVEN. COORDINATE WITH GC TO SEAL EXISTING WALL PENETRATION. PROVIDE FIRE STOPPING TO MATCH EXISTING.

(3) REMOVE EXISTING CEILING VENTILATION GRILLES.

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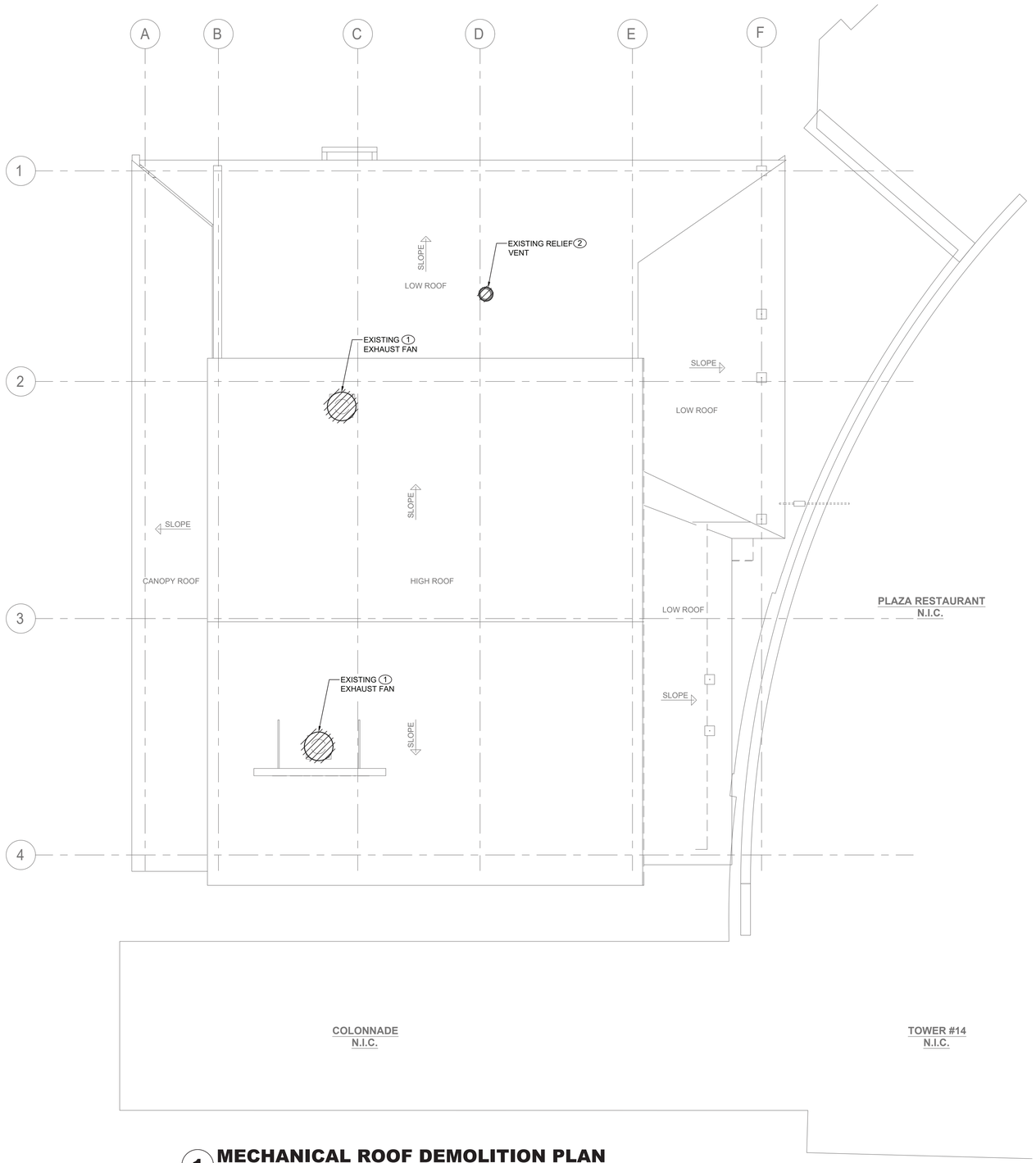
TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

INFRASTRUCTURE REHABILITATION - PHASE 3
PLAYLAND PARK, RYE, NEW YORK
RESTAURANT KITCHEN WITH FOOD VENDING
MECHANICAL FIRST FLOOR DEMOLITION PLAN

CONTRACT NUMBER	SHEET NUMBER
22-523	K-M-11
DWG NO.: 550 of 664	
SCALE: AS INDICATED	
DATE: 08/23/2022	
DPW FILE NUMBER: 1-118-M-1299-0	REV. NO.: 0



1 MECHANICAL ROOF DEMOLITION PLAN

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

GENERAL NOTES:

1. RETURN REMOVED EXISTING EQUIPMENT TO OWNER IF IT IS IN WORKING CONDITION.
2. CONTRACTOR TO COORDINATE WITH FACILITY WHEN WORKING AROUND OR ABOVE THE RIDE COMPONENTS, AND PROVIDE ALL NECESSARY MEASURES TO PROTECT THESE COMPONENTS PER THE REQUIREMENTS OF THE FACILITY.

MECHANICAL DEMOLITION NOTES:

(1) DEMOLISH EXISTING EXHAUST FAN AND ASSOCIATED CONTROLS, DUCTWORK AND ACCESSORIES. COORDINATE REMOVAL OF ELECTRICAL POWER AND WIRING WITH ELECTRICAL CONTRACTOR. CONTRACTOR SHALL PATCH EXISTING ROOF PENETRATION TO MATCH EXISTING ROOF.

(2) DEMOLISH EXISTING RELIEF VENT. CONTRACTOR SHALL PATCH EXISTING ROOF PENETRATION TO MATCH EXISTING ROOF.

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REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

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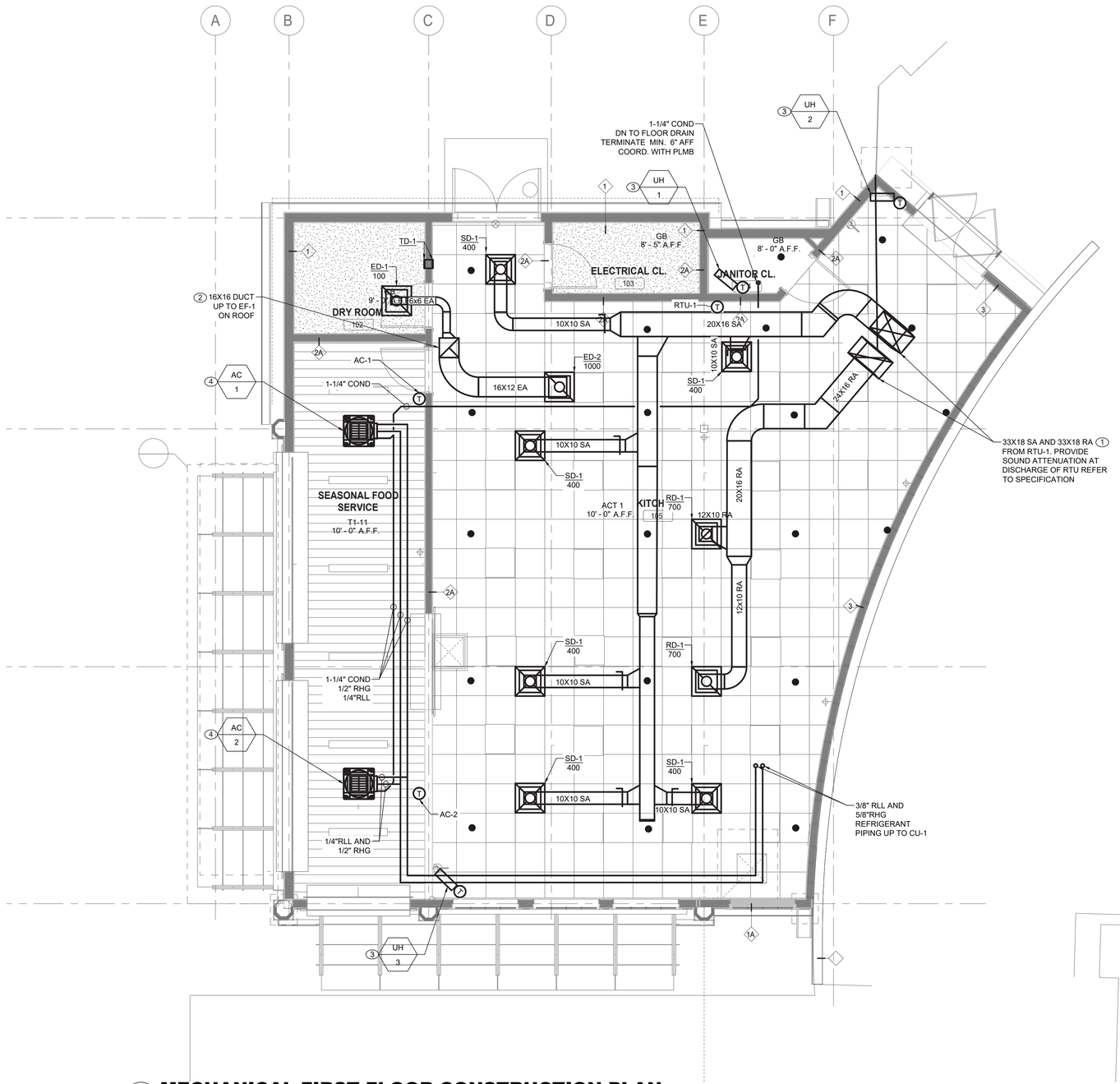
CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

