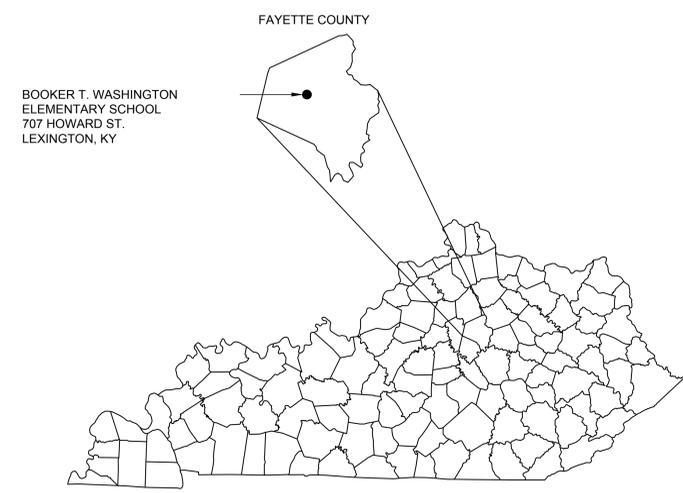


# BOOKER T. WASHINGTON ELEMENTARY SCHOOL HVAC REPLACEMENT FAYETTE COUNTY PUBLIC SCHOOLS

LEXINGTON, KENTUCKY

## "CONSTRUCTION DOCUMENTS" BG #24-168

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GRW PROJECT NO. 4973-05

CLIENT PROJECT NO.

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COVER SHEET

BOOKER T. WASHINGTON - HVAC RENOVATION  
707 HOWARD STREET, LEXINGTON, KY, 40508

REVISIONS	NO.	DESCRIPTION	DESIGNED		DRAWN		CHECKED		APPROVED	
			BY	DATE	BY	DATE	BY	DATE	BY	DATE

DATE: JANUARY 2024  
SCALE: NOT TO SCALE  
SHEET NO.

G-001

JANUARY - 2024

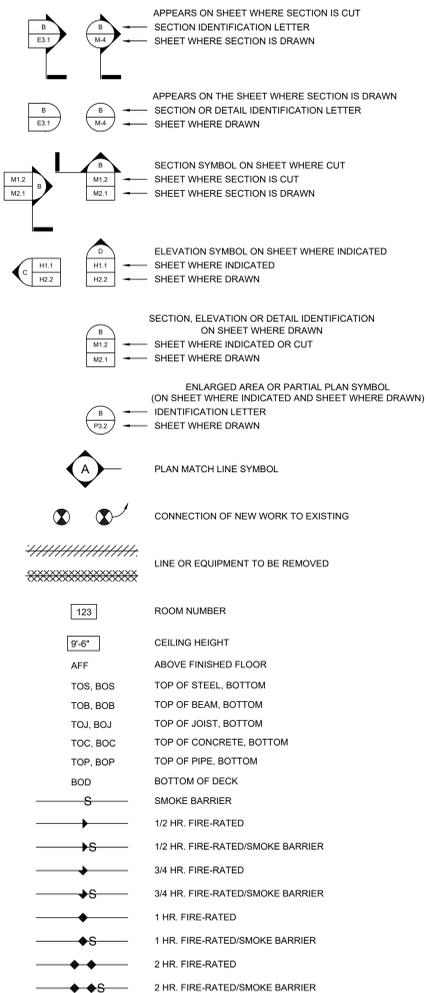
GRW PROJECT NO. 4973-05

PRINTED: 1/16/2024 @ 4:05PM

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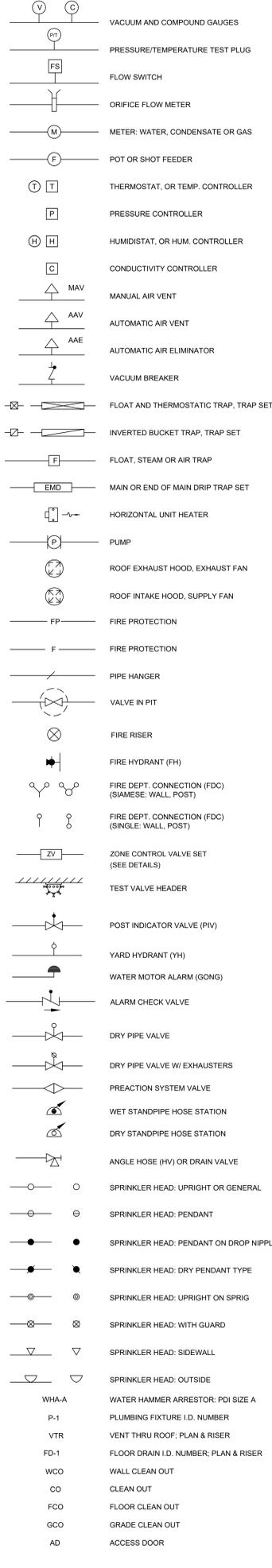
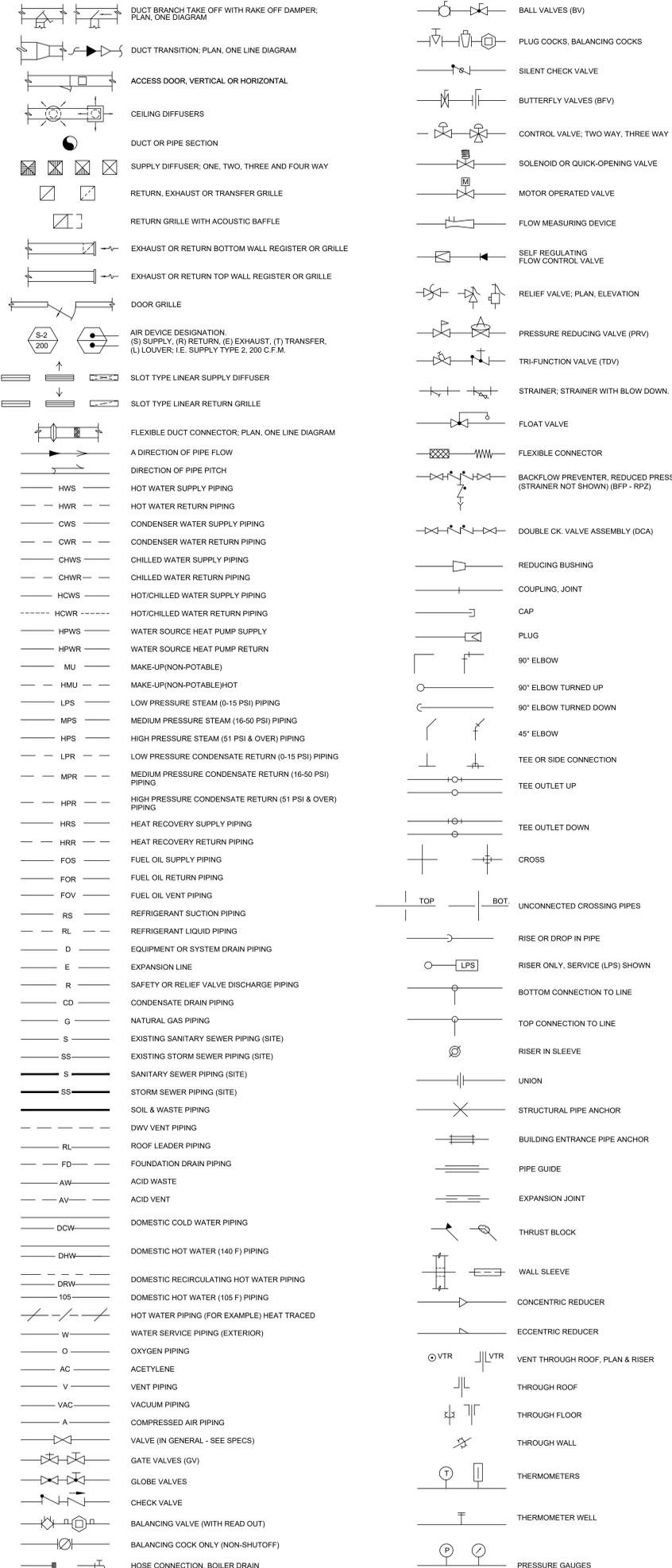
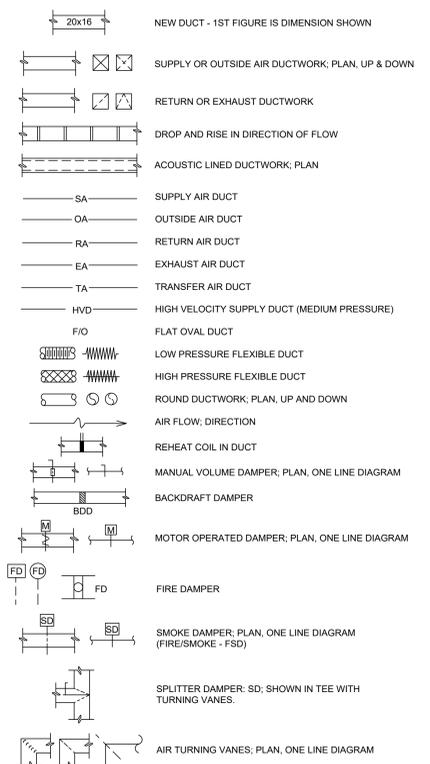
CONSTRUCTION DOCUMENTS

# GENERAL LEGEND



NOTE: LEGENDS ALSO APPEAR ON INDIVIDUAL PLANS, SCHEDULES AND DETAILS.

