MECHANICAL SPECIFICATIONS

PART 1 GENERAL

1.1 SCOPE OF WORK: THESE DRAWINGS AND SPECIFICATIONS DESCRIBE THE SCOPE OF WORK REQUIRED FOR PROJECT MECHANICAL HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL REQUIRED FOR COMPLETE, FULLY FUNCTIONING MECHANICAL SYSTEMS COMPLYING WITH THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.

1.2 CONTRACTOR: THE WORD "CONTRACTOR" AS USED HEREIN SHALL MEAN THE HVAC INSTALLER UNLESS OTHERWISE QUALIFIED.

1.3 DRAWINGS: DRAWINGS ARE DIAGRAMMATIC AND MAY NOT COMPLETELY DESCRIBE EVERY DETAIL OF THE INSTALLATION. HOWEVER, CONTRACTOR IS RESPONSIBLE FOR FURNISHING COMPLETE SYSTEMS INCLUDING ALL REQUIRED EQUIPMENT AND ACCESSORIES TO OBTAIN FULLY FUNCTIONING HVAC SYSTEMS.

1.4 CODE COMPLIANCE: COMPLY WITH THE LATEST EDITIONS OF THE FOLLOWING STANDARDS AND CODES, INSOFAR AS THEY APPLY:

A. NORTH CAROLINA STATE BUILDING CODE, LATEST EDITION AND REVISIONS

B. LOCAL JURISDICTION REQUIREMENTS: INCLUDE ALL WORK TO COMPLY WITH CODES WHETHER INDICATED ON DRAWINGS OR NOT. NOTIFY ENGINEER OF DISCREPANCIES BETWEEN DRAWINGS AND CODES PRIOR TO BEGINNING WORK.

1.5 PERMITS AND INSPECTIONS: OBTAIN ALL PERMITS, LICENSES, INSPECTIONS, ETC., REQUIRED FOR THE WORK AND PAY FOR SAME. FURNISH A FINAL CERTIFICATE OF INSPECTION AND APPROVAL FROM THE AUTHORITY HAVING JURISDICTION PRIOR TO ACCEPTANCE OF THE WORK.

1.6 MANUFACTURER'S RECOMMENDATIONS: INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

1.7 WORKMANSHIP: UTILIZE SKILLED MECHANICS TO OBTAIN A HIGH QUALITY PROFESSIONAL FINISH INSTALLATION WHEN COMPLETED. WORK OF UNACCEPTABLE QUALITY SHALL BE REMOVED AND REWORKED AT NO ADDITIONAL COST. ENGINEER SHALL BE THE JUDGE OF WORKMANSHIP AND THEIR OPINION WILL BE FINAL. IN ADDITION, ANY EXISTING CONSTRUCTION DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER BY THE CONTRACTOR AT NO ADDITIONAL COST.

1.8 SUPERVISION: PROVIDE SKILLED SUPERINTENDENTS TO SUPERVISE THE WORK FROM THE BEGINNING TO COMPLETION AND FINAL INSPECTION.

1.9 PROGRESS OF WORK: PERFORM WORK IN ACCORDANCE WITH SCHEDULE AND REQUIREMENTS OF THE OWNER. UNDER NO CIRCUMSTANCES SHALL THIS CONTRACTOR DELAY THE OVERALL PROJECT SCHEDULE.

1.10 COORDINATION: COORDINATE MECHANICAL WORK WITH THE WORK OF OTHER TRADES. LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE UNLESS SPECIFICALLY DIMENSIONED. LAYOUT MECHANICAL WORK SO AS NOT TO INTERFERE WITH THE WORK OF OTHER TRADES. VERIFY ACTUAL BUILDING STRUCTURE PRIOR TO DUCT FABRICATION AND ADJUST ARRANGEMENT AS REQUIRED. INCLUDE ALL OFFSETS IN DUCTS, FITTINGS, PIPING, ETC. AS REQUIRED TO PROPERLY INSTALL EQUIPMENT.

1.11 EQUIPMENT LOCATIONS: DETERMINE EXACT EQUIPMENT AND MATERIALS LOCATIONS TO PROVIDE BEST ARRANGEMENT AND TO FACILITATE PROPER MAINTENANCE AND SERVICING OF EQUIPMENT.

1.12 LISTING AND LABELING: ALL EQUIPMENT SHALL BE LABELED OR LISTED BY UL OR OTHER APPROVED TESTING AGENCY WHERE REQUIRED.

1.13 STORAGE SPACE: CONSULT WITH THE OWNER REGARDING JOB SITE STORAGE FOR MECHANICAL MATERIALS TO BE INSTALLED UNDER THIS PROJECT. STORAGE SPACE MUST BE SECURED AND CONTRACTOR'S REPRESENTATIVE MUST BE ON JOB BEFORE ANY MATERIAL MAY BE RECEIVED.

1.14 CLEANUP: REMOVE ALL DEBRIS GENERATED IN THE ACCOMPLISHMENT OF WORK UNDER THIS PROJECT. CLEAN, REPLACE OR REPAIR ALL SURFACES SOILED OR DAMAGED DURING THE COURSE OF THE WORK. REMOVE DEBRIS DAILY SO TO MAINTAIN SAFE WORKING CONDITIONS.

1.15 SUBMITTALS: SUBMIT ONE (1) ELECTRONIC COPY OF DESCRIPTIVE DATA FOR MECHANICAL EQUIPMENT AND MATERIALS INCLUDING GRILLES AND DAMPERS FOR APPROVAL BY THE ENGINEER. CLEARLY IDENTIFY ALL ITEMS.

1.16 OPERATING AND MAINTENANCE MANUALS: SUBMIT TWO COPIES OF COMPLETE OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT, INCLUDING NECESSARY CUT SHEETS, CHARTS, WRITTEN INSTRUCTIONS, WIRING DIAGRAMS, FINAL AS-BUILT DRAWINGS WITH BALANCED AIRFLOWS INDICATED, ETC. BIND IN SUITABLE HARD BACK RING BINDERS, PROPERLY INDEXED, AND DELIVER TO THE OWNER PRIOR TO BUILDING OCCUPANCY. IN ADDITION, AFFIX A FOLDER WITH TYPICAL "OWNER'S INSTRUCTIONS" AND "MAINTENANCE INFORMATION" INSIDE THE MECHANICAL EQUIPMENT AS APPLICABLE. THE FOLDER SHALL ALSO INCLUDE A COMPLETE STARTUP LOG FOR THE EQUIPMENT.

1.17 RECORD DRAWINGS: MAINTAIN ONE SET OF "RED-LINED" RECORD DRAWINGS ON SITE AT ALL TIMES AND PROVIDE DRAWINGS TO ENGINEER PRIOR TO FINAL INSPECTION.

1.18 WARRANTY: WARRANTY THE MATERIALS AND WORKMANSHIP COVERED BY THESE DRAWINGS AND SPECIFICATIONS FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. REPAIR AND/OR REPLACE ANY PARTS OF ANY SYSTEM THAT MAY PROVE TO BE DEFECTIVE AT NO ADDITIONAL COST TO THE OWNER WITHIN THE WARRANTY PERIOD. PROVIDE 5 YEAR WARRANTY FOR ALL AIR CONDITIONING COMPRESSORS. FURNISH WARRANTY CERTIFICATES FOR ALL MECHANICAL EQUIPMENT. WARRANTY TO COMMENCE UPON DATE OF ACCEPTANCE OF WORK BY OWNER.

1.19 EXISTING BUILDINGS AND CONSTRUCTION

A. WORK UNDER THIS CONTRACT IS TO BE PERFORMED IN AN EXISTING BUILDING. BUILDING LAYOUT INDICATED IS DEVELOPED FROM EXISTING RECORD DOCUMENTS AND LIMITED FIELD VERIFICATION FOR THE PURPOSES OF DESCRIBING THE WORK. VERIFY ALL EXISTING CONDITIONS AND ADJUST WORK AS REQUIRED TO SUIT ACTUAL FIELD CONDITIONS.

B. PERFORM ALL WORK IN ACCORDANCE WITH SAFETY REGULATIONS.

C. DO NOT CUT ANY STRUCTURAL MEMBERS WITHOUT EXPRESS WRITTEN INSTRUCTIONS FROM ENGINEER. PROVIDE CUTTING AND PATCHING FOR EXISTING FINISHES AS REQUIRED.

D. COORDINATE INSTALLATION OF NEW MECHANICAL SYSTEMS WITH EXISTING BUILDING SYSTEMS. ADJUST ARRANGEMENTS AS REQUIRED TO ACCOMMODATE INTERFERENCES.

PART 2 MATERIALS

2.1 EQUIPMENT

A. MODELS AS SCHEDULED ON THE DRAWINGS. MANUFACTURERS INDICATED ARE INTENDED TO ESTABLISH THE QUALITY AND TYPE OF EQUIPMENT DESIRED. COMPARABLE EQUIPMENT WILL BE CONSIDERED FOR APPROVAL BY THE ARCHITECT/ENGINEER

B. INCLUDE ALL ACCESSORIES INDICATED OR AS RECOMMENDED BY THE MANUFACTURER FOR PROPER OPERATION.

2.2 DUCTWORK

A. BRANCH DUCTS: PROVIDE MANUFACTURED TAKE-OFF FITTINGS WITH EXTRACTOR AND VOLUME DAMPER WITH LOCKING QUADRANT OPERATOR AND INSULATION GUARD, GENERAL ENVIRONMENT CORPORATION OR EQUAL, FOR ALL BRANCH RUNOUTS TO SUPPLY REGISTERS AND DIFFUSERS. UNLESS OTHERWISE NOTED, MATCH SUPPLY BRANCH DUCT SIZE TO DIFFUSER SIZE.