INFRASTRUCTURE REHABILITATION - PHASE 3
PLAYLAND PARK, RYE, NEW YORK
RESTAURANT KITCHEN WITH FOOD VENDING
MECHANICAL ROOF DEMOLITION PLAN

CONTRACT NUMBER	SHEET NUMBER
22-523	K-M-12
DWG NO.: 551 of 664	
SCALE: AS INDICATED	
DATE: 08/23/2022	
DPW FILE NUMBER: 1-118-M-1300-0	REV. NO.: 0



1 MECHANICAL FIRST FLOOR CONSTRUCTION PLAN

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

GENERAL NOTES:

1. CONTRACTOR TO COORDINATE WITH FACILITY WHEN WORKING AROUND OR ABOVE THE RIDE COMPONENTS, AND PROVIDE ALL NECESSARY MEASURES TO PROTECT THESE COMPONENTS PER THE REQUIREMENTS OF THE FACILITY.
2. UPON COMPLETION, SYSTEM SHALL BE TESTED FOR PROPER OPERATION.

MECHANICAL CONSTRUCTION NOTES:

(1) PROVIDE SUPPLY AND RETURN DUCTWORK FROM ROOFTOP UNIT RTU-1 AND ROUTE ALONG INDICATED PATH. PROVIDE INSULATION TO ALL SUPPLY DUCTWORK. PROVIDE VOLUME DAMPERS AND SUPPLY DIFFUSERS/GRILLES AND BALANCE TO INDICATED VALUES.

(2) PROVIDE EXHAUST DUCTWORK FROM KITCHEN UP TO ROOFTOP EXHAUST FAN AS INDICATED.

(3) PROVIDE NEW WALL MOUNTED ELECTRIC UNIT HEATER. COORDINATE INSTALL HEIGHT IN FIELD.

(4) PROVIDE NEW CEILING MOUNTED INDOOR UNITS AC-1 AND AC-2 AS SHOWN. COORDINATE ELECTRICAL POWER AND WIRING WITH ELECTRICAL DRAWINGS.

CONSULTANT INFORMATION

LiRo Engineers, Inc.
A LiRo Group Company
Syosset, N.Y. 516-214-8157[T]

CONSULTANT SEAL

STATE OF NEW YORK · FRANK F. ULRICH · No. 090111 · LICENSED PROFESSIONAL ENGINEER

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

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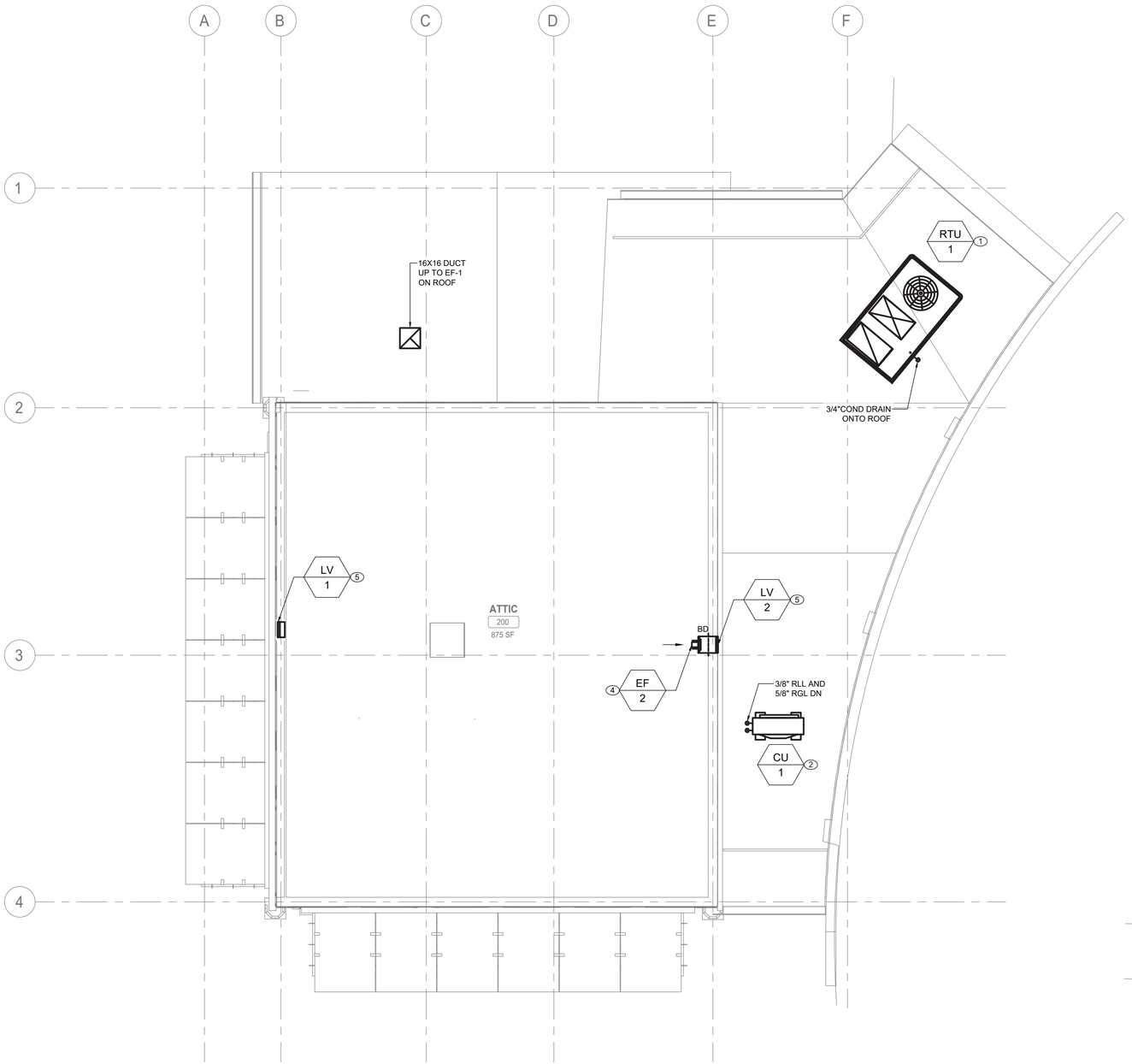
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

INFRASTRUCTURE REHABILITATION - PHASE 3
PLAYLAND PARK, RYE, NEW YORK
RESTAURANT KITCHEN WITH FOOD VENDING
MECHANICAL FIRST FLOOR CONSTRUCTION PLAN

CONTRACT NUMBER	22-523
SHEET NUMBER	K-M-21
DWG NO.:	
SCALE:	AS INDICATED
DATE:	08/23/2022
DPW FILE NUMBER	1-118-M-1301-0
REV. NO.	0



1 MECHANICAL ATTIC FLOOR CONSTRUCTION PLAN

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

GENERAL NOTES:

1. CONTRACTOR TO COORDINATE WITH FACILITY WHEN WORKING AROUND OR ABOVE THE RIDE COMPONENTS, AND PROVIDE ALL NECESSARY MEASURES TO PROTECT THESE COMPONENTS PER THE REQUIREMENTS OF THE FACILITY.
2. UPON COMPLETION, SYSTEM SHALL BE TESTED FOR PROPER OPERATION.