# MECHANICAL LEGEND HVAC, PLUMBING & FIRE PROTECTION



# GENERAL NOTES:

- GENERAL NOTES, WHEREVER THEY ARE FOUND, APPLY TO ALL WORK IN THE PROJECT, UNLESS OTHERWISE INDICATED. SHEET NOTES, UTILIZING NOTE SYMBOLS, APPLY ONLY TO THE SHEET ON WHICH THEY ARE FOUND, UNLESS OTHERWISE STATED. THE MEANING OF NOTE SYMBOLS AND NUMBERS VARIES FROM SHEET TO SHEET.
- CONTRACTOR SHALL UTILIZE ALL INFORMATION IN THE CONTRACT DOCUMENTS FOR PROVIDING THE WORK. CONTRACTOR SHALL UTILIZE DETAILS AND FLOW DIAGRAMS FOR THE WORK WHERE APPROPRIATE, WHETHER OR NOT THEY ARE SPECIFICALLY REFERENCED ON THE PLANS OR SUPPORTING DRAWINGS.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND CONTRACT DOCUMENTS ARE TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE ANY WORK RELATING TO THOSE CONDITIONS IS PERFORMED.
- LEGENDS OR LISTS OF SYMBOLS AND ABBREVIATIONS ARE GENERAL IN NATURE AND MAY CONTAIN ITEMS NOT USED IN THE CONTRACT DOCUMENTS. IF ANY SYMBOLS ARE FOUND WHICH ARE NOT DEFINED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER SHALL BE CONTACTED FOR CLARIFICATION BEFORE THE BID.
- CONTRACTOR SHALL MAINTAIN A SET OF PROJECT RECORD DRAWINGS AT THE JOB SITE AND SHALL BE RESPONSIBLE FOR MAKING CLEAR, NEAT CHANGES TO THE DRAWINGS, REFLECTING CHANGES TO THE WORK AND VARIANCE IN EXISTING CONDITIONS.
- PROVIDE ALL MISCELLANEOUS STEEL, AS REQUIRED, TO SUPPORT ALL MECHANICAL DUCT AND PIPING SYSTEMS AND EQUIPMENT. HANG ALL EQUIPMENT FROM STRUCTURE WITH MINIMUM OF TWO TRAPZEE ASSEMBLIES OR FOUR INTEGRAL MOUNTING POINTS WITH VIBRATION ISOLATORS ON ALL FOUR SUPPORTS. DO NOT HANG ANYTHING FROM STEEL, COMPOSITION OR WOODEN DECKS, NON-ROOF CONCRETE DECKS MAY BE USED ONLY WITH PERMISSION OF THE ENGINEER. DO NOT HANG ANYTHING FROM MECHANICAL OR ELECTRICAL ITEMS.
- NO STEEL STRUCTURAL MEMBERS SHALL BE CUT, BURNED, WELDED OR DRILLED WITHOUT SPECIFIC PERMISSION OF THE ENGINEER.
- NO WOODEN STRUCTURAL MEMBERS SHALL BE CUT OR DRILLED EXCEPT AS INDICATED IN THE CONTRACT DOCUMENTS OR AS APPROVED BY THE ENGINEER.
- ALL EQUIPMENT, ACCESSORIES, PIPING, WIRING, DUCT AND OTHER WORK, WHICH IS INSTALLED IN FINISHED SPACES SHALL BE CONCEALED IN WALLS, FLOORS, FURRED CHASES OR SUSPENDED CEILINGS, EXCEPT FOR INDICATED TERMINAL UNITS, CONTROLS, AIR INLETS AND OUTLETS, AS SHOWN.
- DUCT DAMPERS IN INACCESSIBLE CEILINGS MAY BE PROVIDED WITH APPROVED REMOTE OPERATORS INSTEAD OF ACCESS DOORS.
- DO NOT CHANGE PATH OF PIPING OR DUCT RUNS, ADD TURNS OR OFFSETS OR CHANGE DUCT DIMENSIONS OR PIPE SIZE WITHOUT FIRST CONSULTING THE ENGINEER. PIPE SIZES SHOWN ON DRAWINGS ARE NOMINAL UNLESS OTHERWISE INDICATED. ALL DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE DIMENSIONS FOR SHOP OR FIELD-FABRICATED DUCT AND NOMINAL SIZES FOR FACTORY FABRICATED DUCT.
- FOR TYPICAL STEAM, WATER, REFRIGERANT AND AIR CONNECTIONS TO EQUIPMENT, SEE STANDARD DETAILS.
- ALL COPPER PIPING SHALL BE ASSEMBLED WITH WROUGHT COPPER OR CAST COPPER ALLOY FITTINGS AND 95% TIN ANTIMONY SOLDER OR SILVER BRAZING. NO SOLDER CONTAINING LEAD SHALL BE USED.
- ALL CHECK VALVES IN PUMP DISCHARGES SHALL BE SPRING-LOADED OR SILENT TYPE OR FOR LARGE WASTE: LEVER-WEIGHTED TYPE.
- ALL EXISTING EQUIPMENT SHUTDOWNS OR INTERRUPTIONS OF UTILITY SERVICE REQUIRED FOR COMPLETION OF THE WORK SHALL BE SCHEDULED IN ADVANCE, AS REQUIRED BY THE OWNER.
- COORDINATE ALL PIPING AND DUCTWORK WITH BOTH NEW AND EXISTING MECHANICAL AND ELECTRICAL WORK, INCLUDING HVAC, PLUMBING, ELECTRICAL, FIRE ALARM, SPRINKLER AND COMMUNICATIONS.
- CONTRACTOR IS RESPONSIBLE FOR MAKING ALL REQUIRED CONNECTIONS FOR A COMPLETE SYSTEM. CONNECTIONS OF NEW WORK TO EXISTING IS USUALLY INDICATED BY SPECIAL SYMBOL (SEE LEGEND). SYMBOLS MISSING FROM THE DRAWINGS DO NOT EXCUSE THE CONTRACTOR FROM PROVIDING THE WORK.
- ANY AND ALL DAMAGE DUE TO DEMOLITION OR CONSTRUCTION IS TO BE REPAIRED OR REPLACED AS APPROPRIATE, SUBJECT TO ENGINEER'S APPROVAL, AND AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL NOT REMOVE OR DISTURB ANY SUSPECTED HAZARDOUS MATERIALS, INCLUDING ASBESTOS-CONTAINING MATERIALS (ACM), LEAD-BASED PAINTS, ELECTRICAL GEAR CONTAINING PCB'S OR ANY OTHER, EXCEPT AS INSTRUCTED IN THIS CONTRACT. IF ANY MATERIAL NOT COVERED BY THE CONTRACT IS ENCOUNTERED, NOTIFY THE ENGINEER AT ONCE.
- ALL DEMOLISHED OR REMOVED EQUIPMENT, PIPING, DUCTWORK, SUPPORTS, CONTROLS AND THE LIKE SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE UNLESS OTHERWISE NOTED.
- REINSULATE ALL DUCTWORK AND PIPING WHERE EXISTING INSULATION HAS BEEN REMOVED OR DAMAGED DURING THE PROJECT.
- EXISTING OUTLETS (EXS) ARE SHOWN FOR BALANCING PURPOSES ONLY. NO MODIFICATIONS ARE REQUIRED.
- ALL DUCTWORK AND SHEET METAL SHALL BE PROVIDED AS INDICATED AND SHALL BE MANUFACTURED AND SHOP OR FIELD-FABRICATED, AS A MINIMUM, IN ACCORDANCE WITH THE RECOMMENDATIONS AND DETAILS OF SMACNA, UNLESS SPECIFICALLY INDICATED OTHERWISE.
- FANS SHALL BE PROVIDED AS INDICATED BY GREENHECK, CARNES, COOK OR APPROVED EQUAL. GRILLES, REGISTERS AND DIFFUSERS SHALL BE PROVIDED AS INDICATED BY TTUS, TUTTLE AND BAILEY, PRICE, CARNES OR APPROVED EQUAL. LOUVERS, HOODS AND PENTHOUSES SHALL BE PROVIDED AS INDICATED BY GREENHECK, CARNES, COOK OR APPROVED EQUAL. PROVIDE FIRE AND SMOKE DAMPERS IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA AND THE KY BUILDING CODE.
- ALL HVAC PIPING SHALL BE IN ACCORDANCE WITH ASME STANDARDS AND PRACTICES AND THE REQUIREMENTS OF THE KY BUILDING CODE. HVAC PIPING SHALL BE FLANGED AND WELDED STEEL 3" AND ABOVE, TYPE L COPPER FOR 2" AND BELOW AND EITHER FOR 2 1/2". ALL WELDING SHALL BE IN ACCORDANCE WITH AWS STANDARDS.
- PROVIDE ALL HVAC EQUIPMENT AND ACCESSORIES AS INDICATED. INSTALL IN COMPLIANCE WITH ALL REQUIREMENTS OF THE KY BUILDING CODE.
- MOUNT ALL ROOM THERMOSTATS OR ADJUSTABLE SENSORS AT HEIGHTS ABOVE FINISHED FLOOR, AS DIRECTED BY THE ENGINEER.
- ALL HYDRONIC PIPING SYSTEMS SHALL BE PITCHED UP 1" IN 40 FT. IN DIRECTION OF FLOW.
- ALL HIGH POINTS IN HYDRONIC PIPING SYSTEMS SHALL CONTAIN AIR CHAMBERS WITH AUTOMATIC AIR VENTS, PIPED PER DETAILS.
- ALL LOW POINTS IN HYDRONIC PIPING SYSTEMS SHALL CONTAIN A 3/4" DRAIN BALL VALVE WITH HOSE CONNECTION.
- PIPING TO HEATING AND COOLING WATER COILS SHALL BE MADE TO PROVIDE COUNTERFLOW BETWEEN WATER AND AIR.
- DO NOT USE BULL-HEADED TEE FITTINGS, EITHER ON PIPE OR ON DUCT, UNLESS SPECIFICALLY SHOWN, OR IN THE CASE OF DUCT, UNLESS INTERNAL TURNING VANES PER SMACNA ARE PROVIDED.
- CONSULT ARCHITECTURAL REFLECTED CEILING PLAN FOR PLACEMENT OF AIR TERMINALS. COORDINATE WITH MECHANICAL WORK AND WORK OF OTHER TRADES.
- SUPPLY AND RETURN DUCT RUNS SHOWN AS SINGLE-LINE DIAGRAM ON PLANS SHALL BE EXTERNALLY INSULATED GALVANIZED RECTANGULAR DUCT, CONSTRUCTED PER SMACNA STANDARDS. OR SINGLE WALL ROUND PIPE AS SPECIFIED. APPROPRIATELY RATED FLEX DUCT MAY BE SUBSTITUTED FOR A MAXIMUM OF FIVE FEET OF MORE OR LESS STRAIGHT (MAX 90 DEGREE BEND) RUN ON EITHER HIGH OR LOW VELOCITY DUCT.
- PROVIDE MANUAL DAMPERS IN ALL SUPPLY AND EXHAUST BRANCHES CONTAINING GRILLES, REGISTERS OR DIFFUSERS WHEN SHOWN ON PLANS OR NOT AND PROVIDE DAMPERS IN RETURNS WHERE SHOWN. PROVIDE ADJUSTABLE TAKE-OFF FITTINGS WITH GRIDES IN LIEU OF MANUAL DAMPERS FOR ALL ROUND TAKE-OFFS FROM RECTANGULAR MAINS OR PLENUMS. DAMPERS IN DUCT DO NOT REPLACE DAMPERS SPECIFIED AS PART OF THE AIR TERMINAL ASSEMBLY OR VICE VERSA.
- USE TURNING VANES, PER SMACNA CONSTRUCTION GUIDELINES, FOR ALL MITERED RECTANGULAR TURNS OF 45 DEGREES OR MORE.
- CONTRACTOR SHALL MAKE MINOR OFFSETS AND LOCATION CHANGES IN PIPE AND DUCT AND IN DUCT ASPECT RATIO AS REQUIRED IN CONGESTED CEILING OR MECHANICAL SPACES. GENERALLY, THESE WILL BE AT NO COST TO THE OWNER AND APPROVED BY THE ENGINEER WITHOUT FORMAL DOCUMENTS. MAJOR REROUTING OF LINES OR MAJOR ADDITION OF FITTINGS WILL BE REVIEWED AND APPROVED AS A CHANGE ORDER OR A FORMAL DIRECTIVE. ENGINEER ALONE SHALL CLASSIFY CHANGES AS MAJOR OR MINOR.
- PROVIDE ALL CONTROLS NECESSARY TO OPERATE EQUIPMENT AS SHOWN OR DESCRIBED, INCLUDING VALVES, ACTUATORS, THERMOSTATS, DAMPERS, ALL ACCESSORY DEVICES, POWER AND/OR PNEUMATIC SERVICE.
- PROVIDE ADDITIONAL INPUT/OUTPUT POINTS REQUIRED TO IMPLEMENT CONTROL SEQUENCES SPECIFIED.
- PROVIDE ALL WORK NECESSARY FOR THE COMPLETE FIRE PROTECTION SYSTEM AS INDICATED AND NOTED, INCLUDING ALL CONNECTIONS TO EXISTING WORK, NEW PIPING AND ACCESSORIES AND FINAL FINISH MOUNTING OF SPRINKLERS IN LOCATIONS INDICATED AND TESTING, ALL AS REQUIRED TO MEET ALL PROVISIONS OF NFPA-13 AND THE KY BUILDING CODE. WORK SHALL BE PERFORMED BY A LICENSED SPRINKLER CONTRACTOR AND SHALL BE ACCOMPANIED BY CERTIFICATIONS OF INSPECTION AND APPROVAL BY THE DEPT. OF HOUSING, BUILDINGS AND CONSTRUCTION. ALL SCREWED PIPING SHALL BE MINIMUM SCH 40 STEEL. ALL VITACULITE TYPE PIPING SHALL BE MINIMUM SCH 10 STEEL.
- PROVIDE ALL WORK NECESSARY FOR THE COMPLETE FIRE PROTECTION SYSTEM AS INDICATED AND NOTED, INCLUDING ALL CONNECTIONS TO EXISTING WORK, NEW PIPING AND ACCESSORIES AND FINAL FINISH MOUNTING OF SPRINKLERS IN LOCATIONS INDICATED AND TESTING, ALL AS REQUIRED TO MEET ALL PROVISIONS OF NFPA-13, NFPA-14, NFPA-20 AND THE KY BUILDING CODE. WORK SHALL BE PERFORMED BY A LICENSED SPRINKLER CONTRACTOR.
- ALL FIRE PROTECTION COMPONENTS, INCLUDING BUT NOT LIMITED TO PUMPS, VALVES, PIPE & FITTINGS, CONTROL SYSTEMS AND TRIM SHALL BE UL AND/OR FM LISTED FOR FIRE SERVICE, WHERE SUCH LISTING EXISTS.
- PROVIDE LISTED AIR RELEASE FOR ALL TRAPPED RUNS OF FIRE PROTECTION PIPING.
- ALL FERROUS FIRE PROTECTION PIPING SHALL BE PAINTED RED WHERE EXPOSED TO VIEW; SHADE TO BE APPROVED BY ENGINEER.
- ALL FIRE PROTECTION SHUTOFF VALVES SHALL BE SUPERVISED BY THE ALARM SYSTEM EXCEPT ON JOCKEY PUMP AND BYPASS.
- FIRE PROTECTION PIPING CONNECTIONS MAY BE WELDED, FLANGED, SCREWED OR GROOVE-JOINT TYPE PER NFPA 13, 14, 20 AND THE SPECIFICATIONS FOR THIS PROJECT. NO SCREWED PIPING LARGER THAN 2 INCHES. PITCH ALL PIPING TO DRAIN.
- SPRINKLER HEADS SHOWN IN FIRE PROTECTION DRAWINGS ARE LOCATED APPROXIMATELY. CONSULT ARCHITECTURAL REFLECTED CEILING PLAN FOR PLACEMENT OF SPRINKLER HEADS IN FINISHED CEILINGS AND CEILING GRIDS. CONTRACTOR SHALL PROVIDE HYDRAULICALLY-DESIGNED PIPING SYSTEMS AND SHALL MODIFY LOCATION OF SPRINKLER HEADS ONLY AS REQUIRED TO CONFORM WITH CODE AND PREVENT BLOCKAGE OF PATTERN. (PROVIDE HEADS AS SHOWN UNLESS IN VIOLATION OF CODE)
- SPRINKLER HEADS SHALL BE CENTERED IN 2' x 2' SPACE IN EITHER 2' x 2' OR 2' x 4' GRID LAYOUT.
- COORDINATE ALL WORK. DO NOT MOUNT SPRINKLER HEADS OR HANG PIPING SUCH AS TO BLOCK ACCESS TO HVAC OR ELECTRICAL EQUIPMENT OR THE CHANGEOUT OF EQUIPMENT WHEN NECESSARY.
- PROVIDE SPECIAL HEADS AS REQUIRED FOR COMPLETE DESIGN. PROVIDE HIGH TEMPERATURE HEADS FOR AREAS NEAR SPACE HEATING OUTLETS AND EQUIPMENT.