B. ELBOWS: ALL SQUARE BENDS OR ELBOW FITTINGS SHALL BE FITTED WITH APPROVED TYPE DOUBLE THICKNESS TURNING VANES.

C. FLEXIBLE DUCT: FACTORY INSULATED, R-8, MINIMUM, UL 181 CLASS 1. MAXIMUM FLEX DUCT RUNOUT LENGTH NOT TO EXCEED 5' UNLESS OTHERWISE NOTED. INSTALL AND SUPPORT FLEXIBLE DUCTS IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

D. FIRE DAMPERS: PROVIDE SUITABLY LISTED FIRE DAMPERS IN DUCTS PENETRATING FIRE RATED CONSTRUCTION WHERE REQUIRED BY CODE. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FIRE RATED CONSTRUCTION.

E. PROVIDE REMOVABLE ACCESS PANELS IN CEILINGS AND ACCESS DOORS (WITH AIR TIGHT GASKETS) IN DUCTWORK AS REQUIRED FOR ACCESS TO DAMPERS OR OTHER DUCT MOUNTED EQUIPMENT.

F. PLENUMS: USE CODE APPROVED MATERIALS AND METHODS FOR ALL MECHANICAL WORK INSTALLED IN PLENUMS.

2.3 AIR DISTRIBUTION

A. DIFFUSERS AND REGISTERS: MODELS AS SCHEDULED ON THE DRAWINGS. MANUFACTURERS INDICATED ARE INTENDED TO ESTABLISH THE QUALITY AND TYPE OF EQUIPMENT DESIRED. COMPARABLE EQUIPMENT WILL BE CONSIDERED FOR APPROVAL BY THE ENGINEER. INCLUDE FINISH AND ACCESSORIES AS INDICATED.

2.4 INSULATION

A. DUCT INSULATION: R-8 MINIMUM, 2" FIBERGLASS BLANKET INSULATION, ASTM C553, TYPE II, 0.75 PCF CLASS F-1, ASTM 84E FLAME SPREAD/SMOKE DEVELOPED RATING LESS THAN 25/50. PROVIDE WITH FACTORY APPLIED ALL-PURPOSE, LAMINATED GLASS-FIBER-REINFORCED, FLAME-RETARDANT KRAFT PAPER AND ALUMINUM FOIL JACKET. INSTALL ON ALL CONCEALED HVAC SUPPLY, RETURN, MAKE-UP AIR DUCTS AND PLENUMS.

2.5 CONTROLS

A. TEMPERATURE CONTROLS: EXISTING

2.6 SUPPORTS

A. HANGERS, SUPPORTS, AND ANCHORS: SUPPORT AND FASTEN ALL DUCTWORK, PIPING, EQUIPMENT, ETC., SECURELY IN PLACE USING APPROVED STEEL HANGERS AND FASTENERS. CHAIN, STRAP, PERFORATED STRAP, WIRE HANGERS, OR WOOD PLUGS ARE PROHIBITED.

B. INCLUDE STEEL SUPPORTS, ANCHORS, FRAMES, BRACING, PLATES, BOLTS, NUTS, WASHERS, ETC. INCIDENTAL TO INSTALLATION OF WORK.

C. PROVIDE AUXILIARY STRUCTURAL MEMBERS WHERE REQUIRED BETWEEN MEMBERS OF THE STRUCTURE.

PART 3 EXECUTION

3.1 PREPARATION: REVIEW CONSTRUCTION DOCUMENTS AND VERIFY ARRANGEMENT WITH FIELD CONDITIONS. COORDINATE PROPOSED MECHANICAL EQUIPMENT AND SYSTEMS WITH ASSOCIATED WORK OF OTHER TRADES.

3.2 INSTALLATION: INSTALL ALL MECHANICAL WORK IN ACCORDANCE WITH CODE, MANUFACTURER'S RECOMMENDATIONS AND GOOD INDUSTRY PRACTICE. ARRANGE WORK TO ALLOW EASY ACCESS TO EQUIPMENT FOR SERVICE AND MAINTENANCE.

3.3 DUCTWORK: LAYOUT DUCTWORK TO AVOID INTERFERENCES AND MAXIMIZE USABLE SPACE IN THE BUILDING.

3.4 FIRE DAMPERS: INSTALL STRICTLY IN ACCORDANCE TO MANUFACTURER INSTRUCTIONS TO MAINTAIN RATING. KEEP ONE (1) HARD COPY OF INSTRUCTIONS ON SITE FOR INSPECTOR REVIEW.

3.5 DUCT INSULATION: INSTALL BLANKET INSULATION TIGHT AND SMOOTH. OVERLAP JOINTS 3 INCHES. SEAL JOINTS, BREAKS, AND PUNCTURES WITH VAPOR BARRIER COMPOUND.

3.6 HANGERS AND SUPPORTS: HANG AND SUPPORT EQUIPMENT, DUCTS AND PIPING IN A SUBSTANTIAL MANNER FROM THE BUILDING STRUCTURE. SPACE HANGERS IN ACCORDANCE WITH CODE AND SO AS TO AVOID EXCESS DEFLECTION OR SAG. PROVIDE SEISMIC DESIGN HANGERS WHERE REQUIRED. NO PORTION OF THE STRUCTURE SHALL BE OVER STRESSED BY THE HANGING OPERATION OR BY THE FINAL SUPPORTS. ATTACHMENTS DEEMED INADEQUATE BY THE ENGINEER SHALL BE REWORKED AS DIRECTED. PROVIDE VIBRATION ISOLATION FOR MOVING MACHINERY.

3.7 TESTING AND BALANCING: BALANCE AIR FLOWS TO OBTAIN AIR QUANTITIES SHOWN ON DRAWINGS. ADJUST DAMPERS FOR ALL AIR OUTLETS AND RECORD VELOMETER READINGS WHICH CORRESPOND TO DESIGN FLOW RATES AT EACH OUTLET. RECORD DESIGN AND FINAL READINGS ON APPROVED FORMS. SUBMIT TWO COPIES FOR REVIEW AND APPROVAL BY ENGINEER. UPON COMPLETION OF ALL BALANCING AND TESTING, SCHEDULE A TIME FOR ENGINEER TO PERFORM RANDOM CHECKING OF TYPICAL OUTLETS. CONTRACTOR SHALL PROVIDE TECHNICIANS AND MEASURING DEVICES FOR THIS TESTING.

3.8 CLEAN-UP: CLEAN ALL EQUIPMENT AND DEVICES AND INSTALL NEW FILTERS IN EQUIPMENT IMMEDIATELY PRIOR TO OWNER ACCEPTANCE AND OCCUPANCY.

DIFFUSERS, REGISTERS AND GRILLES SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	TYPE	SERVICE	NECK SIZE (IN.)	MODULE SIZE (IN.)	MATERIAL	FINISH	MOUNTING	NOTES	ACCESSORIES
S1	PRICE	AMD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER	SUPPLY	6Ø	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3,4,5	C
S2	PRICE	AMD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER	SUPPLY	8Ø	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3,4,5	C
S3	PRICE	AMD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER	SUPPLY	10Ø	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3,4,5	C
S4	PRICE	SDS100	METALAIRE, TITUS	LINEAR SLOT DIFFUSER, 1" SLOT, 2-SLOT, 48" LONG	SUPPLY	10Ø	-	ALUMINUM	WHITE	T-BAR	1,2,3,4	A,B
S5	PRICE	SDS100	METALAIRE, TITUS	LINEAR SLOT DIFFUSER, 1" SLOT, 2-SLOT, 48" LONG	SUPPLY	10Ø	-	ALUMINUM	WHITE	T-BAR	1,2,3,4	A,B
S6	PRICE	SDS100	METALAIRE, TITUS	LINEAR SLOT DIFFUSER, 1" SLOT, 2-SLOT, 48" LONG	SUPPLY	10Ø	-	ALUMINUM	BLACK	CEILING SURFACE	1,2,3,4	A,B
S7	PRICE	SDS100	METALAIRE, TITUS	LINEAR SLOT DIFFUSER, 1" SLOT, 2-SLOT, 24" LONG	SUPPLY	6Ø	-	ALUMINUM	WHITE	CEILING SURFACE	1,2,3,4	A,B
S8	PRICE	620	METALAIRE, TITUS	LOUVER FACE DIFFUSER	SUPPLY	12 X 6	-	ALUMINUM	WHITE	T-BAR	1,2,3,4	A,B
R1	PRICE	PDR	PRICE, TITUS	PERFORATED GRILLE	RETURN	22 X 22	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3,4,5	-
R2	PRICE	SDR100	METALAIRE, TITUS	LINEAR SLOT DIFFUSER, 1" SLOT, 2-SLOT, 48" LONG	RETURN	-	-	ALUMINUM	WHITE	T-BAR	1,2,3,4	-
R3	PRICE	SDR150	METALAIRE, TITUS	LINEAR SLOT DIFFUSER, 1.5" SLOT, 2-SLOT, 48" LONG	RETURN	-	-	ALUMINUM	WHITE	T-BAR	1,2,3,4	-
R4	PRICE	SDR150	METALAIRE, TITUS	LINEAR SLOT DIFFUSER, 1.5" SLOT, 2-SLOT, 48" LONG	RETURN	-	-	ALUMINUM	BLACK	CEILING SURFACE	1,2,3,4	-
E1	PRICE	PDR	PRICE, TITUS	PERFORATED GRILLE	EXHAUST	22 X 22	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3,4	-
E2	PRICE	SDR100	METALAIRE, TITUS	LINEAR SLOT DIFFUSER, 1" SLOT, 2-SLOT, 24" LONG	EXHAUST	6Ø	-	ALUMINUM	WHITE	CEILING SURFACE	1,2,3,4	-