MECHANICAL CONSTRUCTION NOTES:

(1) PROVIDE SUPPLY AND RETURN DUCTWORK FROM ROOFTOP UNIT RTU-1 AND ROUTE ALONG INDICATED PATH. PROVIDE INSULATION TO ALL SUPPLY DUCTWORK. PROVIDE VOLUME DAMPERS AND SUPPLY DIFFUSERS/GRILLES AND BALANCE TO INDICATED VALUES. PLACE UNIT ON NEW ROOF CURB AS SHOWN ON K-M-82.

(2) PROVIDE NEW OUTDOOR SPLIT CONDENSER AIR CONDITIONER UNIT ON ROOF AS SHOWN. COORDINATE ELECTRICAL POWER AND WIRING WITH ELECTRICAL DRAWINGS. PLACE UNIT ON EQUIPMENT RAILS AS SHOWN ON K-M-81

(3) PROVIDE NEW PACKAGED TERMINAL AIR CONDITIONER UNIT. COORDINATE ELECTRICAL POWER AND WIRING WITH ELECTRICAL DRAWINGS.

(4) PROVIDE NEW EXHAUST FAN AS SCHEDULED. COORDINATE ELECTRICAL POWER AND WIRING WITH ELECTRICAL CONTRACTOR. INSTALL EF-2 AT 6'0" ABOVE ATTIC FLOOR TO CENTER.

(5) PROVIDE NEW RAIN RESISTANT LOUVERS AS SCHEDULED. INSTALL LV-1 AND LV-2 AT 6'0" ABOVE ATTIC FLOOR TO CENTER.

CONSULTANT INFORMATION

LiRo Engineers, Inc.
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Syosset, N.Y. 516-214-8157[T]

CONSULTANT SEAL

STATE OF NEW YORK · FRANK F. ULISSE · No. 090111-1 · LICENSED PROFESSIONAL ENGINEER

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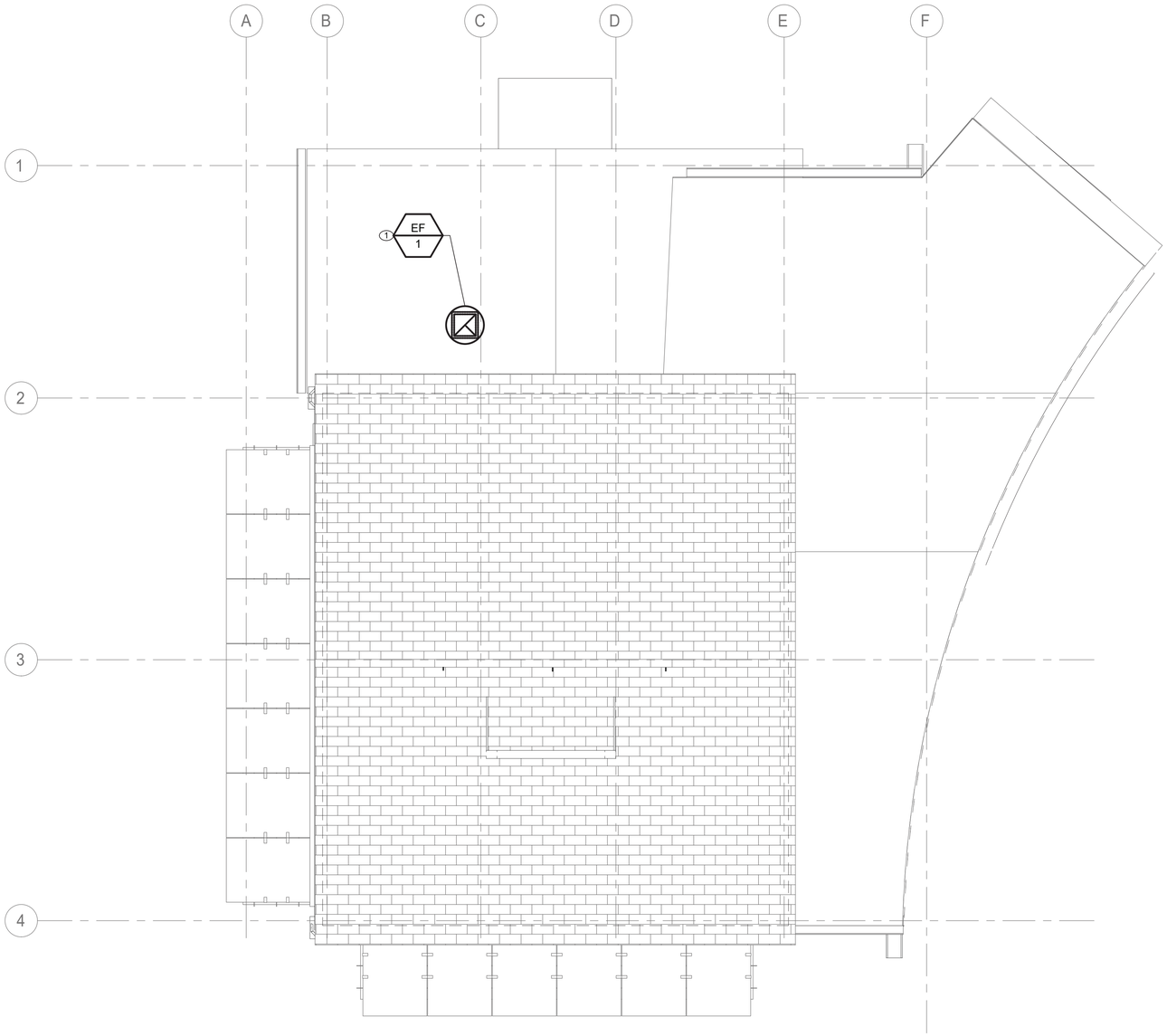
WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

INFRASTRUCTURE REHABILITATION - PHASE 3
PLAYLAND PARK, RYE, NEW YORK
RESTAURANT KITCHEN WITH FOOD VENDING
MECHANICAL ATTIC FLOOR CONSTRUCTION PLAN

CONTRACT NUMBER	22-523
SHEET NUMBER	K-M-22
DWG NO.:	553 of 664
SCALE:	AS INDICATED
DATE:	08/23/2022
DPW FILE NUMBER	1-118-M-1302-0
REV. NO.	0



GENERAL NOTES:

1. CONTRACTOR TO COORDINATE WITH FACILITY WHEN WORKING AROUND OR ABOVE THE RIDE COMPONENTS, AND PROVIDE ALL NECESSARY MEASURES TO PROTECT THESE COMPONENTS PER THE REQUIREMENTS OF THE FACILITY.
2. UPON COMPLETION, SYSTEM SHALL BE TESTED FOR PROPER OPERATION.

MECHANICAL CONSTRUCTION NOTES:

(1) PROVIDE NEW EXHAUST FAN AS SCHEDULED. COORDINATE ELECTRICAL POWER AND WIRING WITH ELECTRICAL DRAWINGS. ENSURE ALL WORK IMPACTING ROOF IS DONE IN ACCORDANCE WITH ROOFING MANUFACTURER WARRANTY.