GRV PROJECT NO. 4975-05

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MECHANICAL LEGEND AND GENERAL NOTES

BOOKER T. WASHINGTON - HVAC RENOVATION

707 HOWARD STREET, LEXINGTON, KY, 40508

REVISIONS	NO.	DESCRIPTION	DATE	BY	APPROVED
NO					

DATE: JANUARY 2024

SCALE: NO SCALE

SHEET NO. M-001

**DEMOLITION GENERAL NOTES:**

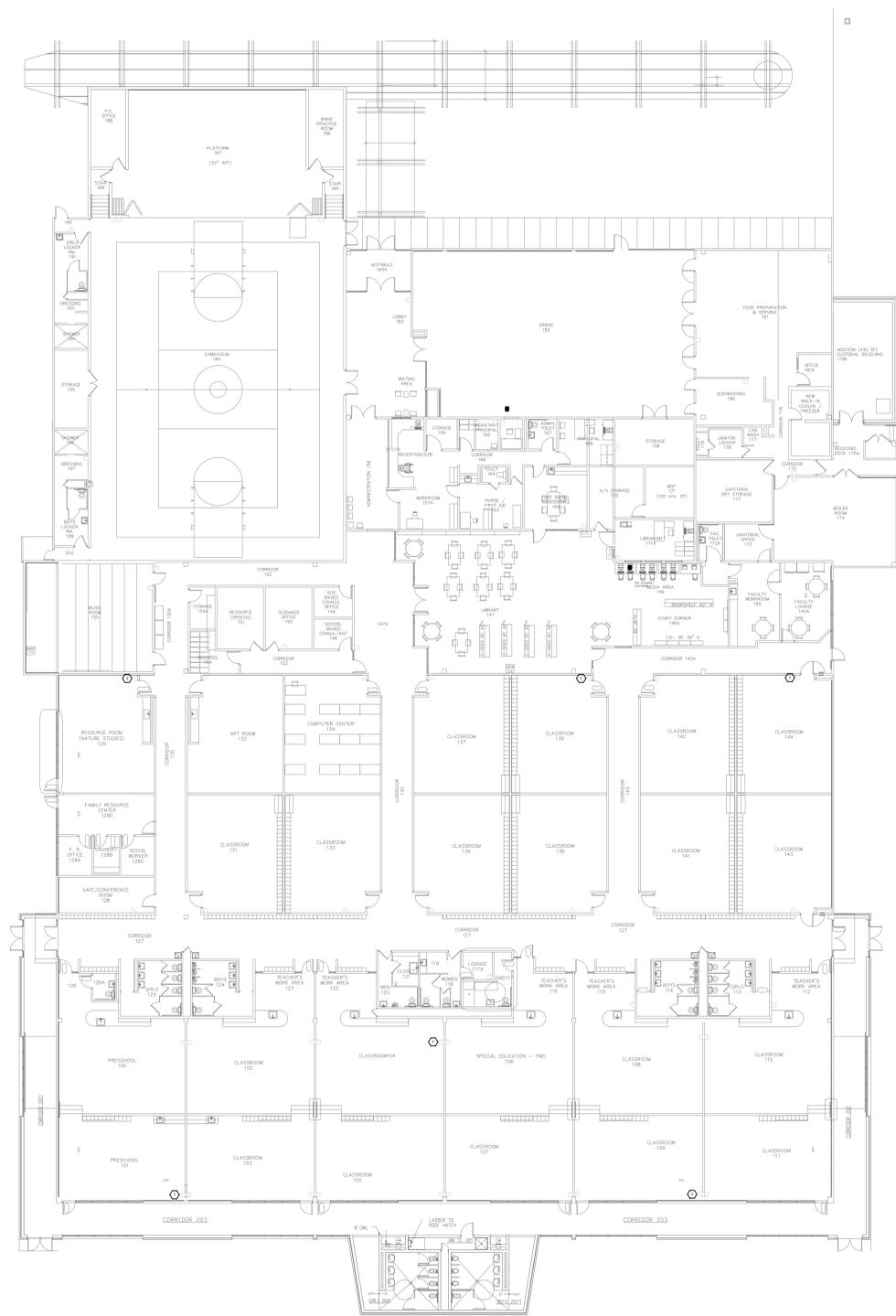
- A. DEMOLITION PLAN HAS BEEN DEVELOPED FROM EXISTING PLANS AND VISITING SITE. SOME MECHANICAL EQUIPMENT, DUCTWORK, REGISTERS AND PIPING SIZES MAY NOT BE INDICATED.
- B. IT SHALL BE THE RESPONSIBILITY OF ALL CONTRACTORS WHO SUBMIT BIDS FOR THIS PROJECT TO VISIT THE JOB PREMISES PRIOR TO BIDDING IN ORDER THAT THEY MAY DETERMINE THE TYPE, QUANTITY, LOCATIONS AND ANY HARDSHIPS INVOLVED WITH THE REMOVAL OF EQUIPMENT.
- C. CONTRACTOR UNDER THIS DIVISION IS FINANCIALLY RESPONSIBLE TO REPAIR AND PATCH FLOORS, WALLS, CEILING AND ROOF TO MATCH EXISTING CONDITION WHERE DEMOLITION WORK HAS BEEN DONE. COORDINATE ALL WORK WITH OWNER/ENGINEER.
- D. THE EXISTING HVAC SYSTEM SHALL REMAIN FULLY FUNCTIONAL THROUGHOUT PHASED CONSTRUCTION.
- E. IF THE EXISTING HVAC SYSTEM SHALL EVER REQUIRE SHUTTING DOWN TEMPORARILY IN OCCUPIED AREAS DURING CONSTRUCTION THE CONTRACTOR SHALL COORDINATE THE TIMING OF THE SHUT DOWN PERIOD WITH THE OWNER AND ARCHITECT PRIOR TO DISABLING THE EXISTING SYSTEM. THE EXISTING HVAC S SYSTEM SHALL REMAIN FUNCTIONAL IN ALL OCCUPIED AREAS DURING NORMAL SCHOOL OPERATION PERIODS.
- F. ALL EXISTING THERMOSTATS AND EXISTING CONTROL WIRING SHALL BE REMOVED FROM ALL EQUIPMENT THAT IS BEING REMOVED IN THE BUILDING IN DEMOLISHED AREAS UNLESS OTHERWISE NOTED.

**SHEET KEYNOTES:**

- 1. EXISTING THERMOSTAT TO BE REPLACED IN LOCATION. NOTE THAT LOCATION IS APPROXIMATE. SEE NEW WORK PLAN FOR MORE INFORMATION. TYPICAL OF ALL.

**SPECIAL NOTES**

- 1. ALL EXISTING HVAC SYSTEMS SHALL REMAIN OPERATIONAL DURING THIS PROJECT. EXISTING EQUIPMENT SHALL BE DISABLED ONLY WHEN NEW EQUIPMENT IS ONSITE AND READY TO BE INSTALLED.
- 2. AS UNITS ARE INSTALLED, THERMOSTATS SHALL BE INSTALLED AND PLACED IN STAND ALONE OPERATION MODE.
- 3. ALL NEW EQUIPMENT INSTALLED SHALL CONNECT TO NEW DDC CONTROL SYSTEM TIED INTO FAYETTE COUNTY SCHOOLS CONTROL NETWORK. ALL OTHER EXISTING EQUIPMENT FOR THE SCHOOL SHALL REMAIN ON THE EXISTING CONTROL SYSTEM AND SHALL REMAIN SEPARATE FROM NEW EQUIPMENT CONTROLS.



**FIRST FLOOR PLAN - HVAC - DEMOLITION**  
 SCALE: 1/8"=1'-0"

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**FIRST FLOOR PLAN - AREA A - HVAC - DEMOLITION**  
 BOOKER T. WASHINGTON - HVAC RENOVATION  
 707 HOWARD STREET, LEXINGTON, KY, 40508

NO.	REVISIONS DESCRIPTION	DESIGNED		BY		DATE	
		CVS	DRW	JJK	CVS	CVS	CVS

DATE: JANUARY 2024  
 SCALE: 1/8" = 1'-0"  
 SHEET NO. MD101

**DEMOLITION GENERAL NOTES:**

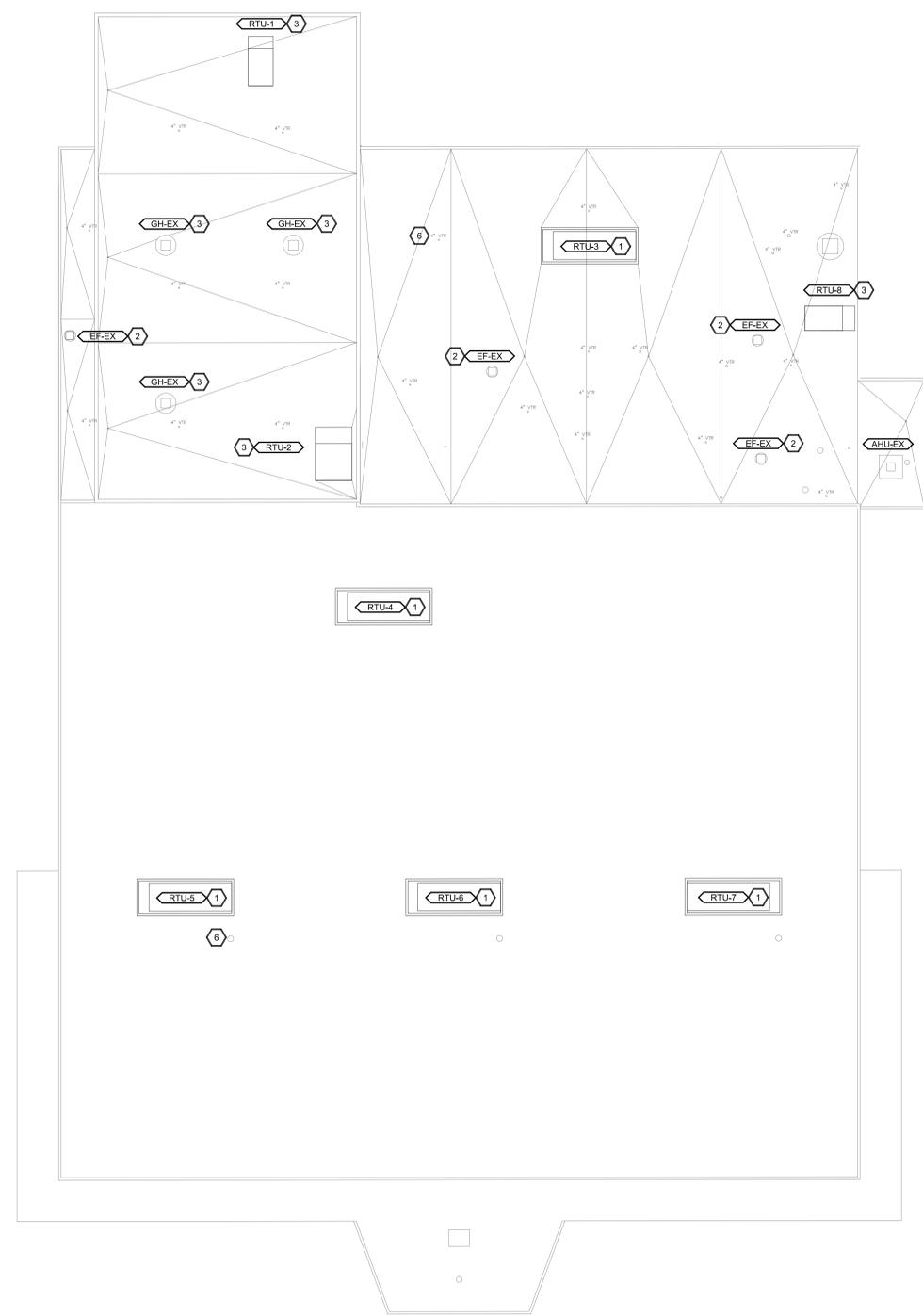
- A. DEMOLITION PLAN HAS BEEN DEVELOPED FROM EXISTING PLANS AND VISITING SITE. SOME MECHANICAL EQUIPMENT, DUCTWORK, REGISTERS AND PIPING SIZES MAY NOT BE INDICATED.
- B. IT SHALL BE THE RESPONSIBILITY OF ALL CONTRACTORS WHO SUBMIT BIDS FOR THIS PROJECT TO VISIT THE JOB PREMISES PRIOR TO BIDDING IN ORDER THAT THEY MAY DETERMINE THE TYPE, QUANTITY, LOCATIONS AND ANY HARDSHIPS INVOLVED WITH THE REMOVAL OF EQUIPMENT.
- C. CONTRACTOR UNDER THIS DIVISION IS FINANCIALLY RESPONSIBLE TO REPAIR AND PATCH FLOORS, WALLS, CEILING AND ROOF TO MATCH EXISTING CONDITION WHERE DEMOLITION WORK HAS BEEN DONE. COORDINATE ALL WORK WITH OWNER/ENGINEER.
- D. THE EXISTING HVAC SYSTEM SHALL REMAIN FULLY FUNCTIONAL THROUGHOUT PHASED CONSTRUCTION.
- E. IF THE EXISTING HVAC SYSTEM SHALL EVER REQUIRE SHUTTING DOWN TEMPORARILY IN OCCUPIED AREAS DURING CONSTRUCTION THE CONTRACTOR SHALL COORDINATE THE TIMING OF THE SHUT DOWN PERIOD WITH THE OWNER AND ARCHITECT PRIOR TO DISABLING THE EXISTING SYSTEM. THE EXISTING HVAC S SYSTEM SHALL REMAIN FUNCTIONAL IN ALL OCCUPIED AREAS DURING NORMAL SCHOOL OPERATION PERIODS.
- F. ALL EXISTING THERMOSTATS AND EXISTING CONTROL WIRING SHALL BE REMOVED FROM ALL EQUIPMENT THAT IS BEING REMOVED IN THE BUILDING IN DEMOLISHED AREAS UNLESS OTHERWISE NOTED.