NOTES:
1 REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.
2 DUCT BRANCH CONNECTION SIZE TO BE EQUAL TO THE NECK SIZE OF DIFFUSER UNLESS NOTED OTHERWISE ON PLANS.
3 REFER TO ARCHITECT'S RCP FOR FINAL FINISH AND MOUNTING REQUIREMENTS.
4 PAINT ALL VISIBLE DUCTWORK THROUGH GRILLES AND REGISTERS FLAT BLACK.
5 MATCH EXISTING DIFFUSER STYLE.

ACCESSORIES:
A PATTERN CONTROLLERS
B INSULATED PLENUM BOX
C MANUAL VOLUME DAMPER

ABBREVIATIONS

TERM	ABBREVIATION	TERM	ABBREVIATION
ABOVE FINISHED FLOOR	AFF	INCH OF WATER GAUGE	INWG
ABOVE GROUND	AG	INDOOR UNIT	IDU
ABOVE SEA LEVEL	ASL	IRON PIPE SIZE	IPS
ACROSS THE LINE	ACL	KILOVOLT-AMP	KVA
AIR ADMITTANCE VALVE	AAV	KILOWATT	KW
AIR CONDITION(-ING, -ED)	AIR COND	KILOWATT HOUR	KWH
AIR-HANDLING UNIT	AHU OR AH	LEAVING AIR TEMPERATURE	LAT
AIR FLOW MEASURING STATION	AFMA	LEAVING WATER TEMPERATURE	LWT
AMBIENT	AMB	LENGTH	LG
AMPERE (AMP, AMPS)	AMP	LINEAR FEET	LF
ANALOG INPUT	AI	MAXIMUM	MAX
ANALOG OUTPUT	AO	MAXIMUM OVERCURRENT PROTECTION	MOCP
AND	&	MEDIUM-PRESSURE STEAM	MPS
APPARATUS DEW POINT	ADP	MILES PER HOUR	MPH
APPROXIMATE	APPROX	MINIMUM	MIN.
ARCHITECT	ARCH	MINIMUM CIRCUIT AMPERES	MCA
ATMOSPHERE	ATM	MINUTE	MIN
AVERAGE	AVG	MANUFACTURER	MFR
BRAKE HORSEPOWER	BHP	MOTOR CONTROL CENTER	MCC
BROWN & SHARPE WIRE GAGE	B&S	NOISE CRITERIA	NC
BRITISH THERMAL UNIT	BTU	NON-STANDARD PART LOAD	NPLV
BRITISH THERMAL UNIT PER HOUR	MBH	NORMALLY OPEN	NO
1000 BRITISH THERMAL UNIT	MBH	NORMALLY CLOSED	NC
BUILDING	BLDG	NOT APPLICABLE	N/A
BUILDING AUTOMATION SYSTEM	BAS	NOT IN CONTRACT	N I C
CELSIUS	ºC	NOT TO SCALE	NTS
CHILLED WATER RETURN	CHWR	NUMBER	NO
CHILLED WATER SUPPLY	CHWS	ON CENTER	OC
COEFFICIENT, VALVE FLOW	CV	OUNCE	OZ
COEFFICIENT OF PERFORMANCE FACTOR	COP	OUTDOOR UNIT	ODU
COMPRESSOR	COMP	OUTSIDE AIR	OA
CONCRETE	CONC	PACKAGE UNIT	PU
CONDENS(-ER, -ING, -ATION)	COND	PACKAGE TERMINAL AIR CONDITIONER	PTAC
CONNECTION	CONN	PARTS PER MILLION	PPM
CONTINUATION	CONT	PERCENT	%
COOLING LOAD	CLG LOAD	PHASE	PH
CUBIC FEET	CU FT	POUNDS	LBS
CUBIC INCH	CU IN	POUNDS PER SQUARE FOOT	PSF
CUBIC FEET PER MINUTE	CFM	POWER VENTILATOR	PV
CFM, STANDARD CONDITIONS	SCFM	PRESSURE	PRESS
DECIBEL	DB	PRESSURE REDUCING VALVE	PRV
DEGREE	DEG OR º	PRESSURE SAFETY VALVE	PSV
DEDICATED OUTDOOR AIR SYSTEM	DOAS	PUMPED CONDENSATE	PC
DEGREES FAHRENHEIT	DEG. F	QUANTITY	QTY
DETAIL	DET	RATED LOAD AMPS	RLA
DEW-POINT TEMPERATURE	DPT	RECIRCULATE	RECIRC
DIAMETER	DIA	REDUCED PRESSURE BACKFLOW PREVENTER	RPZ
DIAMETER, INSIDE	ID	REFRIGERANT (12, 22, ETC.)	R22, R410
DIAMETER, OUTSIDE	OD	REFRIGERANT LIQUID	RL
DIFFERENCE OR DELTA	DIFF	REFRIGERANT SUCTION	RS
DIGITAL INPUT	DI	REQUIRED	REQD OR REQ'D
DIGITAL OUTPUT	DO	RELATIVE HUMIDITY	RH
DOMESTIC HOT WATER	DHW	RETURN AIR	RA
DOMESTIC HOT WATER RECIRCULATION	DHWR	REVOLUTIONS PER MINUTE	RPM
DRY-BULB TEMPERATURE	DBT	REVOLUTIONS PER SECOND	RPS
DUCTLESS SPLIT SYSTEM AIR HANDLER	DAH	ROOF VENTILATOR	RV
DUCTLESS SPLIT SYSTEM HEAT PUMP	DHP	ROOF TOP UNIT	RTU
ENERGY EFFICIENCY RATING	ERR	SAFETY FACTOR	SF
EFFICIENCY	EFF	SEASONAL ENERGY EFFICIENCY RATIO	SEER
ELECTRIC UNIT HEATER	EUH	SECOND	S
ELEVATION	EL	SHADING COEFFICIENT	SC
ENTERING	ENT	SPECIFICATION	SPEC
ENTERING WATER TEMPERATURE	EWT	SQUARE	SQ
ENTERING AIR TEMPERATURE	EAT	STANDARD	STD
EXISTING	(X)	STATIC PRESSURE	SP
EXTERNAL AMBIENT TEMPERATURE	EAT	SUPPLY	SPLY
EXTERNAL STATIC PRESSURE	ESP	SUPPLY AIR	SA
EXHAUST AIR	EA	TEMPERATURE	TEMP
EXHAUST FAN	EF	TEMPERATURE DIFFERENCE	TD
FACE VELOCITY	FVEL	THERMOSTAT	T STAT
FAHRENHEIT	ºF	TONS OF REFRIGERATION	TONS
FEET PER MINUTE	FPM	TO BE DETERMINED	TBD
FEET PER SECOND	FPS	TOP OF STEEL	TOS
FLOOR	FLR	TOTAL DYNAMIC HEAD	TDH
FOOT OR FEET	FT	TYPICAL	TYP
FULL LOAD AMPS	FLA	U-FACTOR	U
GAGE OR GAUGE	GA	UNDER GROUND	UG
GALLONS	GAL	UNLESS OTHERWISE NOTED	UON
GALLONS PER HOUR	GPH	UNIT HEATER - ELECTRIC	UH
GALLONS PER MINUTE	GPM	VARIABLE AIR VOLUME	VAV
GALLONS PER DAY	GPD	VARIABLE FREQUENCY DRIVE	VFD
GAS UNIT HEATER	GUH	VELOCITY	VEL
GRAINS	GR	VENTILATION, VENT	VENT
HEAD	HD	VENT THRU ROOF	VTR
HEAT EXCHANGER	HX	VERTICAL	VERT
HEATING AND VENTILATION UNIT	HV	VOLT	V
HEATING, VENTILATION AND AIR CONDITIONING	HVAC	VOLT AMPERE	VA
HEIGHT	HGT	VOLUME	VOL
HERTZ	HZ	WATER PRESSURE DROP	WPD
HIGH DENSITY POLYPROPYLENE	HDPE	WATER GAUGE	WG
HIGH-PRESSURE STEAM	HPS	WATT	W
HORSEPOWER, HEAT PUMP	HP	WATT-HOUR	WH
HOT WATER COIL	HWC	WITH	W/
HOUR(S)	HR	WEIGHT	WT
HUMIDITY, RELATIVE	RH	WET BULB	WB
INTEGRATED PART LOAD VALUES	IPLV	YARD	YD
INCH	IN.	YEAR	YR

NOTE: ALL ABBREVIATIONS MAY NOT BE USED IN PROJECT.