1 MECHANICAL ROOF CONSTRUCTION PLAN

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

CONSULTANT INFORMATION

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CONSULTANT SEAL

STATE OF NEW YORK · FRANK F. ULISSE · No. 090111 · LICENSED PROFESSIONAL ENGINEER

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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

INFRASTRUCTURE REHABILITATION - PHASE 3
PLAYLAND PARK, RYE, NEW YORK
RESTAURANT KITCHEN WITH FOOD VENDING
MECHANICAL ROOF CONSTRUCTION PLAN

CONTRACT NUMBER	22-523
SHEET NUMBER	K-M-23
DWG NO.:	
SCALE:	AS INDICATED
DATE:	08/23/2022
DPW FILE NUMBER	1-118-M-1303-0
REV. NO.	0

ROOFTOP AIR CONDITIONING UNIT SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	NOM. CAP. (TONS)	MIN. OA (CFM)	MAX. OA (CFM)	SUPPLY FAN			FILTER		DX COOLING							HEATING		COMPRESSOR	CONDENSER			EER	ELECTRICAL			OPERATING WEIGHT (±LBS)	DIMENSIONS LxWxH (FT)	NOTES
							AIR FLOW (CFM)	ESP (IN)	MOTOR BHP	TYPE	MERV	REFRIG TYPE	TOTAL CAP. (MBH)	SENSIBLE CAP. (MBH)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	ELEC. KW	TOTAL CAP. (MBH)	TYPE/QTY	AMB. TEMP (°F)	FAN QTY	Kw		MCA	MOCP	V-PH-HZ			
RTU-1	TRANE	THC092F3RNA	ROOF	7.5	1100	-	2400	0.50	0.55	2" PLEATED	13	R-410A	87.5	70.4	80.2	64.3	54.4	52.1	36.0	122.9	SCROLL/2	89	1	0.72	12.60	104	110	208-3-60	1228	7.4X4.4X3.9	1,2,3,4

NOTES:
1. PROVIDE DOWNFLOW SUPPLY AND RETURN UNIT CONFIGURATION, OVERSIZE SUPPLY FAN MOTOR, MOTORIZED OUTSIDE AIR DAMPER, NON-FUSED DISCONNECT, ECONOMIZER, ECONOMIZER HOOD, BAROMETRIC RELIEF HOOD AND 14" ROOF CURB.
2. FACTORY CONTROLS TO BE PROVIDED BY MANUFACTURER.
3. PROVIDE WITH MERV 13 FILTERS AND OPTION FOR UV LIGHT FILTRATION KIT.
4. PROVIDE DIGITAL CONTROLLER WITH DISPLAY CAPABLE OF DEMAND CONTROL VENTILATION AND ECONOMIZER MODE. CONTRACTOR TO PROVIDE TRANSFORMER AND POWER AS REQUIRED.

DUCTLESS SPLIT SYSTEM HEAT PUMP SCHEDULE

UNIT TAG (INDOOR)	ASSOCIATED OUTDOOR UNIT	MANUFACTURER	MODEL	LOCATION/SERVICE	REFRIGERANT	SUPPLY FAN	COOLING		HEATING		ELECTRICAL			WEIGHT	NOTES
						CFM	TOTAL/SENS. (MBH)	EAT DB/WB	MBH	EAT/LAT DB	V.-PH.-CY.	MCA	MOCP		
AC-1	CU-1	MITSUBISHI	PLFY-P18NFMU-E	SEASONAL FOOD SERVICE	R410A	460	18.0/18.0	81/66	20.0	68/90	208-1-60	0.50	15	31.3	1,2,3,4
AC-2	CU-1	MITSUBISHI	PLFY-P18NFMU-E	SEASONAL FOOD SERVICE	R410A	460	18.0/18.0	81/66	20.0	68/90	208-1-60	0.50	15	31.3	1,2,3,4

NOTES:
1. UNIT CAPACITY INDICATED AS SIZING CRITERIA.
2. PROVIDE UNIT WITH WIRED WALL MOUNTED THERMOSTAT.
3. PROVIDE ALL INDOOR UNIT WITH INTREGATED CONDENSATE PUMP
4. INSTALL AND SIZE REFRIGERANT PIPING PER MANUFACTURER'S SPECIFICATION.

DUCTLESS SPLIT SYSTEM HEAT PUMP CONDENSING UNIT SCHEDULE

UNIT TAG (OUTDOOR)	MANUFACTURER	MODEL	NOMINAL COOLING (BTU/HR)	NOMINAL HEATING (BTU/HR)	SERVICE	SEER	COP	V.-PH.-CY.	MCA	MOCP	WEIGHT	NOTES
CU-1	MITSUBISHI	PUMY-P36NKMU3-BS	36000	42000	SEASONAL FOOD SERVICE	22.3	4	208-1-60	29.0	44.0	271.0	1,2

NOTES:
1. UNIT CAPACITY INDICATED AS SIZING CRITERIA.
2. PROVIDE UNIT WITH 16" ROOF STAND.

FAN SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	SERVICE	TYPE	DRIVE	AIR FLOW (CFM)	TSP (IN. WG)	ELECTRICAL				OPERATING WEIGHT (±LBS)	DIMENSIONS DxH (IN)	NOTES
									HP	BHP	RPM	V-PH-HZ			
EF-1	GREENHECK	G-130-VG	ROOF	KITCHEN / TRASH RM	CENTRIFUGAL	DIRECT	1100	0.25	0.25	0.09	906	115-1-60	24	19x19	1,2,3,4,5
EF-2	GREENHECK	SE1-8-440-VG	ATTIC	ATTIC	AXIAL	DIRECT	50	0.05	0.07	0.00	638	115-1-60	16	13X13	1,2,3,4,6

NOTES:
1. PROVIDE ALL CONTACTS, RELAYS, AND DEVICES NECESSARY FOR BMS CONTROL OF FANS PER SEQUENCE OF OPERATIONS.
2. PROVIDE THERMAL OVERLOAD FOR ALL SINGLE PHASE MOTORS.
3. PROVIDE SALT WATER RESISTANT HI-PRO POLYESTER COATING FOR ALL FANS.
4. FAN SHALL BE FURNISHED WITH NON FUSED DISCONNECT.
5. PROVIDE 12" ROOF CURBS FOR ALL ROOF MOUNTED FANS. INCLUDE 1.5" INSULATION ON CURB.
6. PROVIDE WALL HOUSING.

ELECTRIC UNIT HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	SERVICE	TYPE	KW	AMPS	V-PH-HZ	NOTES
UH-1	TRANE	UHEC-031A0C0	WATER SERVICES RM	WALL HUNG	3.3	15.9	208-1-60	1
UH-2	TRANE	UHEC051AACA	KITCHEN	WALL HUNG	5	24.1	208-1-60	1
UH-3	TRANE	UHEC051AACA	KITCHEN	WALL HUNG	5	24.1	208-1-60	1

NOTES:
1. PROVIDE UNIT MOUNTED 2 STAGE THERMOSTAT.

LOUVER SCHEDULE

TAG	MANUFACTURER	MODEL	SERVICE	LOCATION	MATERIAL	FINISH TYPE	WIDTH (INCH)	HEIGHT (INCH)	FREE AIR VELOCITY (FPM)	PRESSURE DROP (IN. WG)	MINIMUM FREE AREA (SQUARE FEET)	NOTES
LV-1	GREENHECK	ESD-635	EXHAUST	ATTIC	ALUMINUM	BAKED ENAMEL	12	12	-	-	0.19	2
LV-2	GREENHECK	ESD-635	EXHAUST	ATTIC	ALUMINUM	BAKED ENAMEL	12	12	263	0.05	0.19	1

NOTES:
1. PROVIDE WITH ALUMINUM BIRD SCREEN AND BACKDRAFT DAMPERS.
2. PROVIDE WITH ALUMINUM BIRD SCREEN ONLY.