**SHEET KEYNOTES:**

- 1. EXISTING VAV ROOFTOP UNIT SHALL BE REMOVED AND A NEW VAV ROOFTOP UNIT TO BE INSTALLED IN ITS PLACE. THE EXISTING ROOF CURB SHALL REMAIN IN PLACE AND BE REUSED FOR NEW ROOFTOP INSTALLATION. DISCONNECT EXISTING GAS PIPING, DUCTWORK, AND ELECTRICAL WIRING. NEW CONNECTIONS SHALL BE INSTALLED BACK IN SAME LOCATIONS. SEE NEW WORK PLAN FOR MORE INFORMATION.
- 2. EXISTING EXHAUST FAN SHALL REMAIN IN PLACE.
- 3. EXISTING SINGLE ZONE ROOFTOP UNIT SHALL BE REMOVED AND REPLACED IN THE SAME LOCATION. THE EXISTING ROOF CURB SHALL REMAIN IN PLACE AND A NEW ROOF CURB ADAPTOR SHALL BE INSTALLED IF NECESSARY. DISCONNECT EXISTING DUCTWORK AND ELECTRICAL CONNECTIONS AND RECONNECT TO NEW UNIT. SEE NEW WORK PLAN FOR MORE INFORMATION.
- 4. EXISTING RELIEF VENT SHALL REMAIN IN PLACE.
- 5. EXISTING BOILER VENT STACK SHALL REMAIN IN PLACE.
- 6. EXISTING VENT THRU ROOF PIPING LOCATIONS SHALL REMAIN IN PLACE. TYPICAL OF ALL

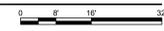
**SPECIAL NOTES**

- 1. ALL EXISTING HVAC SYSTEMS SHALL REMAIN OPERATIONAL DURING THIS PROJECT. EXISTING EQUIPMENT SHALL BE DISABLED ONLY WHEN NEW EQUIPMENT IS ONSITE AND READY TO BE INSTALLED.
- 2. AS UNITS ARE INSTALLED, THERMOSTATS SHALL BE INSTALLED AND PLACED IN STAND ALONE OPERATION MODE.
- 3. ALL NEW EQUIPMENT INSTALLED SHALL CONNECT TO NEW DDC CONTROL SYSTEM TIED INTO FAYETTE COUNTY SCHOOLS CONTROL NETWORK. ALL OTHER EXISTING EQUIPMENT FOR THE SCHOOL SHALL REMAIN ON THE EXISTING CONTROL SYSTEM AND SHALL REMAIN SEPARATE FROM NEW EQUIPMENT CONTROLS.



**ROOF PLAN - HVAC - DEMOLITION**

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



**ROOF PLAN - AREA A - HVAC - DEMOLITION**

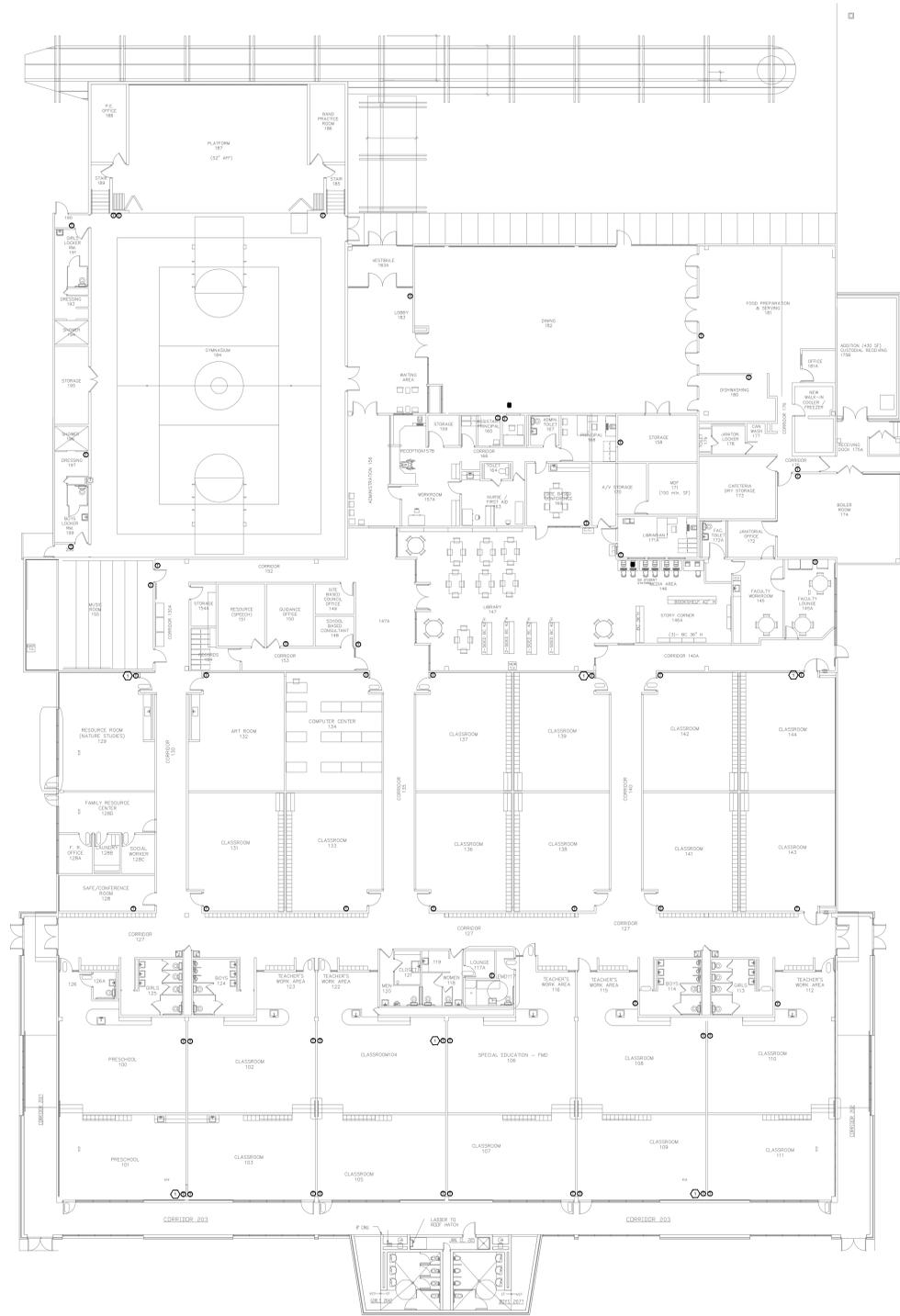
BOOKER T. WASHINGTON - HVAC RENOVATION  
707 HOWARD STREET, LEXINGTON, KY, 40508

REVISIONS	DATE	BY	APPROVED

DESIGNED	CVS
DRAWN	JJK
REVIEWED	CVS
APPROVED	CVS
DATE:	JANUARY 2024
SCALE:	1/16" = 1'-0"
SHEET NO.	MD102

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**FIRST FLOOR PLAN - HVAC - NEW WORK**

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



**SHEET KEYNOTES:**

- EXISTING THERMOSTAT TO BE REPLACED IN LOCATION. NOTE THAT LOCATION IS APPROXIMATE. SEE NEW WORK PLAN FOR MORE INFORMATION. TYPICAL OF ALL.

**SPECIAL NOTES**

- ALL EXISTING HVAC SYSTEMS SHALL REMAIN OPERATIONAL DURING THIS PROJECT. EXISTING EQUIPMENT SHALL BE DISABLED ONLY WHEN NEW EQUIPMENT IS ONSITE AND READY TO BE INSTALLED.
- AS UNITS ARE INSTALLED, THERMOSTATS SHALL BE INSTALLED AND PLACED IN STAND ALONE OPERATION MODE.
- ALL NEW EQUIPMENT INSTALLED SHALL CONNECT TO NEW DDC CONTROL SYSTEM TIED INTO FAYETTE COUNTY SCHOOLS CONTROL NETWORK. ALL OTHER EXISTING EQUIPMENT FOR THE SCHOOL SHALL REMAIN ON THE EXISTING CONTROL SYSTEM AND SHALL REMAIN SEPARATE FROM NEW EQUIPMENT CONTROLS.

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**FIRST FLOOR PLAN - AREA A - HVAC - NEW WORK**

BOOKER T. WASHINGTON - HVAC RENOVATION  
707 HOWARD STREET, LEXINGTON, KY, 40508

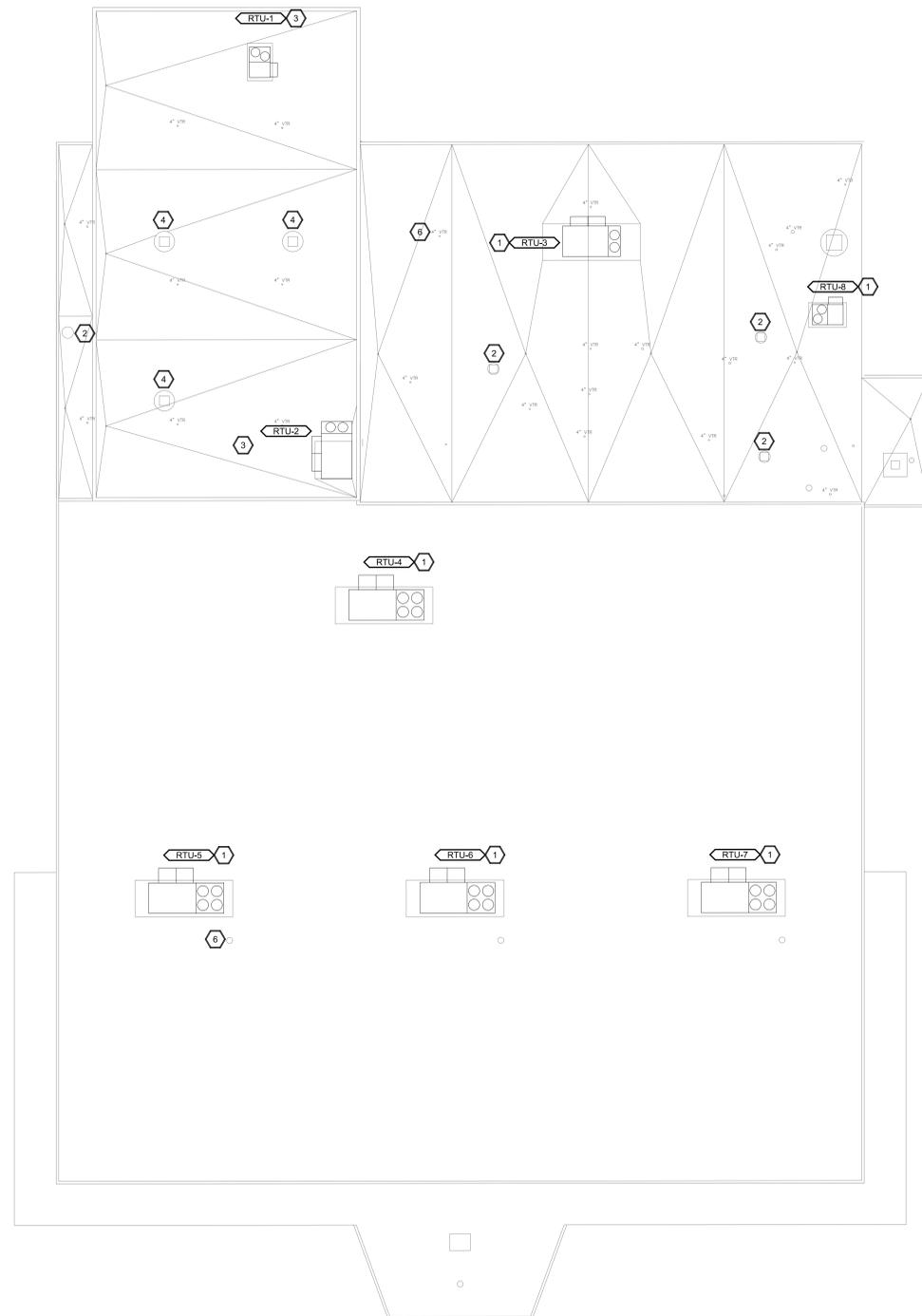
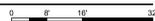
REVISIONS	DATE		BY	
	NO.	DATE	BY	DESCRIPTION

DATE: JANUARY 2024  
SCALE: 1/8" = 1'-0"  
SHEET NO.

M101

ROOF PLAN - HVAC - NEW WORK

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



KEYNOTE SHEET KEYNOTES:

- EXISTING VAV ROOFTOP UNIT SHALL BE REMOVED AND A NEW VAV ROOFTOP UNIT TO BE INSTALLED IN ITS PLACE. THE EXISTING ROOF CURB SHALL REMAIN IN PLACE AND BE REUSED FOR NEW ROOFTOP INSTALLATION. DISCONNECT EXISTING GAS PIPING, DUCTWORK, AND ELECTRICAL WIRING. NEW CONNECTIONS SHALL BE INSTALLED BACK IN SAME LOCATIONS. SEE SHEET MD102 FOR MORE INFORMATION.
- EXISTING EXHAUST FAN SHALL REMAIN IN PLACE.
- EXISTING SINGLE ZONE ROOFTOP UNIT SHALL BE REMOVED AND REPLACED IN THE SAME LOCATION. THE EXISTING ROOF CURB SHALL REMAIN IN PLACE AND A NEW ROOF CURB ADAPTOR SHALL BE INSTALLED IF NECESSARY. DISCONNECT EXISTING DUCTWORK AND ELECTRICAL CONNECTIONS AND RECONNECT TO NEW UNIT. SEE SHEET MD102 FOR MORE INFORMATION.
- EXISTING RELIEF VENT SHALL REMAIN IN PLACE.
- EXISTING BOILER VENT STACK SHALL REMAIN IN PLACE.
- EXISTING VENT THRU ROOF PIPING LOCATIONS SHALL REMAIN IN PLACE. TYPICAL OF ALL.