MECHANICAL LEGEND

	CEILING EXHAUST AIR GRILLE
	CEILING RETURN AIR / TRANSFER AIR GRILLE
	CEILING SUPPLY AIR DIFFUSER / GRILLE
(X)	EXISTING
	INDICATES TO DEMOLISH
	EXTENT OF DEMOLITION
	POINT OF CONNECTION
T	THERMOSTAT / TEMPERATURE SENSOR
	MANUAL VOLUME DAMPER
FD	FIRE DAMPER
M	MOTORIZED DAMPER
	RETURN, EXHAUST OR TRANSFER AIR FLOW
	SUPPLY AIR FLOW
AIR TYPE DESIGNATOR / AIRFLOW, CFM	DIFFUSER / REGISTER / GRILLE TAG

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

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PROGRESS DRAWING - DO NOT USE FOR CONSTRUCTION

CITY OF WILMINGTON SKYLINE CENTER UPFIT
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LS3P PROJECT: 7701-230545

Δ	DATE	DESCRIPTION

SHEET NAME:
SPECIFICATIONS, ABBREVIATIONS, LEGEND AND SCHEDULES

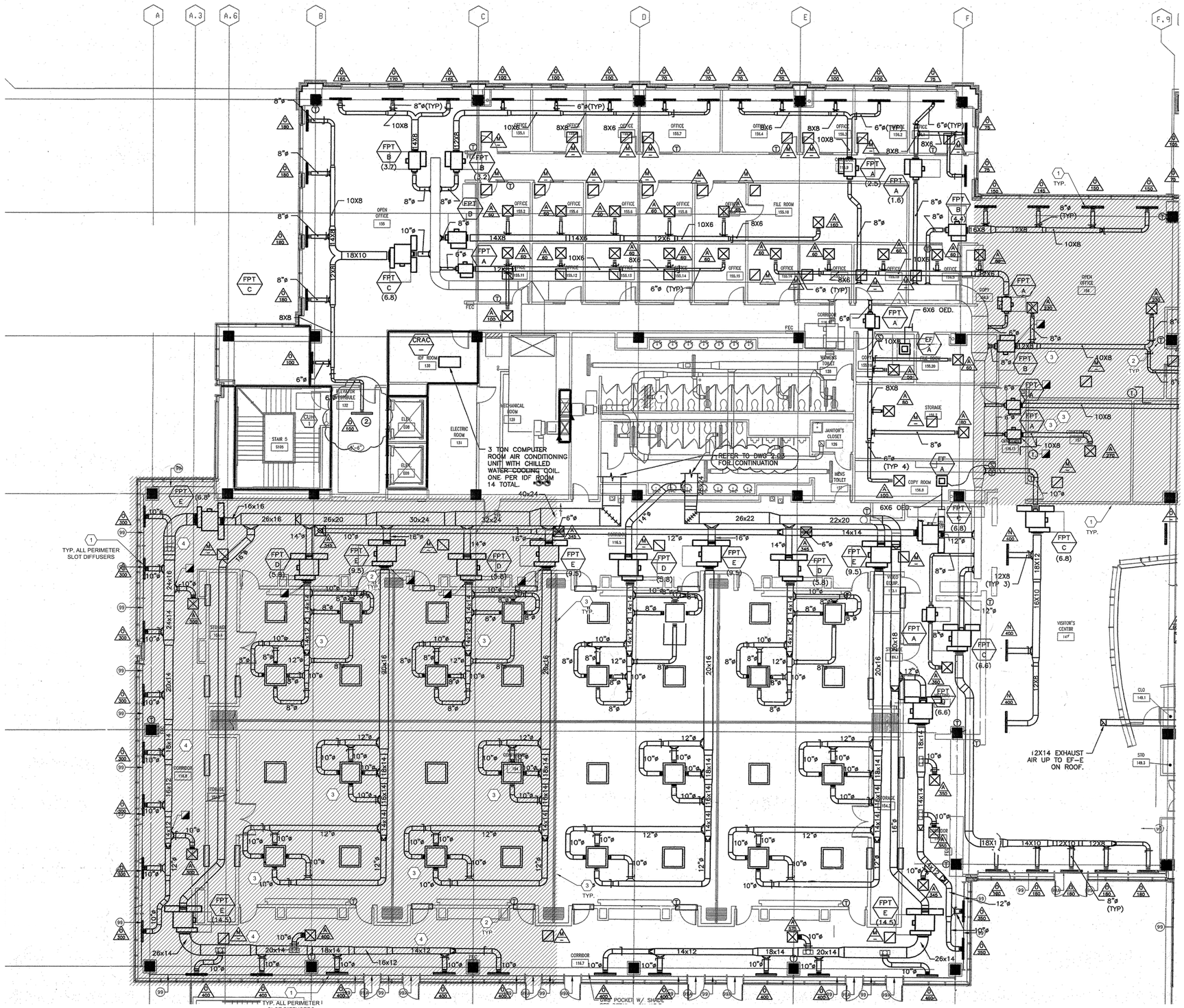
ORIG SUBMISSION: 2024.08.07

SHEET: M-001

100% PERMIT DRAWINGS

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG AT THIS SHEETS ORIGINAL PAGE SIZE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL PAPER SIZE



A1 **LEVEL 1 FLOOR PLAN - AREA "A"**
1/8" = 1'-0"

PLAN NORTH

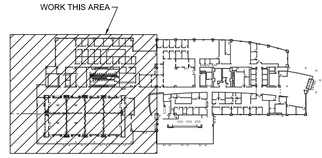
NOTE: DISREGARD REV-CLOUDS FROM EXISTING BACKGROUNDS. THESE WILL BE REMOVED FOR NEXT SUBMITTAL.

GENERAL NOTES

1. THESE DRAWINGS ARE BASED ON EXISTING AS-BUILT AND FIELD INVESTIGATION. NOTWITHSTANDING, THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO THE START OF HIS WORK.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.

KEYED NOTES

1. REMOVE DIFFUSER / GRILLE FROM HARD CEILING / CEILING GRID AND SUPPORT FROM STRUCTURE AND PROTECT DURING DEMOLITION OF HARD CEILING / CEILING GRID. PREPARE FOR RE-INSTALLATION INTO NEW HARD CEILING / CEILING GRID. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
2. REMOVE / PROTECT / STORE EXISTING THERMOSTAT AND PREPARE FOR RE-INSTALLATION AS DICTATED BY NEW CONSTRUCTION. REFER TO PLAN A1/M-101 FOR NEW LOCATION. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
3. REMOVE AND DISPOSE OF LOW PRESSURE DUCTWORK BACK TO TERMINAL UNIT INCLUDING, BUT NOT LIMITED TO, DUCTWORK, FLEX DUCT, DIFFUSERS, HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES. PATCH ANY UNUSED LEGACY HOLES, RE-INSULATE AND SEAL AIR-TIGHT. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE. VAV UNITS AND MEDIUM PRESSURE DUCTWORK TO REMAIN.
4. LOW PRESSURE MAIN DUCT TRUNK DOWNSTREAM OF THE ASSOCIATED VAV TERMINAL UNIT AND ASSOCIATED DIFFUSERS TO REMAIN. REFER TO NEW WORK PLANS FOR ADDITIONAL INFORMATION.



A5 **KEY PLAN**
NOT TO SCALE

PLAN NORTH

CITY OF WILMINGTON
NORTH CAROLINA

CITY OF WILMINGTON

LS3P
101 NORTH THIRD STREET, SUITE 500
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Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com