AIR INLET / OUTLET SCHEDULE

TAG	MANUFACTURER	MODEL	SERVICE	NECK SIZE (IN)	FACE SIZE (IN)	MOUNTING	CFM	MAX PD (wg)	MAX VELOCITY	MAX NC	NOTES
SD-1	TITUS	TMS	GENERAL SUPPLY	12	24x24	LAY-IN / GYP	321-425	0.10	600	30	1, 2, 3
RD-1	TITUS	50F	GENERAL RETURN	14X14	24x24	LAY-IN / GYP	528-732	0.05	600	30	1, 3
ED-1	TITUS	50F	GENERAL EXHAUST	6X6	24x24	LAY-IN / GYP	0-95	0.05	600	30	1, 3
ED-2	TITUS	50F	GENERAL EXHAUST	16X16	24X24	LAY-IN / GYP	732-972	0.50	600	30	1, 3
TG-1	TITUS	SG-LFF	TRANSFER	-	6X6	WALL MOUNTED	70	0.03	400	-	1

NOTES:
1. COORDINATE AND CONFIRM CEILING AND/OR WALL MOUNT (T-BAR, SURFACE, REINFORCEMENT, ETC) WITH ARCHITECTURAL RCP AND WALL CONSTRUCTION BEFORE ORDERING.
2. PROVIDE WITH MOLDED INSULATION BLANKET.
3. INTEGRAL VOLUME DAMPERS NOT ACCEPTABLE. VOLUME DAMPERS PROVIDED BY MECHANICAL CONTRACTOR ON ALL RUN-OUTS. EXCEPTIONS REQUIRE APPROVAL WHEN REQUIRED.

CONSULTANT INFORMATION
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CONSULTANT SEAL
STATE OF NEW YORK FRANK F. ULISSE No. 090111 LICENSED PROFESSIONAL ENGINEER

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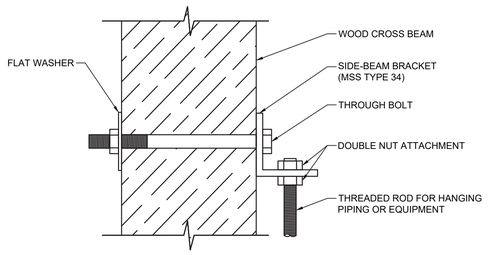
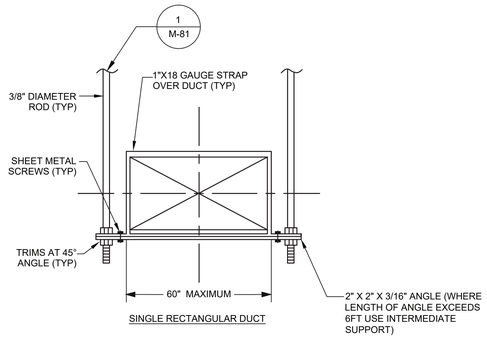
INFRASTRUCTURE REHABILITATION - PHASE 3
PLAYLAND PARK, RYE, NEW YORK
RESTAURANT KITCHEN WITH FOOD VENDING
MECHANICAL SCHEDULES

CONTRACT NUMBER	22-523
SHEET NUMBER	K-M-61
DWG NO.:	555 of 664
SCALE:	AS INDICATED
DATE:	08/23/2022
DPW FILE NUMBER	1-118-M-1304-0
REV. NO.	0



1 M-81 **MECHANICAL ANCHORING DETAIL**
SCALE: NOT TO SCALE



2 M-81 **MECHANICAL DUCT HANGER DETAIL**
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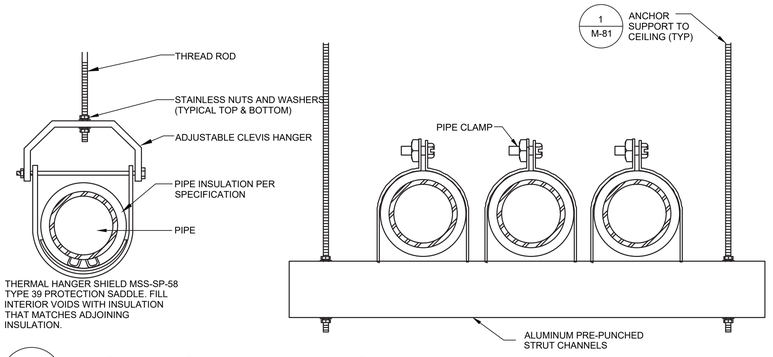

3 M-81 **MECHANICAL PIPE HANGER DETAIL**
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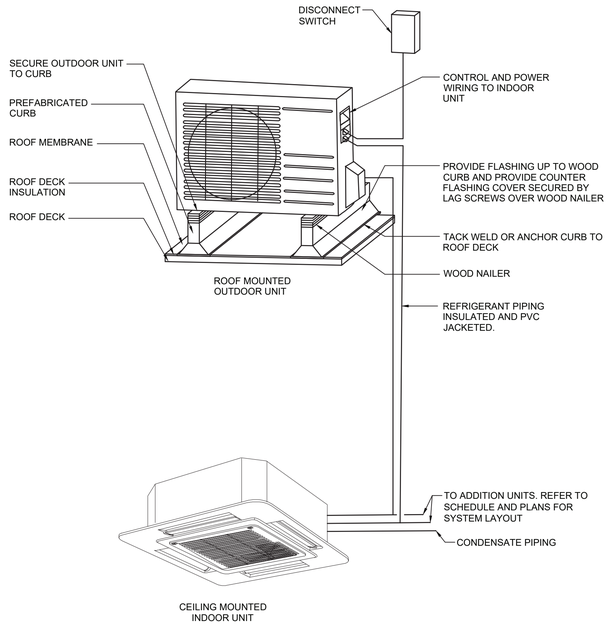

4 M-81 **MECHANICAL SPLIT PIPING DETAIL**
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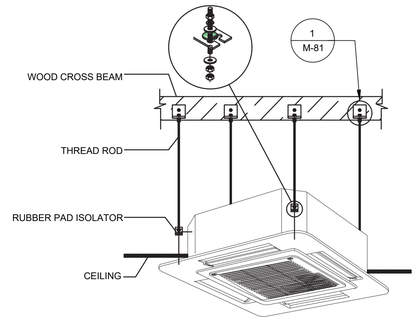

5 M-81 **SPLIT CEILING CASSETTE MOUNTING DETAIL**
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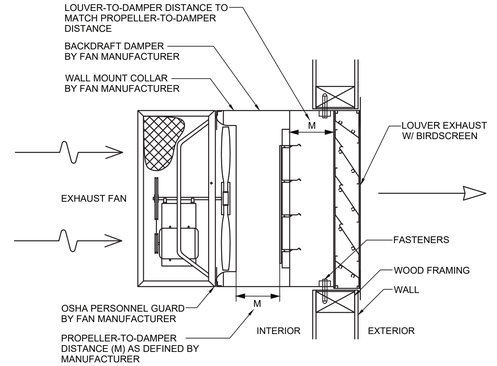
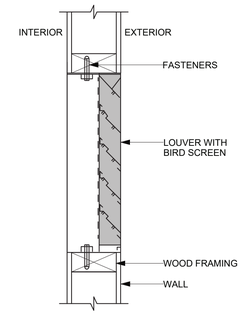
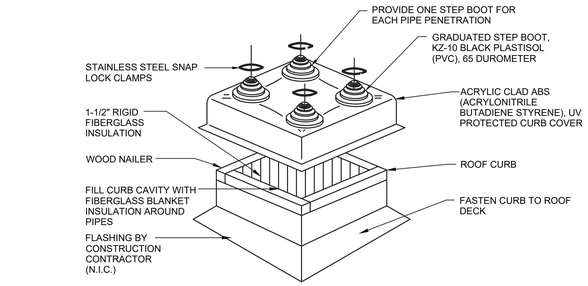


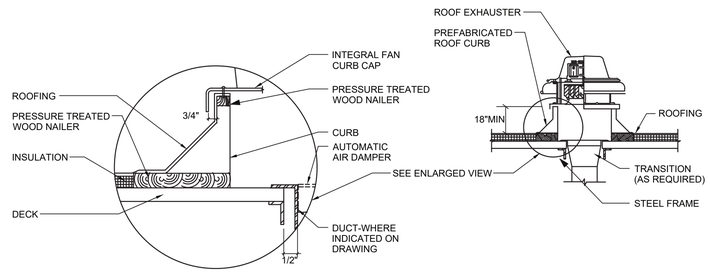
6 M-81 **PROPELLER FAN DETAIL**
SCALE: NOT TO SCALE



7 M-81 **MECHANICAL LOUVER**
SCALE: NOT TO SCALE



8 M-81 **MECHANICAL REFRIG. PENETRATION DETAIL**
SCALE: NOT TO SCALE



NOTES:
1. BACKDRAFT DAMPER SHALL BE FULL SIZE OF OPENING IN ROOF DECK.