<p>GRW PROJECT NO. 4975-05</p>	<p>CLIENT PROJECT NO.</p>	<p>THIS DOCUMENT IS THE PROPERTY OF GEOSPATIAL INC. IT IS TO BE USED ONLY FOR THE PROJECT SPECIFICALLY IDENTIFIED HEREIN. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF GEOSPATIAL INC.</p>	<p><b>GRW</b> engineering   architecture   geospatial www.grwinc.com</p>																									
<p>ROOF PLAN - AREA A - HVAC - NEW WORK</p>																												
<p>BOOKER T. WASHINGTON - HVAC RENOVATION 707 HOWARD STREET, LEXINGTON, KY, 40508</p>																												
<p>DESIGNED BY</p>	<p>DATE</p>	<p>REVISIONS</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">NO.</th> <th style="width: 45%;">DESCRIPTION</th> <th style="width: 10%;">DATE</th> <th style="width: 10%;">BY</th> <th style="width: 10%;">APPROVED</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	DESCRIPTION	DATE	BY	APPROVED																				
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<p>DATE: JANUARY 2024</p>																												
<p>SCALE: 1/16" = 1'-0"</p>																												
<p>SHEET NO. M102</p>																												

PACKAGED ROOFTOP UNIT SCHEDULE																											
MARK	MANUFACTURER	MODEL	LOCATION	UNIT		COOLING												HEATING		WEIGHT LBS	ELECTRICAL			REMARKS			
				TON	TYPE	SUPPLY FAN			EXHAUST FAN			LAT		COMPRESSOR			TYPE OF HEATING	EAT/LAT	KW		V/Ø/Hz	MCA	MOCP				
				EER / IEER	AIRFLOW (CFM)	ESP (inH <sub>2</sub> O)	MOTOR SIZE (HP)	AIRFLOW (CFM)	ESP (inH <sub>2</sub> O)	MOTOR SIZE (HP)	LDB (F)	LWB(F)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	STAGES	QTY									REFRIGERANT		
RTU-1	CARRIER	50FC-M08A2M6-3F300	GYM OFFICE	7.5	SINGLE	11.4/15.2	3000	1	1.14	-	-	-	59.6	57.5	90.47	66.02	MULTI	2	410A	ELECTRIC	70/94.2	23	743	460/3/60	42	45	1-5,7-10,13-16, 18-19
RTU-2	CARRIER	50A6-H02SANGS4GN	GYM	25	SINGLE	10/13.4	10000	1.5	10	10000	0.5	-	59	57.6	300	226.5	MULTI	2	410A	ELECTRIC	68/90.7	72	4367	460/3/60	120	125	1-5,7-10,13-16, 18-19
RTU-3	CARRIER	50A7-030ANV64HR	CAFETERIA	30	VAV	10/14.7	12000	2	10	11700	0.5	-	59.3	58.1	343.8	267.9	MULTI	2	410A	NO HEAT-VAV	-	-	4304	460/3/60	81	90	1-11,14-19
RTU-4	CARRIER	50A7-040QV64HR	LIBRARY	40	VAV	10/14.8	16000	2.5	20	11700	0.5	-	58	57.5	484.7	380.4	MULTI	2	410A	NO HEAT-VAV	-	-	5255	460/3/60	117	125	1-11,14-19
RTU-5	CARRIER	50A7-040QV64HR	CLASSROOMS	40	VAV	10/14.8	16000	2.5	20	11700	0.5	-	58	57.5	484.7	380.4	MULTI	2	410A	NO HEAT-VAV	-	-	5255	460/3/60	117	125	1-11,14-19
RTU-6	CARRIER	50A7-040QV64HR	CLASSROOMS	40	VAV	10/14.8	16000	2.5	20	11700	0.5	-	58	57.5	484.7	380.4	MULTI	2	410A	NO HEAT-VAV	-	-	5255	460/3/60	117	125	1-11,14-19
RTU-7	CARRIER	50A7-040QV64HR	CLASSROOMS	40	VAV	10/14.8	16000	2.5	20	11700	0.5	-	58	57.5	484.7	380.4	MULTI	2	410A	NO HEAT-VAV	-	-	5255	460/3/60	117	125	1-11,14-19
RTU-8	CARRIER	50FC-M12A2M6-3F300	KITCHEN	10	SINGLE	11.2/15.2	4000	1	1.8	-	-	-	57.7	57.1	125.75	96.22	MULTI	2	410A	ELECTRIC	70/93.9	30.3	815	460/3/60	54	60	1-5,7-10,13-16, 18-19

REMARKS:

- COOLING DESIGN CONDITIONS: 95F DB / 78F WB AMBIENT. HEATING AMBIENT DESIGN CONDITIONS BASED ON 5F DB / 4F WB
- PACKAGED AIR HANDLING UNIT WITH COMPRESSOR AND CONDENSER
- PROVIDE WITH COMPRESSOR SHORT CYCLE TIMER
- PROVIDE WITH SINGLE POINT POWER CONNECTION WITH FACTORY INSTALLED DISCONNECT SWITCH AND 115V GFI CONVENIENCE OUTLET
- PROVIDE WITH HIGH AND LOW PRESSURE SWITCH
- VAV UNIT - CONNECT TO CONTROLS FOR VAV BOXES INSIDE BUILDING
- PROVIDE WITH HALI GUARD
- PROVIDE WITH FACTORY MOUNTED DDC CONTROLLERS WITH BACNET INTERFACE
- PROVIDE WITH VFDS ON SUPPLY AND EXHAUST FANS
- PROVIDE WITH PHASE PROTECTION
- PROVIDE WITH HOT GAS REHEAT
- PROVIDE WITH SMOKE DETECTOR SHUT DOWN COORDINATE WITH ELECTRICAL PLANS
- PROVIDE UNIT WITH BIPOLAR IONIZATION KIT
- PROVIDE UNIT WITH MERV 13 FILTERS
- PROVIDE WITH ROOF CURB ADAPTOR IF NECESSARY
- PROVIDE 100% ECONOMIZER WITH MODULATING EXHAUST
- PROVIDE BAROMETRIC RELIEF
- PROVIDE WITH DOUBLE WALL CABINET CONSTRUCTION
- PROVIDE UNIT WITH 2 YEAR PARTS WARRANTY AND 5 YEAR COMPRESSOR WARRANTY

OTHER ACCEPTABLE MANUFACTURERS INCLUDE: DAIKIN. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

### SEQUENCE OF OPERATION - ROOFTOP UNITS

**OCCUPIED MODE:** THE UNIT CAN BE PLACED IN THE OCCUPIED MODE BY A 7-DAY PROGRAMMABLE SCHEDULE IN THE DDC CONTROLLER. ACCESSIBLE THROUGH THE KEYPAD. A DIGITAL INPUT SHALL BE AVAILABLE TO OVERRIDE ANY OTHER COMMAND AND TURN THE UNIT ON EVEN WHEN THE SCHEDULE IS CALLING FOR THE UNIT TO BE OFF (UNOCCUPIED MODE). THE DIGITAL INPUT CAN BECOME THE PRIMARY MEANS OF ENABLING THE UNIT BY NOT HAVING ANY ON/OFF TIMES IN THE SCHEDULE. IF A BUILDING AUTOMATION SYSTEM (BAS) IS USED TO INTERFACE WITH THE UNIT(S), THE CONTROLS CONTRACTOR SHOULD CONTACT SEASONS 4 FOR ADDITIONAL INFORMATION.

**UNOCCUPIED MODE:** THE SUPPLY AIR BLOWER AND EXHAUST AIR FAN SHALL BE DE-ENERGIZED. THE OUTDOOR AIR DAMPER WILL BE FULLY CLOSED, AND THE RETURN AIR DAMPER WILL BE FULLY OPEN. NO COOLING OR HEATING FUNCTION WILL BE ALLOWED.

**SUPPLY AIR BLOWER:** THE SUPPLY AIR BLOWER WILL RUN CONTINUOUSLY IN OCCUPIED MODE. THE SUPPLY AIR BLOWER WILL BE A CONSTANT AIR VOLUME TYPE CONTROLLED BY VARIABLE SPEED DRIVE. THE VSD IS USED TO SET THE REQUIRED BLOWER SPEED. THE VSD IS USED FOR BLOWER BALANCING PURPOSES AND WILL BE SET BY THE TEST AND BALANCING CONTRACTOR.

**EXHAUST AIR FAN:** THE EXHAUST AIR FAN WILL BE VARIABLE AIR VOLUME TYPE CONTROLLED BY A VARIABLE SPEED DRIVE AND WILL BE ENERGIZED AND CONTROLLED BASED ON BUILDING PRESSURE.

**SMOKE DETECTOR:** THE UNIT WILL HAVE A RETURN AIR SMOKE DETECTOR. UPON DETECTION OF SMOKE, THE SUPPLY AIR FAN WILL DE-ENERGIZE. THE OUTDOOR (AND EXHAUST) AIR DAMPER(S) WILL DRIVE TO A FULLY CLOSED POSITION. THE RETURN AIR DAMPER WILL DRIVE TO A FULLY OPEN POSITION. A TERMINAL BLOCK SHALL BE PROVIDED FOR FIELD WIRING CONNECTIONS TO A REMOTE LOCATION IF DESIRED.

**COMPRESSOR & COOLING SECTION:** A CALL FOR COOLING WILL BE INITIATED WHEN THE SPACE TEMPERATURE RISES ABOVE THE COOLING SET POINT OF THE TEMPERATURE CONTROL. THE CALL FOR COOLING WILL CONTINUE UNTIL THE TEMPERATURE CONTROL IS SATISFIED. THE COLD DECK DAMPER WILL OPEN AND THE HOT DECK DAMPER WILL CLOSE. THE UNIT IS EQUIPPED WITH AN EVAPORATOR COOLING COIL AND SCROLL COMPRESSORS, INCLUDING A VFD SCROLL LEAD COMPRESSOR CAPABLE OF MODULATING CAPACITY FOR CAPACITY CONTROL. THE COMPRESSORS WILL STAGE BASED ON A CALL FOR COOLING AND SHALL MAINTAIN A DISCHARGE AIR TEMPERATURE OF 50F (ADJUSTABLE). THE LEAD VFD SCROLL COMPRESSOR HAS A DESIGN OPERATING SPEED OF 7200 RPM. THE RANGE OF OPERATION SHOULD BE LIMITED TO A MINIMUM SPEED OF 35% (APPROXIMATELY 2500 RPM) FOR PROTECTION OF THE SYSTEM. COMPRESSOR STAGING SEQUENCE WILL BE: COMPRESSOR 1 ON, COMPRESSOR 2 ON, ETC. COMPRESSOR STAGING MUST BE RE-STARTED BEGINNING WITH STAGE 1 UPON RESET OF ANY SAFETY DEVICE. ONCE THERE IS A CALL FOR COOLING, THE DDC CONTROLLER WILL ENABLE COMPRESSOR 1 AND PROVIDE A DEMAND SIGNAL BASED ON DISCHARGE AIR TEMPERATURE. EACH SUBSEQUENT COMPRESSOR WILL HAVE AN ON-DELAY OF 5 MINUTES TO ALLOW THE LEAD VFD COMPRESSOR TO MODULATE TO MEET SET POINT BEFORE ANY OTHER COMPRESSORS ARE TURNED ON/OFF. IF AFTER 5 MINUTES THE VFD COMPRESSOR IS AT FULL CAPACITY AND THE DISCHARGE AIR TEMPERATURE IS STILL ABOVE THE DISCHARGE AIR TEMPERATURE DEADBAND, THE NEXT COMPRESSOR WILL BE STAGED ON. IF AFTER 5 MINUTES THE VFD COMPRESSOR IS AT MINIMUM OUTPUT AND THE DISCHARGE AIR TEMPERATURE IS STILL BELOW THE DEADBAND, THE NEXT COMPRESSOR WILL BE STAGED OFF. THE VFD COMPRESSOR MUST REACH FULL CAPACITY ON AN INCREASE IN DEMAND OR MINIMUM OUTPUT ON A DECREASE IN DEMAND BEFORE STAGING ANY OTHER COMPRESSORS ON/OFF. EACH COMPRESSOR WILL RUN FOR A MINIMUM OF 3 MINUTES ONCE ENERGIZED TO ENSURE PROPER OIL RETURN TO THE COMPRESSOR. EACH COMPRESSOR HAS A SOLID-STATE 5 MINUTE TIMER TO PREVENT SHORT CYCLING. MECHANICAL COOLING IS DISABLED IF THE COIL LEAVING TEMPERATURE DROPS BELOW 38°FDB (ADJUSTABLE). COOLING WILL REACTIVATE ONCE THE FREEZE STAT DOWNSTREAM OF EVAPORATOR COIL IS SATISFIED. THE UNIT WILL HAVE A LOW AMBIENT LOCKOUT SET AT 50°F (ADJUSTABLE).