NC# P-0506

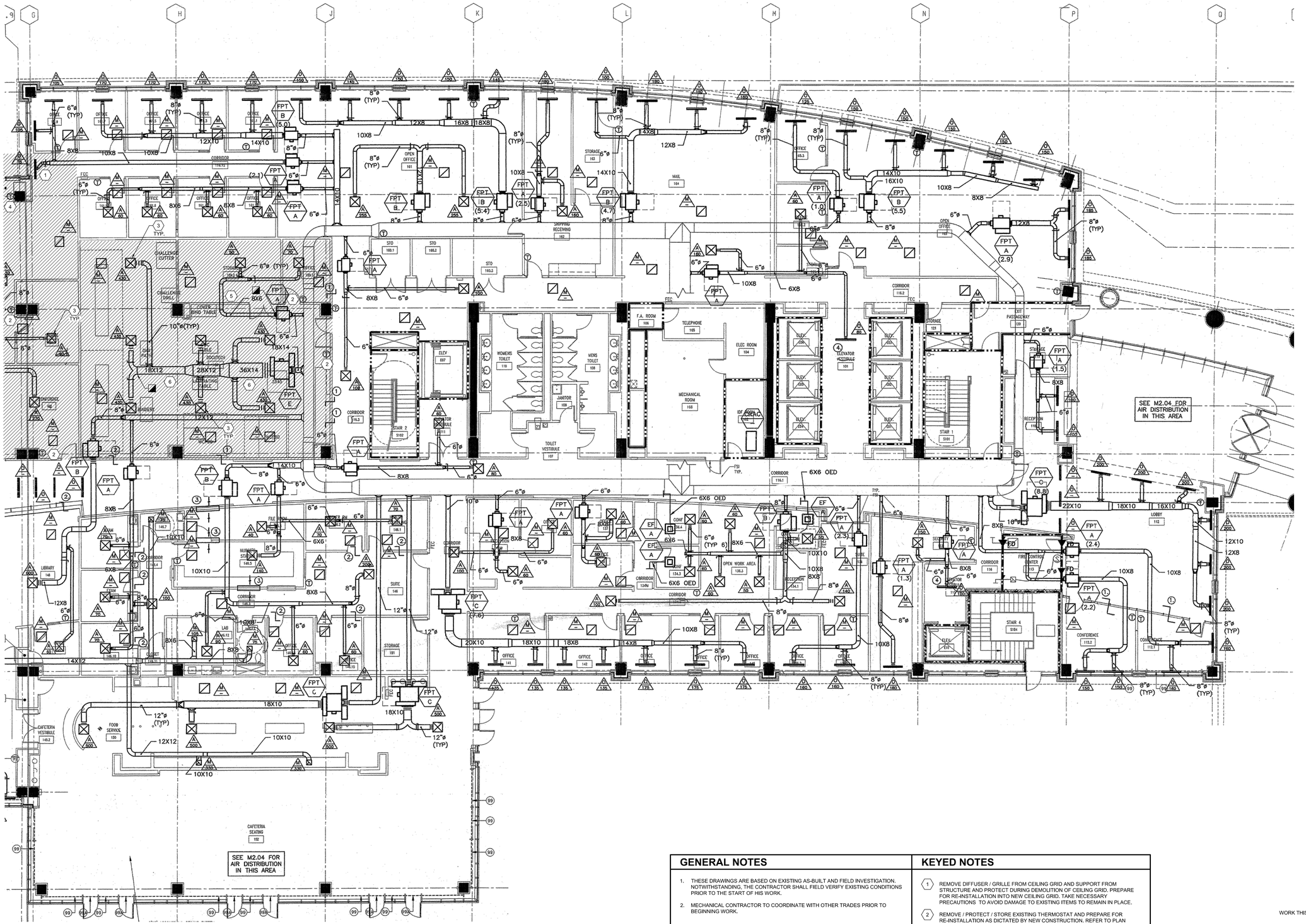
PRELIMINARY - NOT FOR CONSTRUCTION
DRAWING - DO NOT USE FOR CONSTRUCTION
RICHARD M. HAY

CITY OF WILMINGTON SKYLINE CENTER UPFIT
929 N Front Street, Wilmington, North Carolina 28401
LS3P PROJECT: 7701-230545

Δ	DATE	DESCRIPTION

SHEET NAME:
MECHANICAL
LEVEL 1 FLOOR PLAN
AREA "A"
DEMOLITION
ORIG SUBMISSION: 2024.08.07

SHEET:
MD101
100% PERMIT DRAWINGS



A1 **LEVEL 1 FLOOR PLAN - AREA "B"**
1/8" = 1'-0"

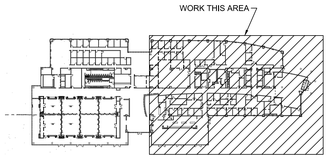
NOTE: DISREGARD REV-CLOUDS FROM EXISTING BACKGROUNDS. THESE WILL BE REMOVED FOR NEXT SUBMITTAL.

GENERAL NOTES

1. THESE DRAWINGS ARE BASED ON EXISTING AS-BUILT AND FIELD INVESTIGATION. NOTWITHSTANDING, THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO THE START OF HIS WORK.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.

KEYED NOTES

1. REMOVE DIFFUSER / GRILLE FROM CEILING GRID AND SUPPORT FROM STRUCTURE AND PROTECT DURING DEMOLITION OF CEILING GRID. PREPARE FOR RE-INSTALLATION INTO NEW CEILING GRID. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
2. REMOVE / PROTECT / STORE EXISTING THERMOSTAT AND PREPARE FOR RE-INSTALLATION AS DICTATED BY NEW CONSTRUCTION. REFER TO PLAN A1/M-102 FOR NEW LOCATION. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
3. REMOVE / DISPOSE EXISTING DIFFUSERS / GRILLES INCLUDING, BUT NOT LIMITED TO, DUCTWORK, FLEX DUCT, HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES BACK TO MAIN TRUNK. PATCH, RE-INSULATE AND SEAL AIR-TIGHT. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
4. EXISTING THERMOSTAT TO REMAIN IN PLACE, PROTECT DURING RENOVATION.
5. REMOVE AND DISPOSE OF LOW PRESSURE DUCTWORK BACK TO TERMINAL UNIT INCLUDING, BUT NOT LIMITED TO, DUCTWORK, FLEX DUCT, DIFFUSERS, HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES. PATCH ANY UNUSED LEGACY HOLES, RE-INSULATE AND SEAL AIR-TIGHT. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
6. MAIN DUCT TRUNK TO REMAIN FROM (X)FPT-E TO EXTENT OF DEMOLITION SHOWN. REFER TO NEW WORK PLANS FOR ADDITIONAL INFORMATION.



A5 **KEY PLAN**
NOT TO SCALE

CITY OF WILMINGTON
NORTH CAROLINA

CITY OF WILMINGTON

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WILMINGTON, NORTH CAROLINA 28401
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NC# P-0506

PRELIMINARY - NOT FOR CONSTRUCTION
DRAWING IN PROGRESS - DO NOT USE FOR CONSTRUCTION
Richard M. Hall

CITY OF WILMINGTON
SKYLINE CENTER UPFIT
929 N Front Street, Wilmington, North Carolina 28401

LS3P PROJECT: 7701-230545

Δ	DATE	DESCRIPTION

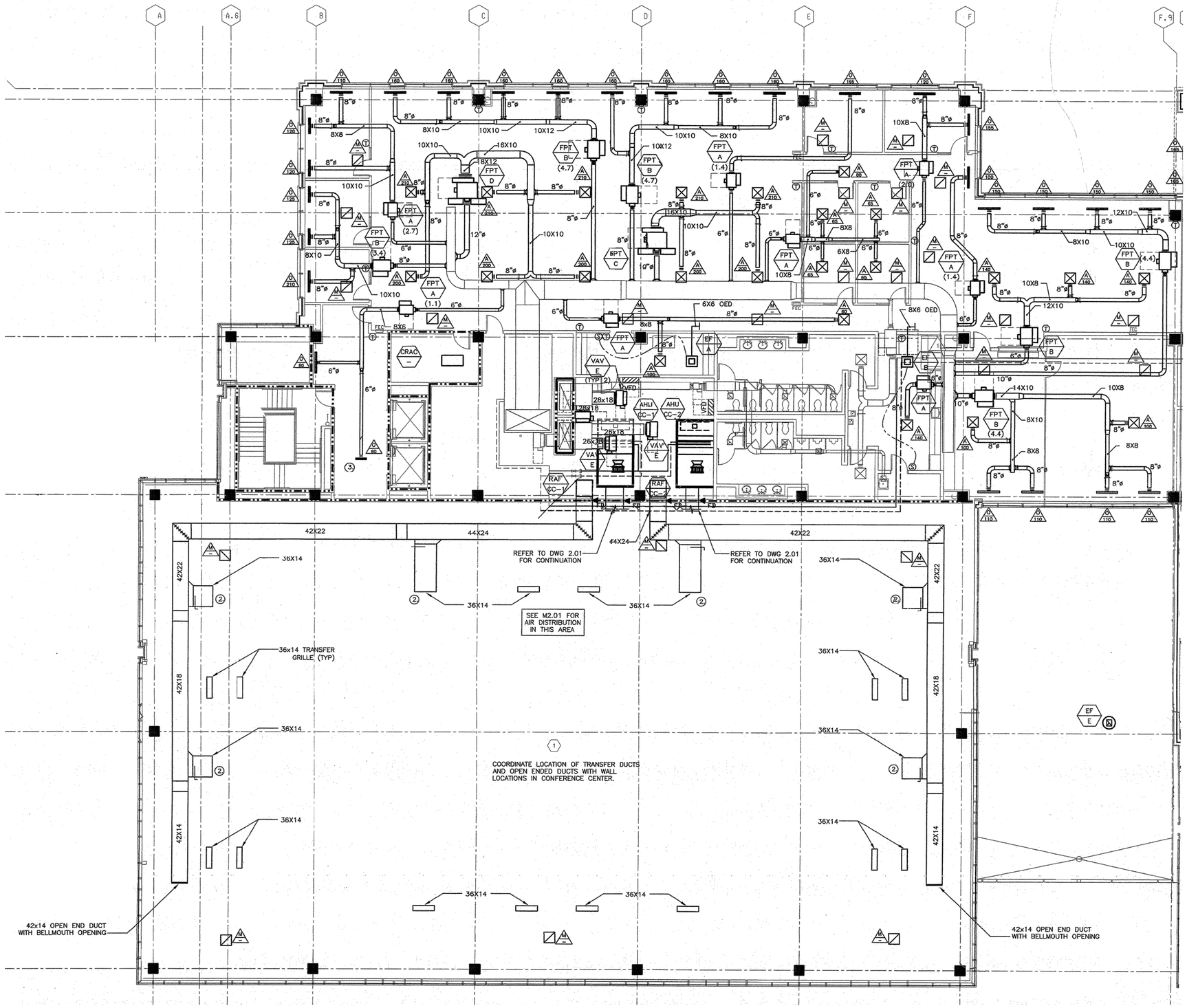
SHEET NAME:
MECHANICAL
LEVEL 1 FLOOR PLAN
AREA "B"
DEMOLITION

ORIG SUBMISSION: 2024.08.07

SHEET: **MD102**

100% PERMIT DRAWINGS

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL PAPER SIZE



A1 **LEVEL 2 FLOOR PLAN - AREA "A"**
1/8" = 1'-0"

PLAN NORTH

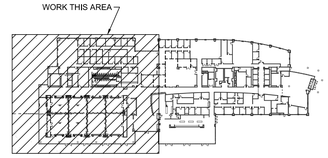
NOTE: DISREGARD REV-CLOUDS FROM EXISTING BACKGROUNDS. THESE WILL BE REMOVED FOR NEXT SUBMITTAL.