9 M-81 **MECHANICAL ROOF FAN DETAIL**
SCALE: NOT TO SCALE

CONSULTANT INFORMATION
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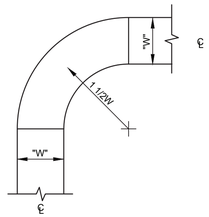
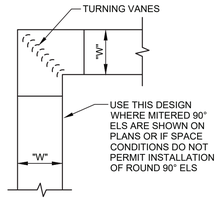
INFRASTRUCTURE REHABILITATION - PHASE 3
PLAYLAND PARK, RYE, NEW YORK
RESTAURANT KITCHEN WITH FOOD VENDING
MECHANICAL DETAILS 1 OF 2

CONTRACT NUMBER	SHEET NUMBER
22-523	**K-M-81**
DWG NO.:	556 of 664
SCALE:	**AS INDICATED**
DATE:	08/23/2022
DPW FILE NUMBER	1-118-M-1305-0
REV. NO.	0

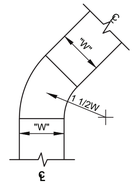


ROUND 90° **ELBOW**

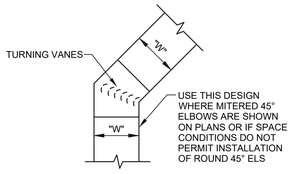


MITERED 90° **ELBOW**

CONSTRUCTION OF 90° **ELBOWS**

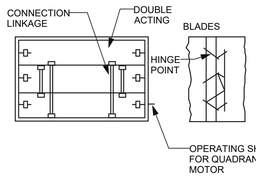


ROUND 45° **ELBOW**

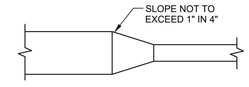


MITERED 45° ELBOW

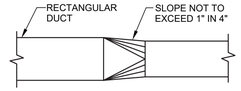
CONSTRUCTION OF 45° ELBOWS



TYPICAL VOLUME DAMPER



TYPICAL RECTANGULAR TRANSITION



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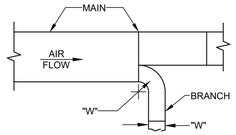
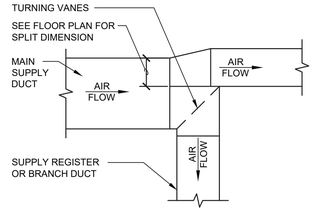
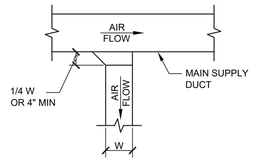


ROUND BRANCH TAKEOFF



SQUARE BRANCH TAKEOFF



BRANCH DUCT TAKEOFF

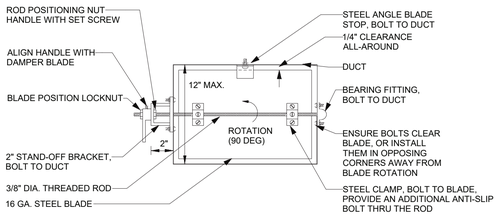
CONSTRUCTION OF TAKEOFFS

INSTALLATION NOTES:

1. ALL DUCT TRANSITIONS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.
2. ALL DUCTS SHALL BE CONSTRUCTED AND ERECTED IN A NEAT AND WORKABLE MANNER.
3. DUCTS SHALL BE CONSTRUCTED OF THE WEIGHTS, GAUGES AND MATERIAL SPECIFIED.
4. THE DIMENSION SHOWN FOR ALL DUCTS SHOWN IN PLAN GIVE THE WIDTH FIRST AND THEN THE HEIGHT.
5. DUCT RISERS SHOULD BE SUPPORTED BY ANGLES AT EVERY FLOOR.
6. AIR TURN SHALL BE INSTALLED IN ALL ABRUPT ELBOWS TO PREVENT TURBULENCE.
7. DUCTS SHALL BE SECURELY ATTACHED TO THE BUILDING CONSTRUCTION IN AN APPROVED MANNER.
8. DIVERGING TRANSITION PIECES SHALL BE MADE AS GRADUAL AS POSSIBLE.
9. INSTALL FIRE DAMPERS IN ACCORDANCE WITH UL 555.
10. ACCESS PANELS SHOULD BE PLACED BEFORE AND/OR AFTER EQUIPMENT INSTALLED IN THE DUCT.
11. DUCT AREA SHOULD NOT BE DECREASED MORE THAN 10 PERCENT WHEN OBSTRUCTIONS CANNOT BE AVOIDED, AND THEN A STREAMLINED FITTING SHOULD BE USED.
12. FLEXIBLE FABRIC CONNECTIONS (OR EQUAL) SHOULD BE USED ON BOTH INLETS AND OUTLETS OF ALL FANS AND AIR HANDLING UNIT.
13. JOINTS AND SEAMS OF SUPPLY DUCTS SHALL BE FASTENED SECURELY AND MADE AIR TIGHT.
14. VANES SHORTER THAN 36" SHALL BE SINGLE WALL, WITH A 2" RADIUS AND 1 1/2" SPACING. VANES LARGER THAN 36" AND SHORTER THAN 48" SHALL BE DOUBLE WALL, WITH A 2" OUTER RADIUS, 1" INNER RADIUS, AND 2 1/8" SPACING. VANES LONGER THAN 48" SHALL BE DOUBLE WALL, WITH A 4 1/2" OUTER RADIUS, 2 1/4" INNER RADIUS, AND 3 1/4" SPACING. NO TURNING VANES SHALL INCLUDE A TRAILING EDGE.

1 M-82 MECHANICAL DUCT CONSTRUCTION DETAIL

SCALE: NOT TO SCALE

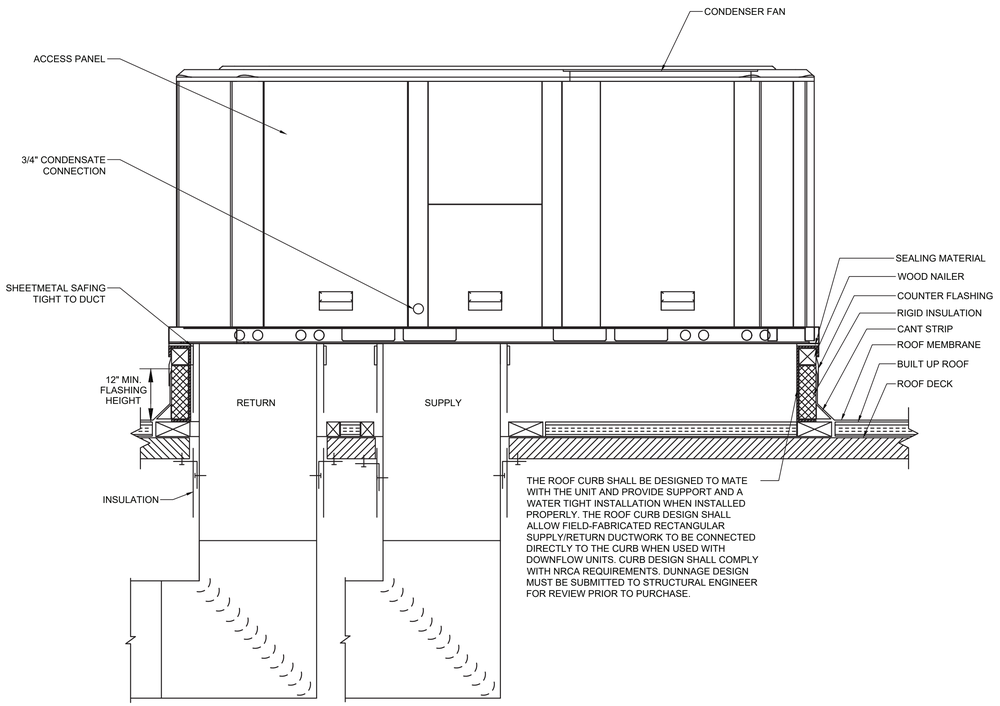


NOTES:

1. DAMPERS FOR ROUND DUCTS SHALL BE SIMILAR TO THE DAMPER SHOWN ABOVE.
2. ENSURE THAT FULL 90 DAMPER BLADE MOVEMENT IS UNOBSTRUCTED.
3. FOR DUCT HEIGHTS MORE THAN 12", PROVIDE FACTORY-FABRICATED OPPOSED BLADE DAMPERS.