**HOT GAS REHEAT COIL:** THE HOT GAS REHEAT (HGR) COIL IS PROVIDED ON THE SPECIFIED COMPRESSOR CIRCUIT(S) (TYPICALLY THE LEAD CIRCUIT) TO PROVIDE "NEUTRAL" AIR LEAVING THE UNIT. THE HGR COIL IS ONLY AVAILABLE WHEN THE COMPRESSOR IS RUNNING AND CAN BE USED AS REHEAT FOR DEHUMIDIFICATION. THE HOT GAS REHEAT COIL IS CONTROLLED BY A MODULATING 3-WAY VALVE TO MAINTAIN A UNIT LEAVING AIR SET POINT OF 70°F (ADJUSTABLE). UPON INITIAL REHEAT CALL, THE HGR VALVE IS SET TO THE FULLY OPEN (100% THROUGH THE HGR COIL) POSITION FOR ONE (1) MINUTE. AFTER ONE MINUTE, THE VALVE IS MODULATED TO ACHIEVE THE REQUIRED LEAVING AIR TEMPERATURE SET POINT. IF THE COMPRESSOR IS ACTIVE AND THE HGR VALVE IS OPEN TO THE HGR COIL (GREATER THAN 0%) FOR MORE THAN AN ACCUMULATED TIME OF 50 MINUTES, THE HGR VALVE IS SET TO THE FULLY OPEN (100%) POSITION FOR ONE (1) MINUTE TO "FLUSH" THE HGR COIL. AFTER THIS FLUSH TIME, THE VALVE IS RETURNED TO NORMAL MODULATING OPERATION TO ACHIEVE THE REQUIRED LEAVING AIR TEMPERATURE SET POINT. IF THERE IS A CALL FOR COOLING ONLY (NO HGR) WHILE THE HGR COIL IS ACTIVE, THE HGR VALVE IS SET TO THE FULLY OPEN (100%) POSITION FOR TWO (2) MINUTES. AT THE END OF TWO MINUTES, THE HGR VALVE IS CLOSED (0%). THE HGR COIL IS COMPLETELY BYPASSED. IF THE COMPRESSOR DE-ENERGIZES, THE HGR VALVE IS SET TO THE FULLY OPEN (100%) POSITION.

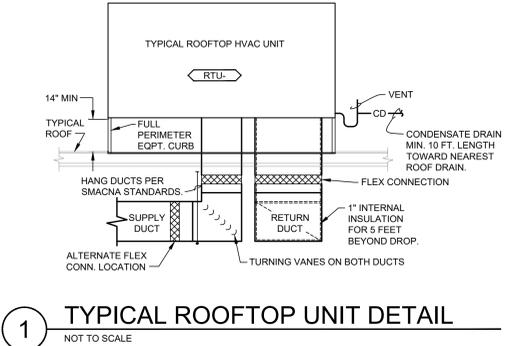
**ECONOMIZER (OUTSIDE, RETURN & EXHAUST DAMPERS):** THE ECONOMIZER WILL HAVE AN ENTHALPY CHANGE/COVER CONTROL WHICH WILL ENABLE THE ECONOMIZER ANYTIME THERE IS A CALL FOR COOLING AND THE AMBIENT ENTHALPY IS BELOW THE CHANGE/COVER SET POINT OF 22 BTULB (ADJUSTABLE). THE OUTDOOR AND RETURN AIR DAMPERS WILL MODULATE TO MAINTAIN A MIXED AIR TEMPERATURE OF 55°F (ADJUSTABLE). WHEN THE ECONOMIZER IS DISABLED AND THE UNIT IS IN OCCUPIED MODE, THE OUTDOOR AIR DAMPER WILL BE SET AT MINIMUM POSITION. WHEN THE ECONOMIZER IS DISABLED AND THE UNIT IS IN UNOCCUPIED MODE, THE OUTDOOR AIR DAMPER WILL BE CLOSED. THE EXHAUST AIR DAMPER IS A GRAVITY DAMPER. THE OUTDOOR AND RETURN AIR DAMPER ACTUATORS WILL BE ELECTRIC.

**CONDENSER FAN CONTROL:** THE CONDENSER FAN MOTORS WILL BE CONTROLLED BY A VARIABLE FREQUENCY DRIVE. THE VARIABLE FREQUENCY DRIVE WILL RAMP UP AND DOWN BASED UPON INPUT SIGNALS COMING FROM PRESSURE TRANSDUCERS MOUNTED ON THE DISCHARGE LINES. THE CONDENSER FAN SPEED WILL MODULATE TO MAINTAIN A CONSTANT HEAD PRESSURE OF 320 PSIG. 320 PSIG. IF AT ANY TIME THE DISCHARGE PRESSURE OF ANY OF THE COMPRESSOR CIRCUITS THAT ARE RUNNING FALLS BELOW 240 PSIG, THE CONTROLLER WILL REDUCE THE CONDENSER FAN SPEED TO MAINTAIN A MINIMUM DISCHARGE PRESSURE OF 240 PSIG AND ALLOW THE HIGHEST DISCHARGE PRESSURE TO RISE ABOVE THE 320 PSIG SETPOINT. THE CONTROLLER WILL CONTINUE TO REDUCE THE CONDENSER FAN SPEED AS NEEDED TO MAINTAIN THE MINIMUM DISCHARGE PRESSURE UNTIL THE DISCHARGE PRESSURE OF ANY OTHER COMPRESSOR CIRCUIT REACHES A MAXIMUM PRESSURE OF 475 PSIG.

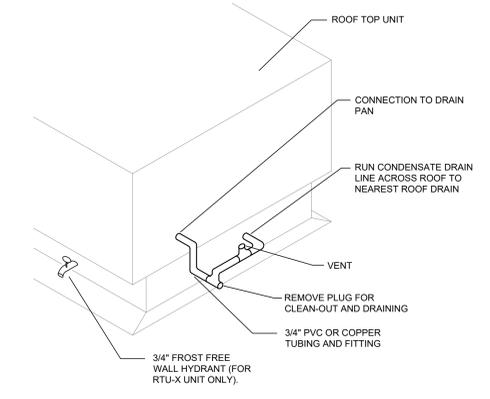
**FILTER PRESSURE DROP:** UNIT IS EQUIPPED WITH A DIFFERENTIAL STATIC PRESSURE SWITCH ACROSS THE FILTER BANK. AN ALARM SHALL BE PROVIDED VIA THE UNIT CONTROLLER TO THE OPERATOR INTERFACE WHEN THE DIFFERENTIAL STATIC PRESSURE EXCEEDS 1.0" W.C. (ADJUSTABLE).

**NIGHT SETBACK:** DURING THE UNOCCUPIED MODE IF A ZONES' TEMPERATURE FALLS BELOW 60F (ADJUSTABLE), THE UNIT CONTROLLER SHALL RESTART THE SUPPLY FAN. THE OUTSIDE AIR DAMPER WILL DRIVE TO COMPLETELY CLOSED POSITION, AND THE RETURN AIR DAMPER WILL DRIVE TO A COMPLETELY OPEN POSITION. THE SUPPLY AIR FAN WILL REMAIN ON UNTIL THE TEMPERATURE REACHES 60F (ADJUSTABLE). DURING THIS MODE HEATING CAPABILITIES SHALL REMAIN ENABLED. DURING THE UNOCCUPIED MODE IF A ZONES' TEMPERATURE RISES ABOVE 80F (ADJUSTABLE), THE UNIT CONTROLLER SHALL RESTART THE SUPPLY FAN. THE OUTSIDE AIR DAMPER WILL DRIVE TO COMPLETELY CLOSED POSITION, AND THE RETURN AIR DAMPER WILL DRIVE TO A COMPLETELY OPEN POSITION. THE SUPPLY AIR FAN WILL REMAIN ON UNTIL THE TEMPERATURE REACHES 80F (ADJUSTABLE). DURING THIS MODE COOLING CAPABILITIES SHALL REMAIN ENABLED.

**MORNING WARM UP:** IN THE MORNING WARM UP MODE, AS DETERMINED BY THE TIME OF DAY SCHEDULE, OUTDOOR AIR DAMPER SHALL BE FULLY CLOSED AND RETURN AIR DAMPER SHALL BE FULLY OPENED UNTIL THE RETURN AIR TEMPERATURE REACHES 65F (ADJUSTABLE). ONCE THE MIXED AIR TEMPERATURE REACHES ITS SET POINT, OUTDOOR AIR DAMPER SHALL BE OPENED TO A MINIMUM VENTILATION POSITION. DURING THIS MODE HEATING CAPABILITIES SHALL REMAIN ENABLED.



1 TYPICAL ROOFTOP UNIT DETAIL  
NOT TO SCALE



2 ROOFTOP UNIT CONDENSATE TRAP DETAIL  
NOT TO SCALE

CONSTRUCTION DOCUMENTS

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CLIENT PROJECT NO.

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MECHANICAL SCHEDULES
BOOKER T. WASHINGTON - HVAC RENOVATION  
707 HOWARD STREET, LEXINGTON, KY, 40508

NO.	REVISIONS DESCRIPTION	DATE	BY	SDD		WLM	
				DESIGNED	DRAWN	REVIEWED	APPROVED

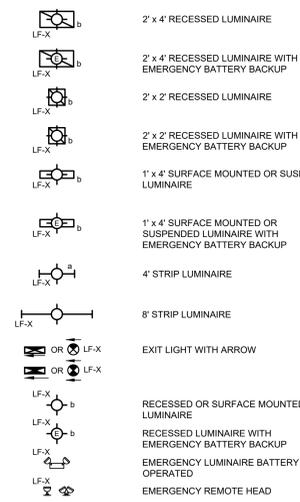
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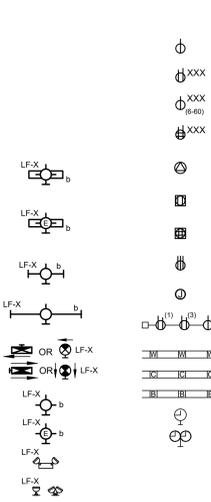
### INTERIOR LIGHTING

SUBSCRIPTS INDICATE THE FOLLOWING:  
 LF-X = INDICATES FIXTURE TYPE  
 E = INDICATES EMERGENCY BATTERY BACKUP  
 a = DENOTES SINGLE SWITCH DESIGNATION  
 ab = DENOTES DUAL SWITCH DESIGNATION

#### CEILING MTD

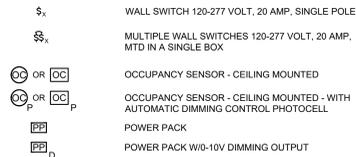


#### WALL MTD

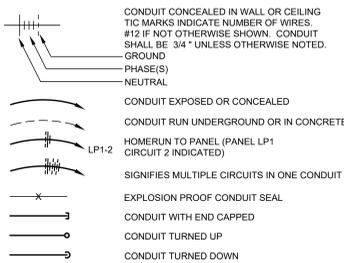


### INTERIOR LIGHTING CONTROLS

SUBSCRIPTS INDICATE THE FOLLOWING:  
 B = SWITCH DESIGNATION  
 D = DIMMER  
 2 = DOUBLE-POLE  
 3 = THREE-WAY  
 4 = FOUR-WAY  
 K = KEY-OPERATED  
 P = PILOT LIGHT  
 T = TIMER  
 L = LOW-VOLTAGE  
 M = MOTOR RATED WITH OVERLOAD PROTECTION  
 IG = ISOLATED GROUND  
 EXP = EXPLOSION PROOF  
 WP = WEATHERPROOF  
 DR = DOOR SWITCH

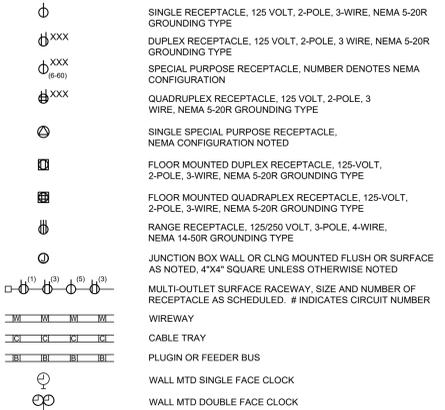


### INTERIOR CONDUIT & WIRE

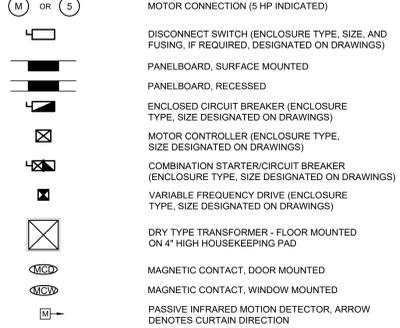


### POWER WIRING DEVICES

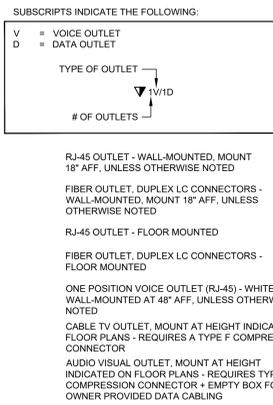
SUBSCRIPTS INDICATE THE FOLLOWING:  
 WP = WEATHER PROOF, IN-USE COVER  
 WR = WEATHER RESISTANT WIRING DEVICE  
 GFCI = GROUND FAULT CIRCUIT INTERRUPTER  
 GF-BF = BLANK FACE GROUND FAULT INTERRUPTER  
 IG = ISOLATED GROUND  
 EXP = EXPLOSION PROOF  
 ACT = ABOVE COUNTER TOP  
 TR = TAMPER RESISTANT  
 AFCI = ARC FAULT INTERRUPTER  
 TVSS = TRANSIENT VOLTAGE SURGE SUPPRESSOR



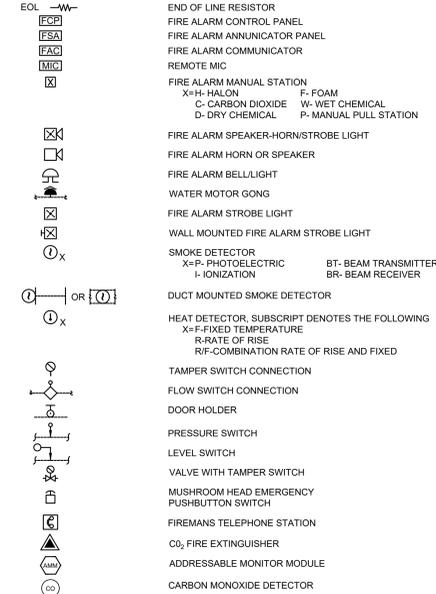
### POWER DEVICES



### COMMUNICATION



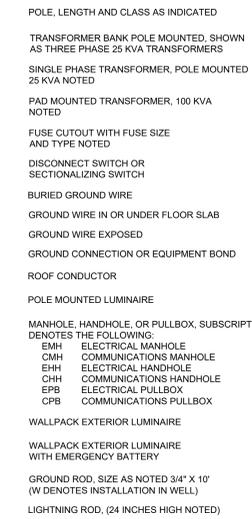
### FIRE ALARM/SUPPRESSION SYSTEM DEVICES