GENERAL NOTES

1. THESE DRAWINGS ARE BASED ON EXISTING AS-BUILT AND FIELD INVESTIGATION. NOTWITHSTANDING, THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO THE START OF HIS WORK.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.

KEYED NOTES

(1) NO DEMOLITION AT THIS TIME.



A5 **KEY PLAN**
NOT TO SCALE

PLAN NORTH

CITY OF WILMINGTON
NORTH CAROLINA

CITY OF WILMINGTON

LS3P

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NC# P-0506

CITY OF WILMINGTON
SKYLINE CENTER UPFIT
929 N Front Street, Wilmington, North Carolina 28401

LS3P PROJECT: 7701-230545

△	DATE	DESCRIPTION

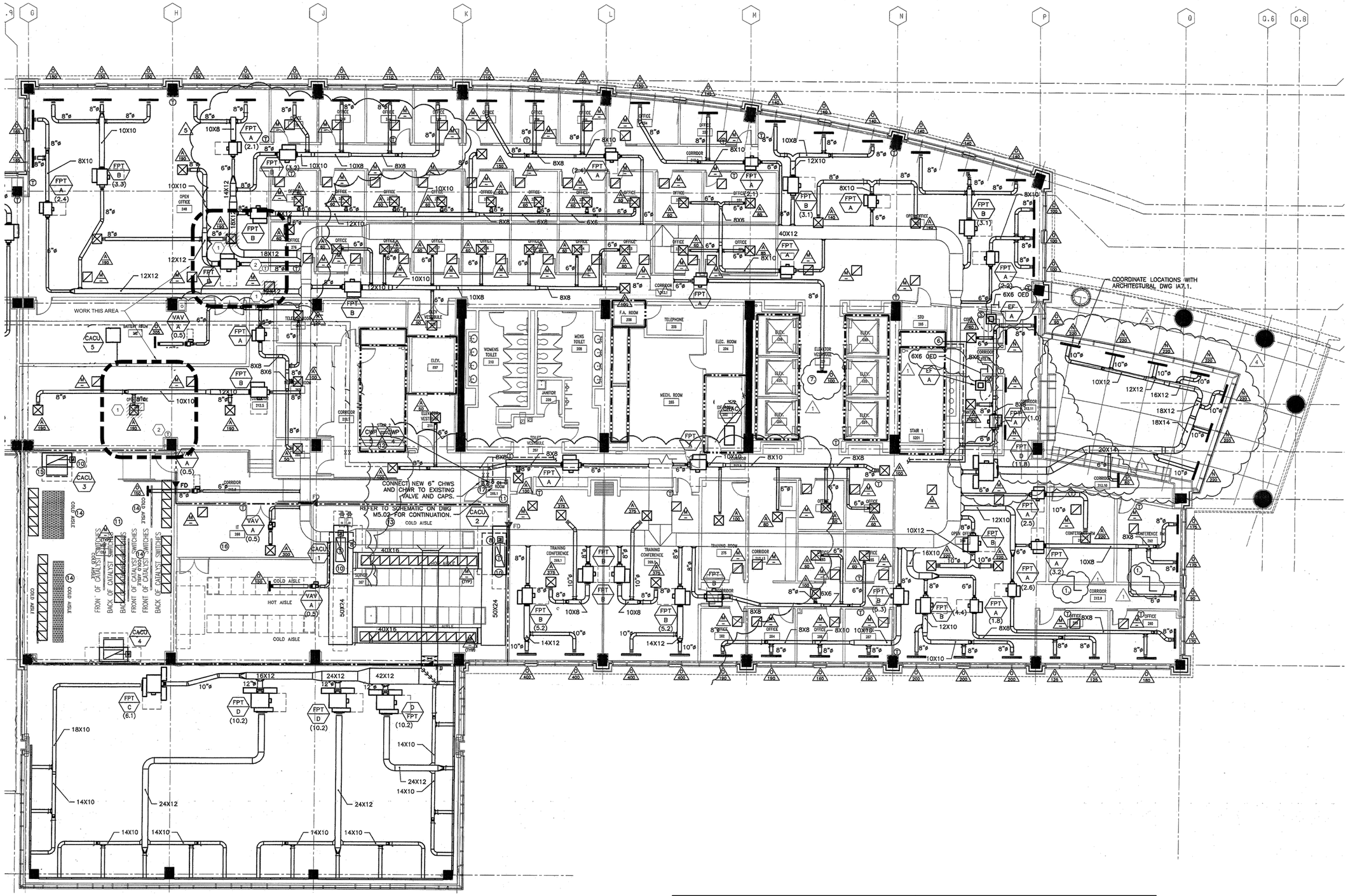
SHEET NAME:
MECHANICAL
LEVEL 2 FLOOR PLAN
AREA "A"
DEMOLITION

ORIG SUBMISSION: 2024.08.07

SHEET:
MD103

100% PERMIT DRAWINGS

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH WHEN PRINTED ON ORIGINAL PAPER SIZE



B1 **LEVEL 2 FLOOR PLAN - AREA "B"**
1/8" = 1'-0"

PLAN NORTH

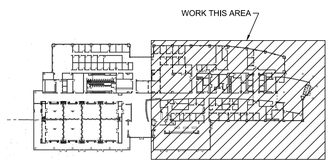
NOTE: DISREGARD REV-CLOUDS FROM EXISTING BACKGROUNDS. THESE WILL BE REMOVED FOR NEXT SUBMITTAL.

GENERAL NOTES

1. THESE DRAWINGS ARE BASED ON EXISTING AS-BUILT AND FIELD INVESTIGATION. NOTWITHSTANDING, THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO THE START OF HIS WORK.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.

KEYED NOTES

1. REMOVE DIFFUSER / GRILLE FROM CEILING GRID AND SUPPORT FROM STRUCTURE AND PROTECT DURING DEMOLITION OF CEILING GRID. PREPARE FOR RE-INSTALLATION INTO NEW CEILING GRID. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
2. REMOVE / PROTECT / STORE EXISTING THERMOSTAT AND PREPARE FOR RE-INSTALLATION AS DICTATED BY NEW CONSTRUCTION. REFER TO PLAN A1/MH405 FOR NEW LOCATION. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.



A5 **KEY PLAN**
NOT TO SCALE

CITY OF WILMINGTON
NORTH CAROLINA

CITY OF WILMINGTON

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NC# P-0506

PROGRESS DRAWING - DO NOT USE FOR CONSTRUCTION
EDWARD M. HAWKINS

CITY OF WILMINGTON
SKYLINE CENTER UPFIT
929 N Front Street, Wilmington, North Carolina 28401