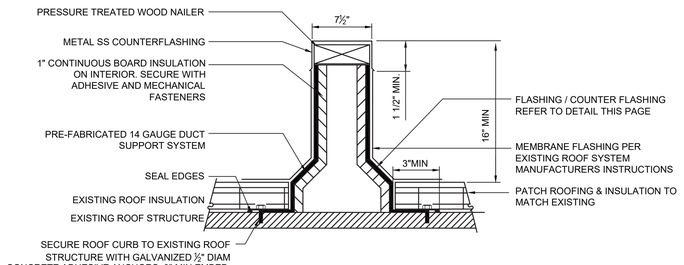
3 M-82 MECHANICAL VOLUME DAMPER DETAIL

SCALE: NOT TO SCALE



2 M-82 ROOF TOP UNIT (RTU) DETAIL

SCALE: NOT TO SCALE

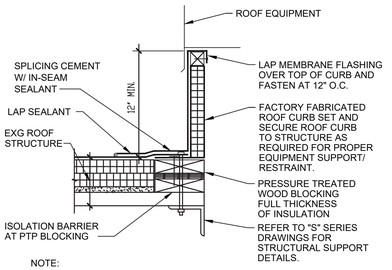


NOTE:

1. ALL EXPOSED METAL OR WELDS SUSCEPTIBLE TO RUSTING TO BE PAINTED WITH COLD GALVANIZED COATING
2. CONTRACTOR TO INSTALL MEMBRANE FLASHING PER EXISTING ROOFING SYSTEM MANUFACTURER'S INSTRUCTIONS AND TO MEET ANY EXISTING ROOF WARRANTY REQUIREMENTS.
3. CONTRACTOR TO VERIFY IN THE FIELD ALL EXISTING ROOF CONDITIONS AND DIMENSIONS PRIOR TO STARTING WORK.
4. MAINTAIN ROOF IN WEATHER TIGHT CONDITION DURING ENTIRE PROJECT.
5. CONTRACTOR TO PROVIDE TEMPORARY PROTECTION OF THE ROOF WITHIN THE AREA OF WORK THROUGHOUT CONSTRUCTION.
6. ANCHOR CONDENSER TO SUPPORTS WITH ½" STAINLESS STEEL GRADE 5 ANCHORS

4 M-81 MECHANICAL EQUIP RAILS DETAIL

SCALE: NOT TO SCALE



NOTE:

1. AT PENETRATIONS THROUGH EXISTING ROOF, FLASH INTO EXISTING ROOF SYSTEM AND PATCH TO MATCH AS REQUIRED BY ROOF SYSTEM MANUFACTURER.

5 M-82 ROOF CURB DETAIL

SCALE: NOT TO SCALE

CONSULTANT INFORMATION

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Syosset, N.Y. 516-214-8157[T]

CONSULTANT SEAL

FRANK F. ULRICH — STATE OF NEW YORK — No. 090111 — LICENSED PROFESSIONAL ENGINEER

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED ☐ AS BUILT – NO CHANGES

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PROJECT COORDINATOR: NAME / SIGNATURE / TITLE / DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

INFRASTRUCTURE REHABILITATION - PHASE 3
PLAYLAND PARK, RYE, NEW YORK
RESTAURANT KITCHEN WITH FOOD VENDING
MECHANICAL DETAILS 2 OF 2

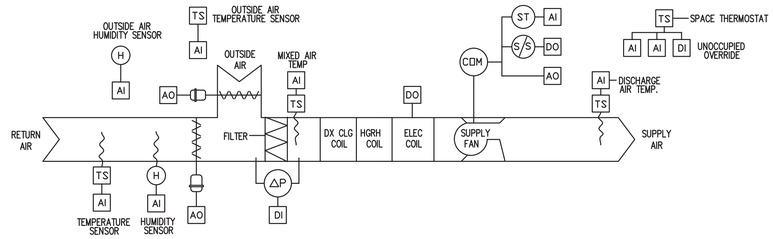
CONTRACT NUMBER	SHEET NUMBER
22-523	K-M-82

DWG NO.: 557 of 664

SCALE: AS INDICATED

DATE: 08/23/2022

DPW FILE NUMBER: 1-118-M-1306-0 REV. NO.: 0

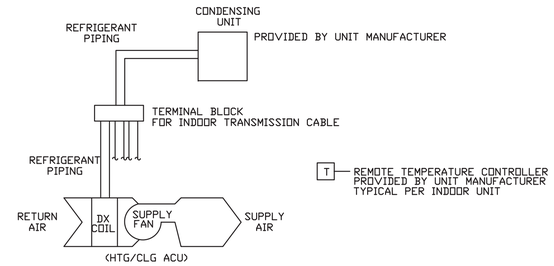


ROOFTOP UNIT - ELECTRIC HEATING COIL AND DX COOLING - SEQUENCE OF OPERATIONS:

1. GENERAL:
   a. SUPPLY FAN AND ASSOCIATED EXHAUST FANS SHALL RUN CONTINUOUSLY. THE SUPPLY FAN SHALL RUN AT THE FREQUENCY DETERMINED BY THE BALANCING CONTRACTOR.THE RTU SYSTEMS CONSISTS OF SUPPLY FANS W/ EC MOTOR CONTROLLER, BAROMETRIC (PASSIVE) RELIEF, RETURN AIR DAMPERS, ECONOMIZER, DAMPERS, DX COOLING COIL, HOT-GAS REHEAT COIL, AND GAS-FIRED HEATING COIL.
   b. THE RTU SYSTEM IS DESIGNED TO PROVIDE VENTILATION, HEATING AND COOLING SUPPLY AIR, AND MAKEUP FOR GENERAL KITCHEN EXHAUST TO A SINGLE ZONE. FUTURE KITCHEN HOOD MAKEUP AIR TO BE PROVIDED BY RESTAURANT VENDOR WITH DEDICATED SYSTEMS.
   c. THE RTU SYSTEM IS PROVIDED AS A PACKAGED SYSTEM, WITH MANUFACTURER PROVIDED UNIT CONTROLLER.
   d. THE CONTROL CONTRACTOR SHALL REVIEW MANUFACTURER SHOP DRAWINGS AND CONTROL DEVICE INSTALLATION, FURNISH AND INSTALL ALL REMAINING CONTROL DEVICES AND FIELD INSTALLED ACCESSORIES TO PERFORM THE SEQUENCES INDICATED. REFER TO EQUIPMENT SCHEDULES AND DETAILS FOR DEVICES INCLUDED WITH THE EQUIPMENT.
2. OCCUPIED MODE:
   a. SUPPLY FAN AND ASSOCIATED EXHAUST FANS SHALL RUN CONTINUOUSLY (SINGLE ZONE VAV).
   b. THE OUTSIDE AIR DAMPER SHALL OPEN TO THE POSITION REQUIRED TO MAINTAIN THE MINIMUM OUTSIDE AIR QUANTITY INDICATED. OUTSIDE AIR DAMPER SHALL NEVER BE POSITIONED BELOW THIS MINIMUM POSITION EXCEPT IN CASE OF ALARM.
   c. HEATING: WHEN THE SPACE TEMPERATURE IS AT OR BELOW THE HEATING SETPOINT, THE ELECTRIC COIL SHALL MODULATE TO MAINTAIN SPACE HEATING SETPOINT SUBJECT TO A DISCHARGE HIGH LIMIT OF 100 DEG. F (ADJUSTABLE) AND DISCHARGE LOW LIMIT OF 70 DEG. F (ADJUSTABLE).
   d. FREE COOLING: WHEN THE SPACE TEMPERATURE RISES 3 DEG. F (ADJUSTABLE) ABOVE THE SPACE HEATING SETPOINT, AND THE OUTSIDE AIR ENTHALPY IS LOWER THAN THE SPACE ENTHALPY, THE OUTSIDE AIR DAMPER SHALL MODULATE OPEN AND THE ASSOCIATED RELIEF DAMPER SHALL OPEN TO MAINTAIN THE OCCUPIED SETPOINT. THIS SHALL BE DONE SUBJECT TO LOW LIMIT OF 55 DEG. F (ADJUSTABLE) AND WITH THE ELECTRIC HEATING COIL DISABLED.
   e. COOLING: WHEN THE SPACE TEMPERATURE IS 3 DEG. F (ADJUSTABLE) ABOVE THE COOLING SETPOINT, AND THE OUTSIDE AIR CANNOT COOL THE SPACE, THE RESPECTIVE CONDENSING UNIT SHALL BE CYCLED WITH THE ELECTRIC HEATING COIL DISABLED TO MAINTAIN SPACE TEMPERATURE. USE 5 DEG. F (ADJUSTABLE) DEADBAND BETWEEN HEATING AND COOLING SETPOINTS.
3. ECONOMIZER OPERATION
   a. ECONOMIZER OPERATION IS ENABLED WHEN OUTDOOR AIR ENTHALPY IS LESS THAN RETURN AIR ENTHALPY.
   b. THE OUTSIDE AIR AND RETURN AIR DAMPERS SHALL MODULATE AS REQUIRED TO OPTIMIZE SUPPLY AIR TEMPERATURE SETPOINT VIA FREE COOLING.THIS IS TYPICALLY A FULLY OPEN OUTSIDE AIR DAMPER DURING SUMMER MONTHS, AND PARTIALLY OPEN OUTSIDE AIR AND RETURN AIR DAMPERS DURING WINTER MONTHS.
   c. IF ECONOMIZER MODE CAN NOT FULLY PROVIDE THE REQUIRED DISCHARGE AIR TEMPERATURE, THE DX COOLING COIL SHALL SUPPLEMENT AS REQUIRED.
4. UNOCCUPIED MODE:
   a. THE SUPPLY AND ASSOCIATED EXHAUST FAN SHALL BE OFF.
   b. THE OUTSIDE AIR DAMPER AND THE ASSOCIATED RELIEF AIR HOOD DAMPER SHALL BE FULLY CLOSED AND THE RETURN AIR DAMPER SHALL BE FULLY OPEN.
   c. ON DROP IN SPACE TEMPERATURE BELOW THE UNOCCUPIED HEATING SETPOINT, CYCLE THE FAN ON AND ELECTRICAL COIL SHALL OPERATE AT THE FULL RATE TO MAINTAIN REDUCED SPACE TEMPERATURE. USE 5 DEG. F (ADJUSTABLE) DEADBAND TO MINIMIZE SHORT CYCLING.
   d. A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT IN OCCUPIED MODE FOR 1 HOUR (ADJUSTABLE). AT EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.
5. WARM-UP MODE:
   a. THE UNIT SHALL START PER AN OPTIMUM START PROGRAM.
   b. THE OUTSIDE AIR DAMPER AND THE ASSOCIATED RELIEF HOOD DAMPER SHALL BE FULLY CLOSED, THE RETURN AIR DAMPER SHALL BE FULLY OPEN, AND THE ASSOCIATED EXHAUST FAN SHALL BE OFF.
   c. THE SUPPLY FAN SHALL RUN AND THE ELECTRIC HEATING COIL SHALL MODULATE TO MAINTAIN OCCUPIED SETPOINT.
6. SAFETIES:
   a. DIFFERENTIAL PRESSURE ACROSS THE AIR FILTERS SHALL GENERATE AN ALARM AT UNIT CONTROLLER WHENEVER THE DIFFERENTIAL PRESSURE EXCEEDS IT'S ADJUSTABLE SETPOINT.
   b. IF THE DISCHARGE AIR TEMPERATURE DROPS BELOW 35 DEG F (ADJUSTABLE), THE SUPPLY FAN SHALL TURN OFF AND SHALL BE LOCKED OUT, AND AN ALARM SHALL BE ACTIVATED.
   c. IF THE DISCHARGE AIR TEMPERATURE RISES ABOVE 120 DEG. F (ADJUSTABLE), THE ELECTRIC HEATING COIL SHALL TURN OFF AND AN ALARM SHALL BE ACTIVATED.

1 M-91 ROOFTOP UNIT - ELECTRIC COIL AND DX COOLING

SCALE: NOT TO SCALE



MULTIPLE DUCTLESS SPLIT SYSTEMS - HEATING AND COOLING - SEQUENCE OF OPERATIONS:

1. UNITS SHALL BE CONTROLLED WITH UNIT PROVIDED THERMOSTATS AND CONNECTED TO CONTROLLER .
2. GENERATE AN ALARM AT CONTROLLER WHEN THE TEMPERATURE GOES ABOVE OR BELOW ROOM TEMPERATURE RANGE (ADJUSTABLE).

2 M-61 MULTIPLE DUCTLESS SPLIT SYSTEM

SCALE: NOT TO SCALE

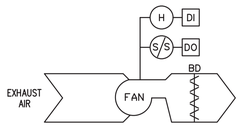
EXHAUST FAN - CONSTANT SPEED - SEQUENCE OF OPERATIONS:

INTERLOCK THE OPERATION OF THE EXHAUST FANS AND AUTOMATIC DAMPERS WITH THEIR RESPECTIVE HEATING AND COOLING EQUIPMENT, RTU-1.

1. OCCUPIED MODE:
   a. THE EXHAUST FAN SHALL RUN CONTINUOUSLY AND THE AUTOMATIC AIR DAMPER SHALL OPEN.
3. UNOCCUPIED MODE:
   a. THE EXHAUST FAN SHALL BE OFF AND THE AUTOMATIC AIR DAMPER SHALL BE CLOSED.
4. WARM-UP MODE:
   a. THE EXHAUST FAN SHALL BE OFF AND THE AUTOMATIC AIR DAMPER SHALL BE CLOSED.

4 M-91 EXHAUST FAN - CONSTANT SPEED

SCALE: NOT TO SCALE



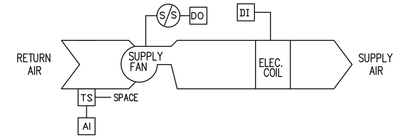
EXHAUST FAN - CONSTANT SPEED - SEQUENCE OF OPERATIONS:

GENERAL: EACH EXHAUST FAN CONSISTS OF FAN, BACKDRAFT DAMPER, AND EC MOTOR CONTROLLER

1. OCCUPIED MODE:
   a. THE EXHAUST FAN SHALL RUN WHEN THE RELATIVE HUMIDITY IN THE SPACE SERVED EXCEEDS 60 PERCENT.
3. UNOCCUPIED MODE:
   a. THE EXHAUST FAN SHALL RUN WHEN THE RELATIVE HUMIDITY IN THE SPACE SERVED EXCEEDS 60 PERCENT.
4. WARM-UP MODE:
   a. THE EXHAUST FAN SHALL RUN WHEN THE RELATIVE HUMIDITY IN THE SPACE SERVED EXCEEDS 60 PERCENT.

5 M-91 ATTIC EXHAUST FAN - CONSTANT SPEED

SCALE: NOT TO SCALE



UNIT HEATER - ELECTRIC - SEQUENCE OF OPERATIONS:

1. ON DROP IN SPACE TEMPERATURE BELOW OCCUPIED HEATING SETPOINT, CYCLE THE FAN ON AND MODULATE (2 STAGE) ELECTRIC COIL TO MAINTAIN SPACE OCCUPIED SETPOINT. FAN SHALL HAVE DELAYED SHUT OFF AFTER VALVE CLOSES. USE 5 DEG. F (ADJUSTABLE) DEADBAND TO MINIMIZE SHORT CYCLING.

6 M-91 UNIT HEATER - ELECTRIC

SCALE: NOT TO SCALE

CONSULTANT INFORMATION
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STATE OF NEW YORK — FRANK F. DEJESSE — No. 090111-1 — LICENSED PROFESSIONAL ENGINEER

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WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
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INFRASTRUCTURE REHABILITATION - PHASE 3
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MECHANICAL CONTROLS

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