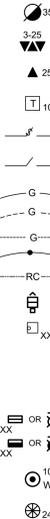
#### EXISTING



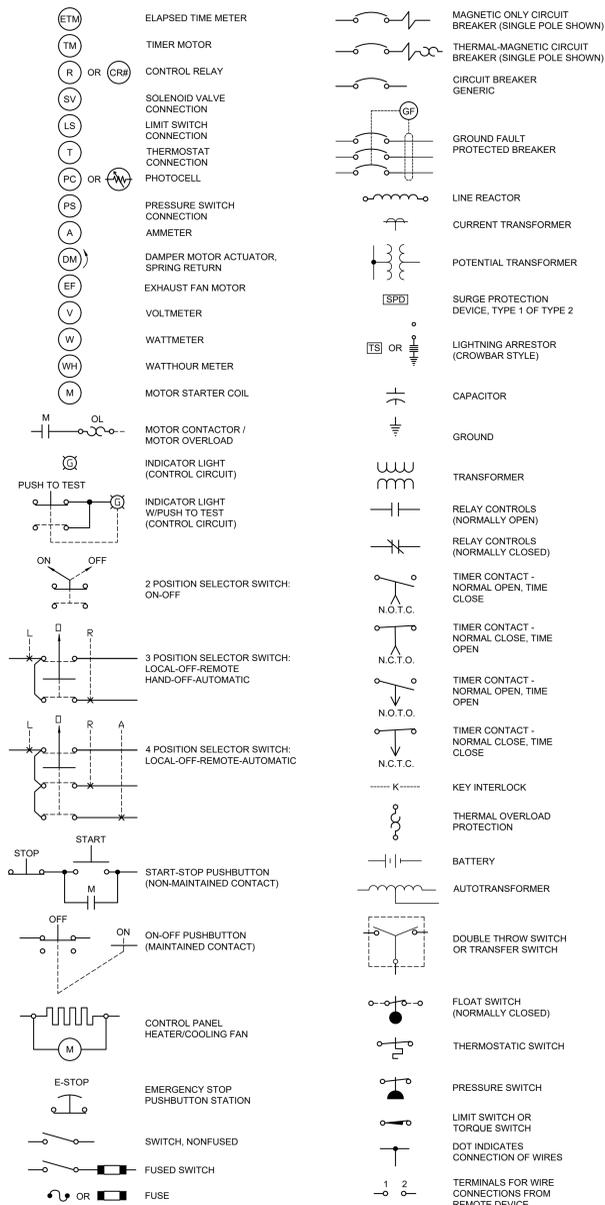
### EXTERIOR



#### NEW



### SINGLE LINE DIAGRAMS/CONTROLS



### GENERAL NOTES:

- THE MINIMUM STANDARD FOR ALL WORK SHALL BE THE 2015 EDITION OF THE INTERNATIONAL BUILDING CODE WITH THE 2018 IN STATE AMENDMENTS AND THE NATIONAL ELECTRICAL CODE (NEC).
- ALL ELECTRICAL WORK SHALL BE PERFORMED BY AN IN-STATE LICENSED ELECTRICIAN.
- ALL PERMITS NEEDED TO LEGALLY PERFORM THE ELECTRICAL WORK SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO START OF WORK. COST OF PERMITTING IS BY THE CONTRACTOR.
- AT COMPLETION OF THE WORK, A CERTIFICATE OF COMPLIANCE FROM THE LOCAL AHJ OVER THE ELECTRICAL WORK SHALL BE PROVIDED TO THE ENGINEER AND OWNER. COST OF ELECTRICAL INSPECTION IS BY THE CONTRACTOR.
- ALL MATERIALS USED IN THE PROJECT GENERALLY SHALL BE NEW AND UNUSED, UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL NEW MATERIALS SHALL BE LISTED BY UL OR OTHER ACCEPTABLE LISTING AGENCY, WHERE A LISTING EXISTS.
- THE CONTRACTOR SHALL VISIT THE SITE(S) PRIOR TO BIDDING TO FAMILIARIZE THEMSELVES WITH PROJECT REQUIREMENTS AND EXISTING CONDITIONS.
- FIRESTOP ALL NEW CONDUIT INSTALLED THROUGH EXISTING OR NEW FIRE RATED ASSEMBLIES.
- SHOP DRAWINGS SHALL BE SUBMITTED ON ALL ELECTRICAL MATERIALS AND EQUIPMENT FOR ACCEPTANCE PRIOR TO PURCHASE BY THE CONTRACTOR.
- WHEN AN ITEM DEMOLISHED IS REMOVED, REMOVE ALL CONCRETE PADS, FASTENERS, CONDUIT AND WIRING. SCARIFY SURFACE AND RESTORE TO MATCH EXISTING SURROUNDING SURFACE, INCLUDING PAINTING TO MATCH.
- ALL NEW WIRING SHALL BE ENCLOSED IN AN APPROVED RACEWAY SYSTEM. OPEN WIRING IS PROHIBITED.
- CIRCUIT BREAKERS USED FOR HVAC EQUIPMENT LOADS SHALL BE HACR TYPE.
- ENSURE DEDICATED ELECTRICAL SPACE IS PROVIDED ABOVE AND BELOW ELECTRICAL PANELS IN ACCORDANCE WITH NEC ARTICLE 110.26.
- COORDINATE ALL MOTOR STARTERS, FEEDERS AND DISCONNECT SWITCHES FOR HVAC AND OTHER UTILIZATION EQUIPMENT ACTUALLY PROVIDED IN ACCEPTED SHOP DRAWINGS.
- IN ORDER TO COMPLY WITH OSHA REQUIREMENTS, NO OPERATOR DEVICE OF ANY PANEL OR DISCONNECT OR MOTOR CONTROL SHALL BE HIGHER THAN 6'-6" AFF.
- PROVIDE AN EXTERIOR RATED SERVICE RECEPTACLE WITHIN 25 FEET HORIZONTALLY OF ANY EXTERIOR OR ROOFTOP HVAC OUTDOOR UNITS (HEATING OR AIR CONDITIONING ONLY).

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ELECTRICAL LEGEND AND GENERAL NOTES  
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DESIGNED	CTC
DRAWN	STAFF
REVIEWED	CTC
APPROVED	CTC

REVISIONS  
 NO. | DATE | BY | DESCRIPTION

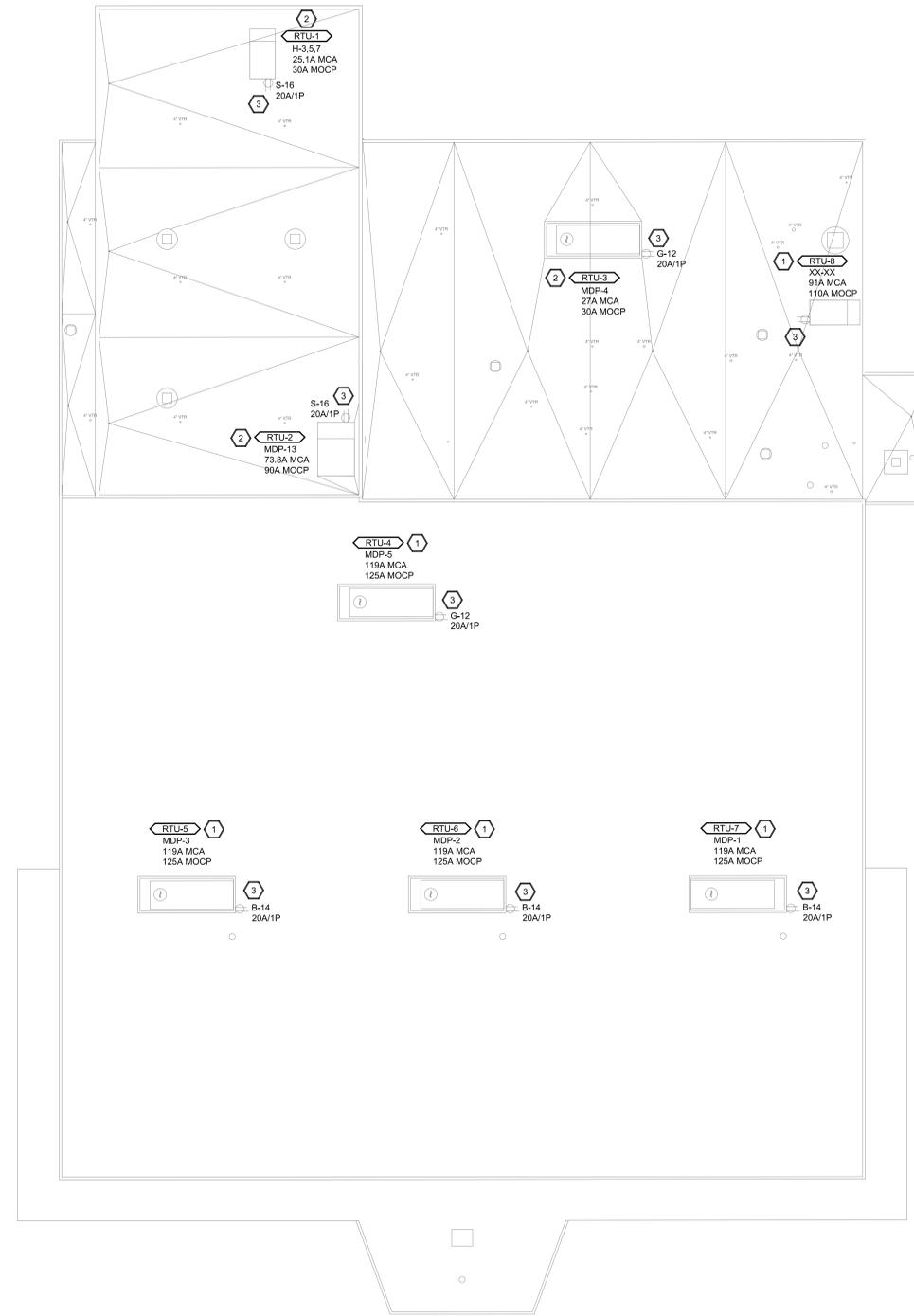
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 SHEET NO: E-001

CONSTRUCTION DOCUMENTS



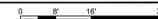
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### ROOF PLAN - ELECTRICAL DEMOLITION

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



### GENERAL NOTES:

- FOR LOCATIONS WHERE EXISTING EQUIPMENT IS BEING DISCONNECTED AND REMOVED, CONTRACTOR SHALL MAINTAIN INTEGRITY OF EXISTING POWER AND FIRE ALARM WIRING FOR RECONNECTION TO NEW UNIT AND SMOKE DETECTION EQUIPMENT. NOTE THAT IN CERTAIN INSTANCES EXISTING WIRING MAY REQUIRE REPLACEMENT. IN THESE LOCATIONS EXISTING CONDUIT MAY BE REUSED FOR NEW WIRE INSTALLATION.
- REFER TO SHEET ED101 FOR LOCATION OF EXISTING SWITCHBOARDS, PANELBOARDS AND FIRE ALARM MAIN CONTROL PANEL.
- DEMOLITION PLANS HAVE BEEN DEVELOPED FROM SITE VISITS AND EXISTING BUILDING DRAWINGS. SOME DEVICES MAY NOT BE INDICATED.
- IT SHALL BE THE RESPONSIBILITY OF ALL CONTRACTORS WHO SUBMIT BIDS FOR THIS PROJECT TO VISIT THE JOB PREMISES PRIOR TO BIDDING IN ORDER THAT THEY MAY DETERMINE THE TYPE, QUANTITY, LOCATIONS AND ANY HARDSHIPS INVOLVED WITH THE REMOVAL OF EQUIPMENT.
- CONTRACTOR UNDER THIS DIVISION IS FINANCIALLY RESPONSIBLE TO REPAIR AND PATCH FLOORS, WALLS, CEILING AND ROOF TO MATCH EXISTING CONDITION WHERE DEMOLITION WORK HAS BEEN DONE. COORDINATE ALL WORK WITH OWNER/ENGINEER.
- ITEMS TO BE DEMOLISHED ARE INDICATED WITH A HATCH PATTERN.
- REMOVE ALL WIRING AND EXPOSED CONDUIT ASSOCIATED WITH DEMOLISHED ELECTRICAL EQUIPMENT / DEVICES UNLESS CIRCUIT IS INDICATED TO BE REUSED. REMOVE BACK TO SOURCE. MAINTAIN ALL ELECTRICAL CONNECTIONS TO DEVICES AND EQUIPMENT THAT REMAIN.

### KEYNOTES:

- EXISTING ROOFTOP UNIT TO BE DISCONNECTED AND REMOVED ALONG WITH EXISTING DUCT SMOKE DETECTOR. EXISTING POWER AND FIRE ALARM WIRING TO REMAIN FOR RECONNECTION TO NEW EQUIPMENT.
- EXISTING ROOFTOP UNIT TO BE DISCONNECTED AND REMOVED ALONG WITH EXISTING DUCT SMOKE DETECTOR. EXISTING POWER SUPPLY WIRING AND CONDUIT TO BE REPLACED. EXISTING FIRE ALARM WIRING TO REMAIN FOR RECONNECTION TO NEW DEVICE.
- EXISTING CONVENIENCE OUTLET TO BE DISCONNECTED AND REMOVED. EXISTING POWER WIRING AND CONDUIT TO REMAIN. REWORK/EXTEND EXISTING CONDUIT AND WIRE TO NEW CONVENIENCE OUTLET. SEE SHEET E-102 FOR NEW WORK.