LS3P PROJECT: 7701-230545

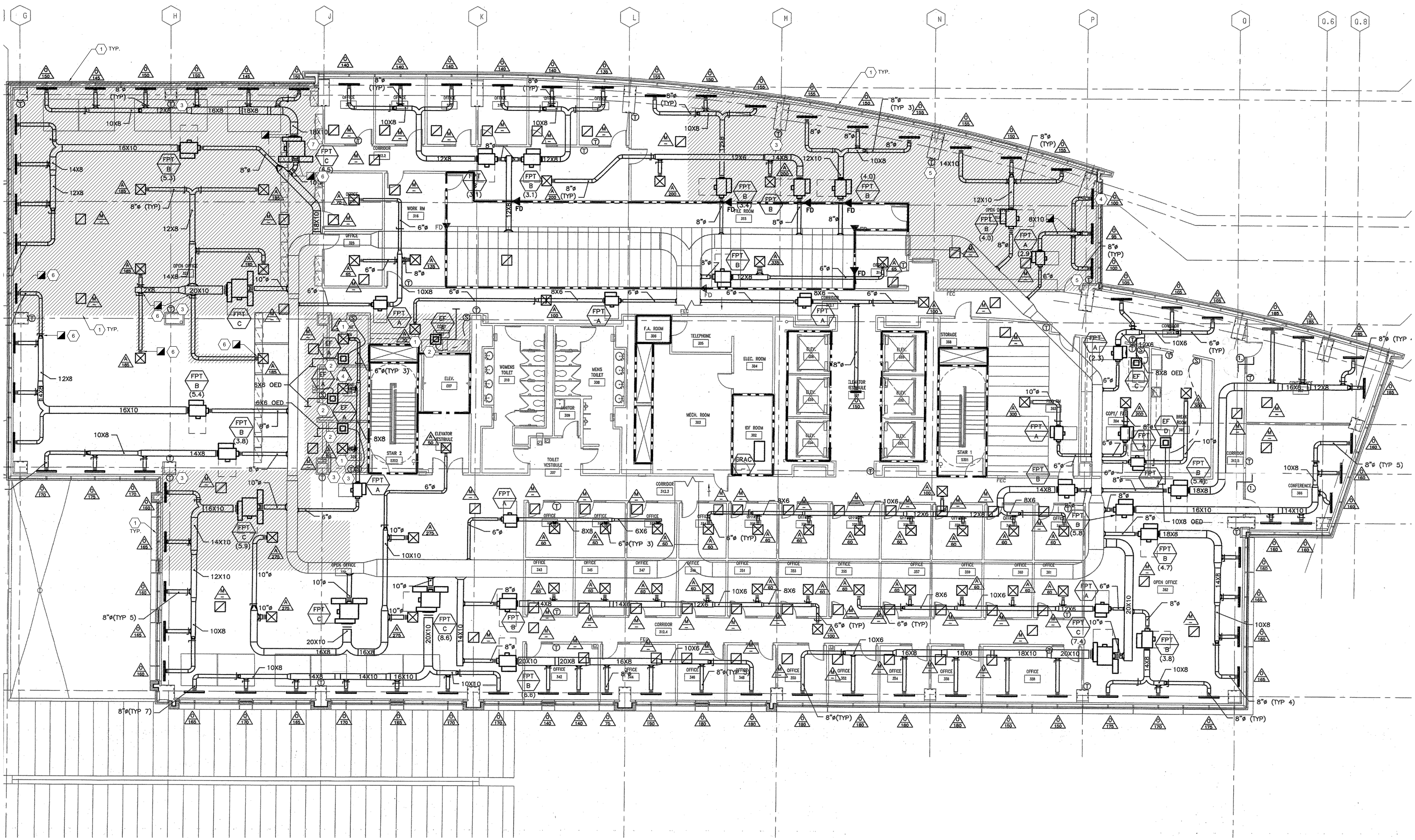
Δ	DATE	DESCRIPTION

SHEET NAME:
MECHANICAL
LEVEL 1 FLOOR PLAN
AREA "B"
DEMOLITION

ORIG SUBMISSION: 2024.08.07

SHEET:
MD104

100% PERMIT DRAWINGS



B1 LEVEL 3 FLOOR PLAN
1/8" = 1'-0"

PLAN NORTH

NOTE: DISREGARD REV-CLOUDS FROM EXISTING BACKGROUNDS. THESE WILL BE REMOVED FOR NEXT SUBMITTAL.

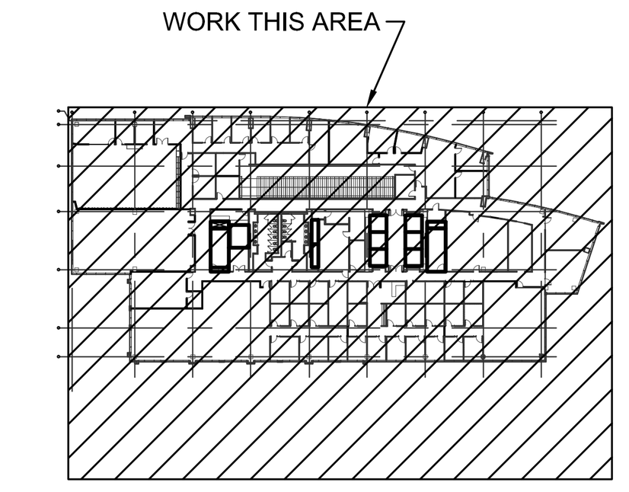
GENERAL NOTES

1. THESE DRAWINGS ARE BASED ON EXISTING AS-BUILT AND FIELD INVESTIGATION. NOTWITHSTANDING, THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO THE START OF HIS WORK.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.

KEYED NOTES

1. REMOVE DIFFUSER / GRILLE FROM CEILING GRID AND SUPPORT FROM STRUCTURE AND PROTECT DURING DEMOLITION OF CEILING GRID. PREPARE FOR RE-INSTALLATION INTO NEW CEILING GRID. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
2. REMOVE / DISPOSE EXISTING EF INCLUDING BUT NOT LIMITED TO EF, DUCTWORK, HANGERS, SUPPORTS, ANCHORS, INSERTS, CONTROLS, ETC.. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
3. REMOVE / PROTECT / STORE EXISTING THERMOSTAT AND PREPARE FOR RE-INSTALLATION AS DICTATED BY NEW CONSTRUCTION. REFER TO PLAN A1/MH405 FOR NEW LOCATION. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
4. REMOVE / DISPOSE EXISTING DIFFUSERS / GRILLES INCLUDING, BUT NOT LIMITED TO, DUCTWORK, FLEX DUCT, HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES BACK TO MAIN TRUNK. PATCH, RE-INSULATE AND SEAL AIR-TIGHT. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
5. EXISTING THERMOSTAT TO REMAIN IN PLACE, PROTECT DURING RENOVATION.
6. REMOVE AND DISPOSE OF SUPPLY DUCTWORK INCLUDING, BUT NOT LIMITED TO, SUPPLY AIR DUCTWORK, FLEX DUCT, HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES BACK TO MAIN TRUNK. PATCH ANY UNUSED LEGACY HOLES, RE-INSULATE AND SEAL AIR-TIGHT. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
7. REMOVE / PROTECT / STORE EXISTING FTP TERMINAL UNIT AND PREPARE FOR RE-INSTALLATION AS DICTATED BY NEW CONSTRUCTION. REFER TO PLAN A1/MH405 FOR NEW LOCATION. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.

WORK THIS AREA



A5 KEY PLAN
NOT TO SCALE

PLAN NORTH

CITY OF WILMINGTON

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PROGRESS DRAWING - DO NOT USE FOR CONSTRUCTION

CITY OF WILMINGTON SKYLINE CENTER UPFIT

929 N Front Street, Wilmington, North Carolina 28401

LS3P PROJECT: 7701-230545

Δ	DATE	DESCRIPTION

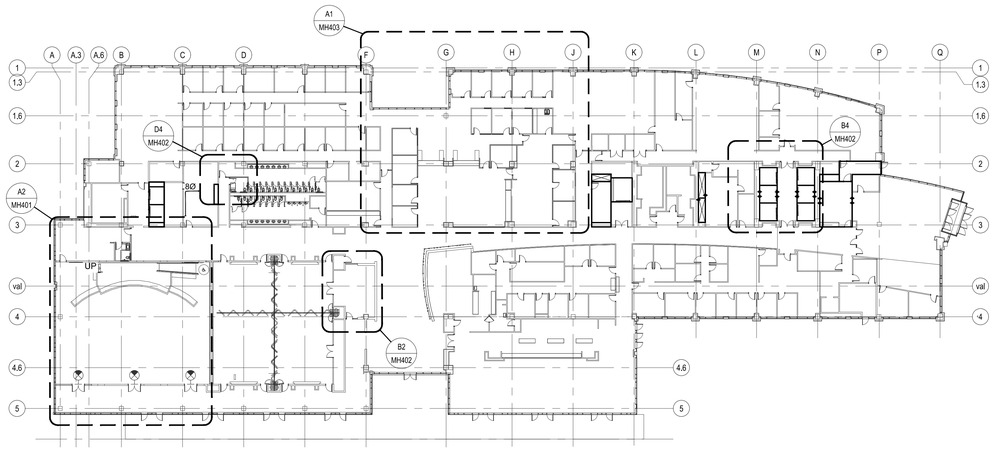
SHEET NAME:
MECHANICAL LEVEL 3 FLOOR PLAN DEMOLITION

ORIG SUBMISSION: 2024.08.07

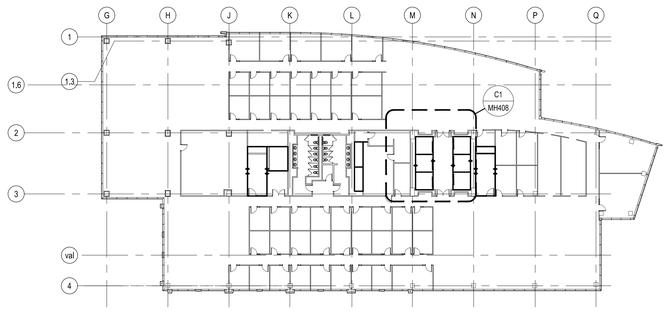
SHEET: MD105

100% PERMIT DRAWINGS

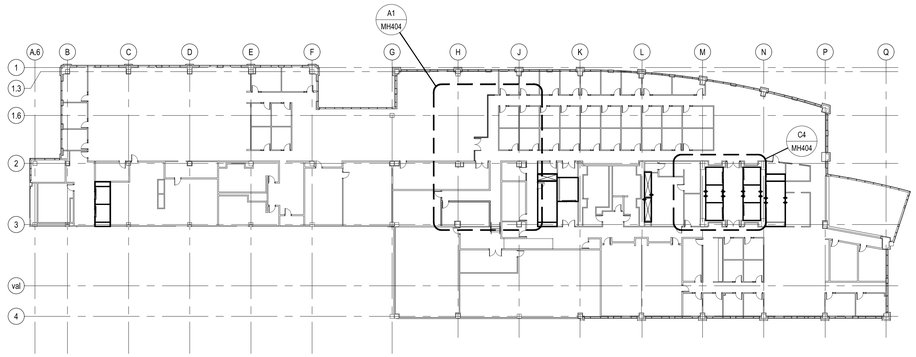
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL PAPER SIZE