## ROOF PLAN - ELECTRICAL DEMOLITION

BOOKER T. WASHINGTON - HVAC RENOVATION  
707 HOWARD STREET, LEXINGTON, KY, 40508

NO.	REVISIONS DESCRIPTION	DESIGNED		BY		DATE	
		CTC	BY	STAFF	REVIEWED	CTC	APPROVED

DATE: JANUARY 2024  
SCALE: 1/16" = 1'0"  
SHEET NO.

ED102

GRW PROJECT NO. 4973-05

CLIENT PROJECT NO.

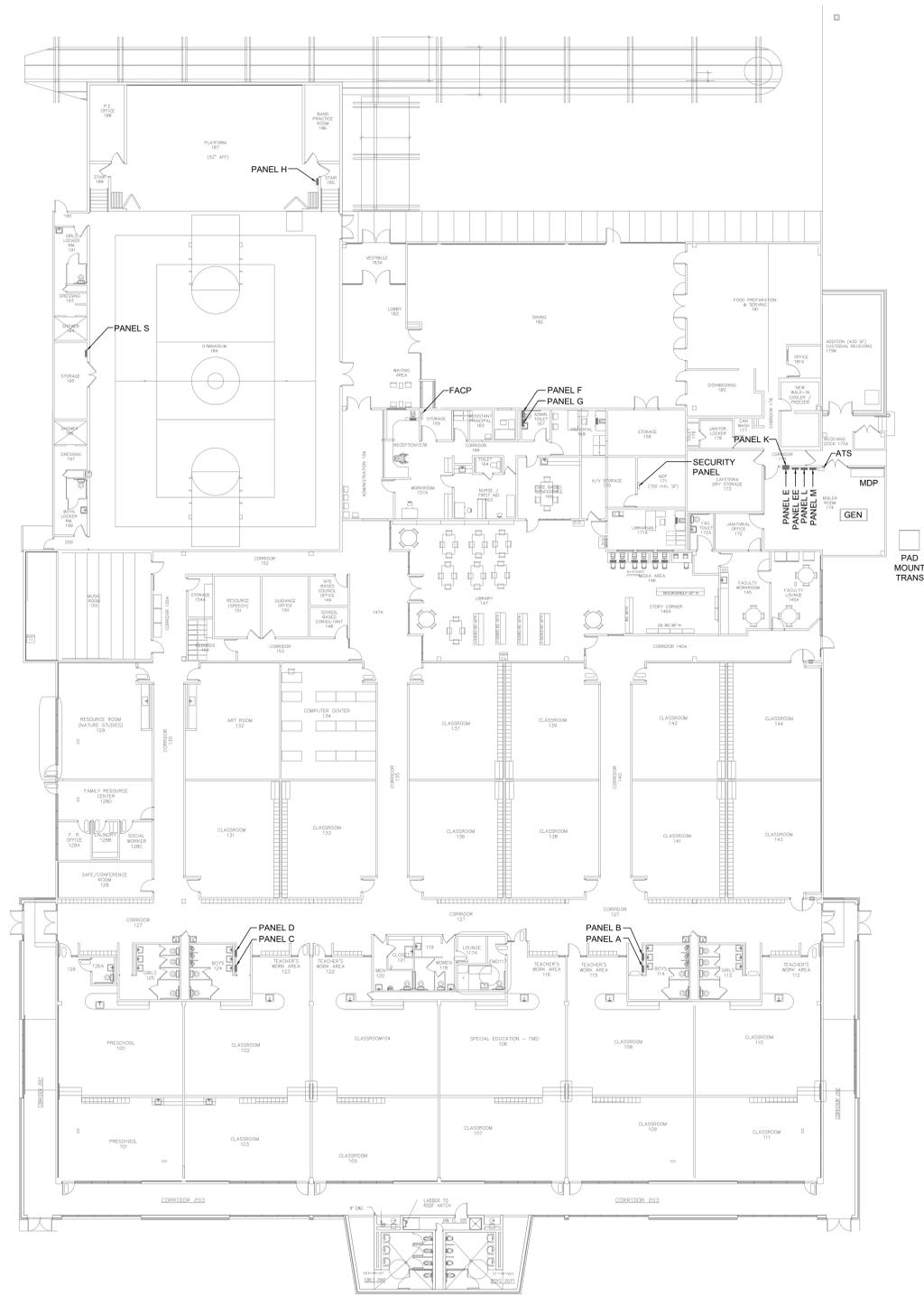
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CONSTRUCTION DOCUMENTS

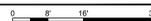
GENERAL NOTES:

- 1. DUCT SMOKE DETECTORS SHALL BE FURNISHED FOR ALL AIR HANDLING EQUIPMENT WITH DESIGN CAPACITY GREATER THAN 2000 CFM. DUCT SMOKE DETECTORS SHALL BE INSTALLED IN RETURN AIR SYSTEMS UPSTREAM OF ANY FILTERS, EXHAUST OR OUTDOOR AIR CONNECTIONS. UPON ACTIVATION, THE FIRE ALARM SYSTEM SHALL SHUTDOWN ALL OPERATIONAL CAPABILITIES OF THE AIR HANDLING EQUIPMENT.



FIRST FLOOR PLAN - ELECTRICAL NEW WORK

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

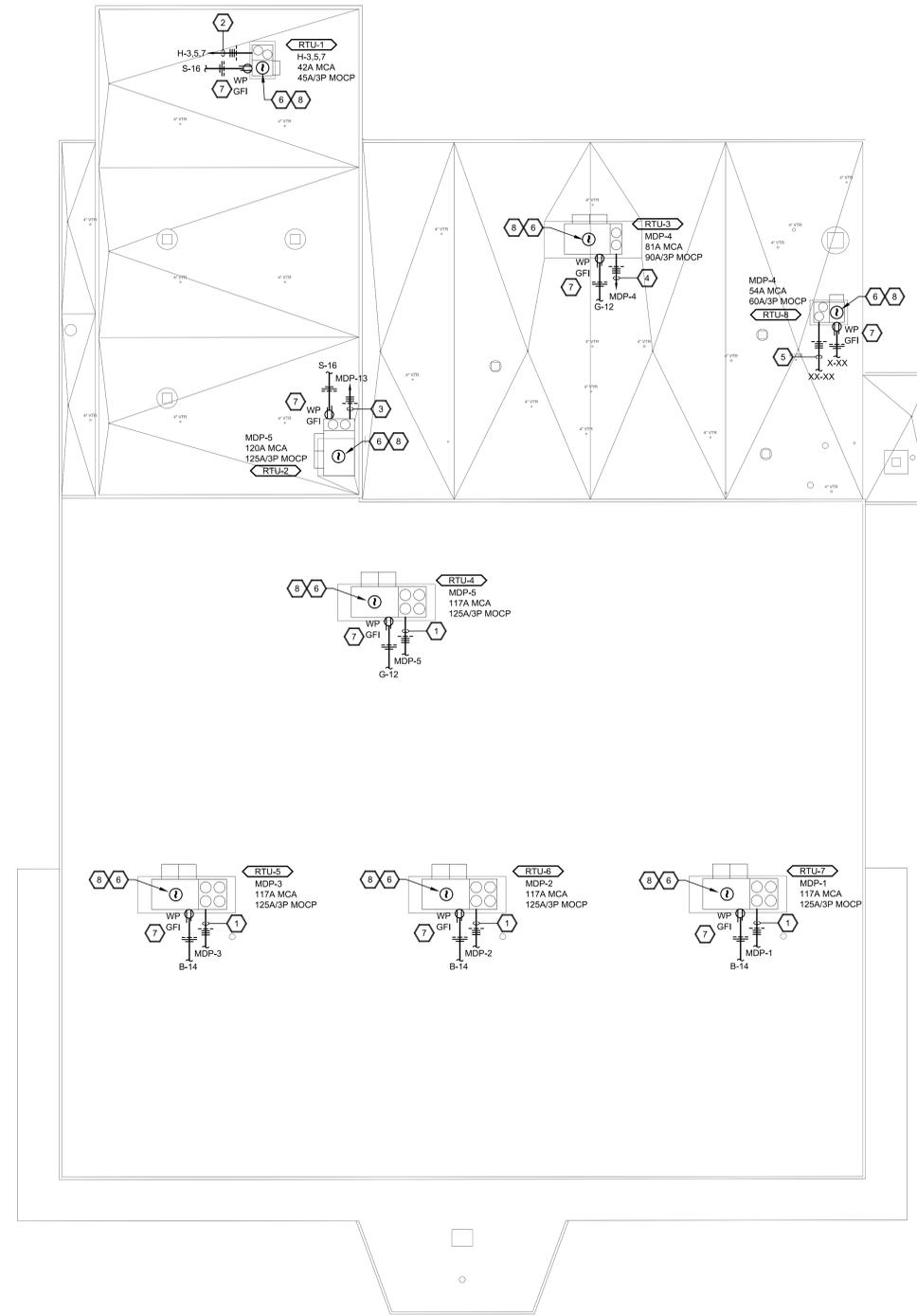


FIRST FLOOR PLAN - ELECTRICAL NEW WORK

BOOKER T. WASHINGTON - HVAC RENOVATION  
707 HOWARD STREET, LEXINGTON, KY, 40508

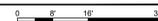
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SHEET NO.



**ROOF PLAN - ELECTRICAL NEW WORK**

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



**GENERAL NOTES:**

- REFER TO SHEET E-102 FOR LOCATION OF EXISTING DISTRIBUTION PANELS.
- DUCT SMOKE DETECTORS SHALL BE FURNISHED FOR ALL AIR HANDLING EQUIPMENT WITH DESIGN CAPACITY GREATER THAN 2000 CFM. DUCT SMOKE DETECTORS SHALL BE INSTALLED IN RETURN AIR SYSTEMS UPSTREAM OF ANY FILTERS, EXHAUST OR OUTDOOR AIR CONNECTIONS. UPON ACTIVATION, THE FIRE ALARM SYSTEM SHALL SHUTDOWN ALL OPERATIONAL CAPABILITIES OF THE AIR HANDLING EQUIPMENT.

**SHEET KEYNOTES:**

- NEW ROOF TOP UNIT. RECONNECT EXISTING POWER SUPPLY CIRCUIT.
- NEW ROOF TOP UNIT. FURNISH AND INSTALL (3) #8 AND (1) #10 GND IN 3/4" C FROM NEW ROOF TOP UNIT POWER ENTRANCE LOCATION TO NEW 45A/3P CIRCUIT BREAKER INSTALLED IN EXISTING PANELBOARD H. SEE SHEET E-101 FOR LOCATION. CONTRACTOR MAY REUSE EXISTING CONDUIT IF ADEQUATE SIZE.
- NEW ROOF TOP UNIT. FURNISH AND INSTALL (3) #1 AND (1) #8 GND IN 1-1/2" C FROM NEW ROOF TOP UNIT POWER ENTRANCE LOCATION TO NEW 125A/3P CIRCUIT BREAKER INSTALLED IN EXISTING MAIN DISTRIBUTION SWITCHBOARD MDP. SEE SHEET E-101 FOR LOCATION. CONTRACTOR MAY REUSE EXISTING CONDUIT IF ADEQUATE SIZE.
- NEW ROOF TOP UNIT. FURNISH AND INSTALL (3) #3 AND (1) #8 GND IN 1-1/4" C FROM NEW ROOF TOP UNIT POWER ENTRANCE LOCATION TO NEW 90A/3P CIRCUIT BREAKER INSTALLED IN EXISTING MAIN DISTRIBUTION SWITCHBOARD MDP. SEE SHEET E-101 FOR LOCATION. CONTRACTOR MAY REUSE EXISTING CONDUIT IF ADEQUATE SIZE.
- NEW ROOF TOP UNIT. RECONNECT EXISTING POWER SUPPLY CIRCUIT. EXISTING BREAKER IN XXXX TO BE REPLACED WITH NEW 60A/3P CIRCUIT BREAKER. SEE SHEET E-101 FOR LOCATION.
- NEW DUCT SMOKE DETECTOR BY FIRE ALARM CONTRACTOR. INSTALL IN RETURN AIR SYSTEM OF NEW MULTI-ZONE ROOF TOP UNIT. FIRE ALARM CONTRACTOR TO RECONNECT EXISTING FIRE ALARM SIGNALING LINE CIRCUIT TO NEW DUCT SMOKE DETECTOR AND INSTALL CONTROL MONITORING MODULES AS REQUIRED FOR CORRECT OPERATION. PROVIDE AIR HANDLING UNIT INTERLOCK WIRING AS REQUIRED TO SHUTDOWN ALL OPERATIONAL CAPABILITIES OF THE AIR HANDLING EQUIPMENT UPON ACTIVATION OF SMOKE DETECTOR.
- NEW GFI RECEPTACLE WITH WEATHERPROOF WHILE-IN-USE COVER. CONNECT/EXTEND EXISTING CIRCUIT TO NEW DEVICE AS REQUIRED.
- FURNISH AND INSTALL NEW REMOTE TEST STATION FOR DUCT SMOKE DETECTOR IN ROOM BELOW. PROVIDE SINGLE-GANG BOX AND MOUNT DEVICE FLUSH IN CEILING TILE AND INSTALL DESCRIPTIVE NAMEPLATE. FURNISH AND INSTALL FIRE ALARM WIRING IN 3/4" C.

**ROOF PLAN - ELECTRICAL NEW WORK**

BOOKER T. WASHINGTON - HVAC RENOVATION  
707 HOWARD STREET, LEXINGTON, KY, 40508

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