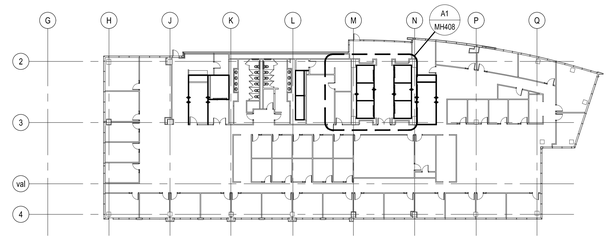
D1 FLOOR PLAN - LEVEL 1
1" = 30'-0"
0 30' 60'
PLAN NORTH



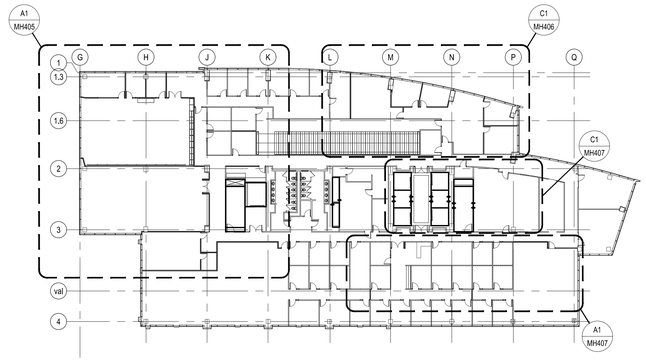
D5 FLOOR PLAN - LEVEL 10
1" = 30'-0"
0 30' 60'
PLAN NORTH



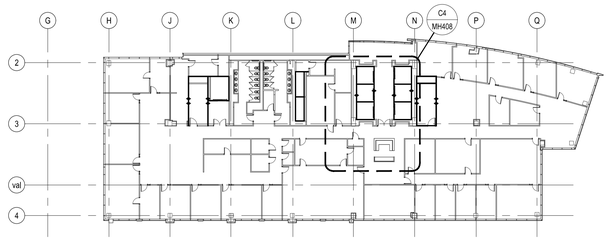
B1 FLOOR PLAN - LEVEL 2
1" = 30'-0"
0 30' 60'
PLAN NORTH



B5 FLOOR PLAN - LEVEL 11
1" = 30'-0"
0 30' 60'
PLAN NORTH



A2 FLOOR PLAN - LEVEL 3
1" = 30'-0"
0 30' 60'
PLAN NORTH



A5 FLOOR PLAN - LEVEL 12
1" = 30'-0"
0 30' 60'
PLAN NORTH

E D C B A

1 2 3 4 5 6

CITY OF WILMINGTON
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NC# P-0506

NOT CARD
IN PROGRESS
DRAWING - DO
NOT USE FOR
CONSTRUCTION
DAVID M. HILL

CITY OF WILMINGTON
SKYLINE CENTER UPFIT
929 N Front Street, Wilmington, North Carolina 28401

LS3P PROJECT: 7701-230545

Δ	DATE	DESCRIPTION

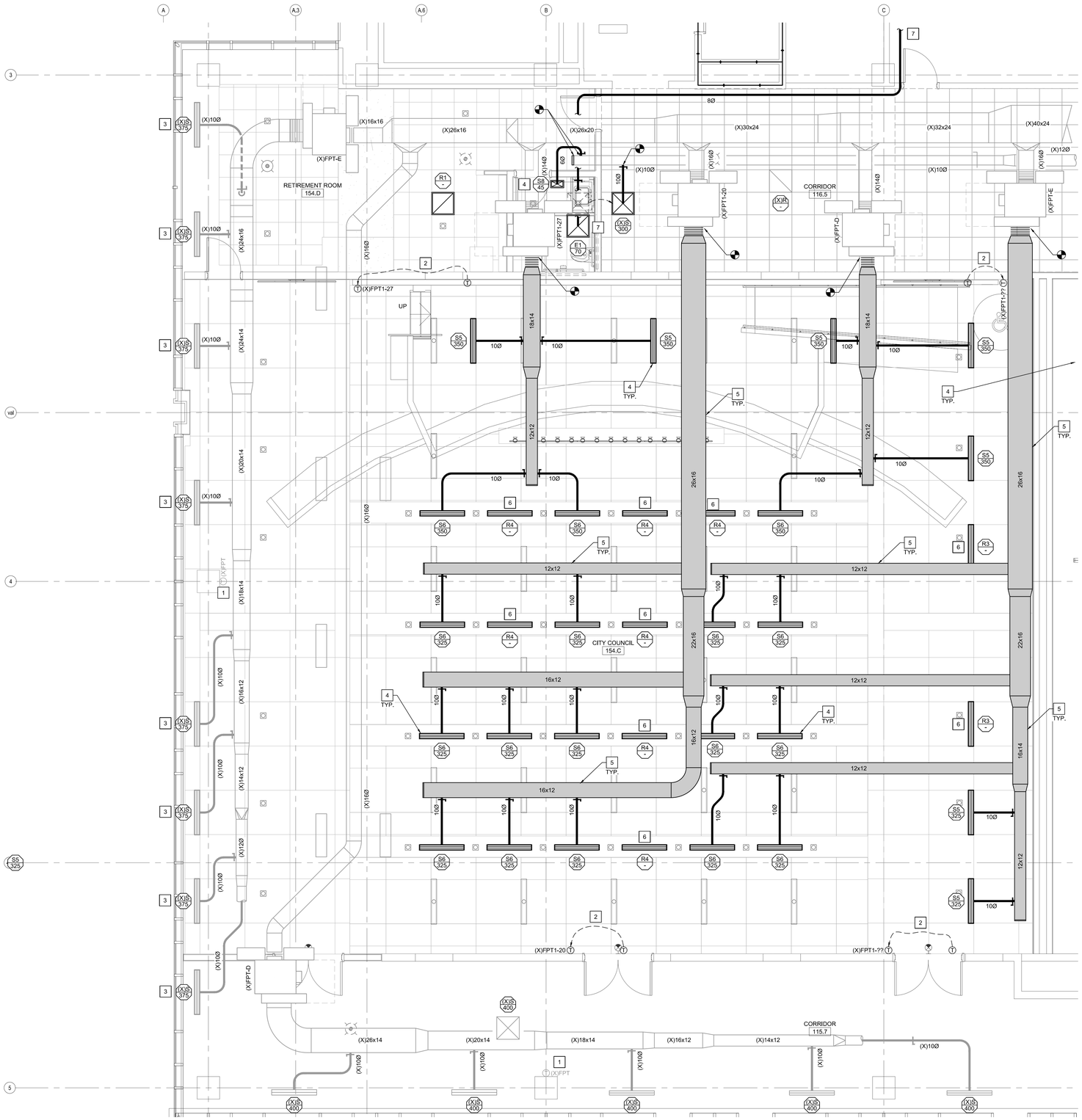
SHEET NAME:
MECHANICAL
LEVELS
1, 2, 3, 10, 11 AND 12

ORIG SUBMISSION: 2024.08.07

SHEET:
MH101

100% PERMIT DRAWINGS

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL PAPER SIZE



A2 **ENL. PLAN COUNCIL CHAMBERS 154C**
1/4" = 1'-0"

GENERAL NOTES

1. THESE DRAWINGS ARE BASED ON EXISTING AS-BUILT AND FIELD INVESTIGATION. NOTWITHSTANDING, THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO THE START OF HIS WORK.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.
3. COORDINATE DUCT ELEVATION AND GENERAL PLACEMENT WITH STRUCTURE AND OTHER TRADES, TYP.

KEYED NOTES

1. PROTECT EXISTING THERMOSTAT IN PLACE DURING RENOVATIONS.
2. RELOCATE EXISTING THERMOSTAT AS SHOWN. MOUNT APPROXIMATELY 54" ABOVE FINISHED FLOOR. PROVIDE NEW CONTROL WIRING BACK TO ASSOCIATED FTP IF WIRING IS NOT LONG ENOUGH TO RELOCATE TO DESIRED LOCATION. CONTRACTOR MUST NOT SPLICE WIRING. **CONFIRM LOCATION WITH OWNER.**
3. LOCATE EXISTING SUPPLY DIFFUSER AT LOCATION SHOWN. IF EXISTING FLEX DUCT IS NOT LONG ENOUGH TO REACH DESIRED LOCATION REPLACE FLEX DUCT, INCLUDING BUT NOT LIMITED TO FLEX DUCT, RIGID DUCT, INSULATION, HANGERS, SUPPORTS, ETC. BACK TO MAIN TRUNK TO PROVIDE A FULLY OPERATIONAL SYSTEM. PROPORTIONALLY BALANCE AIRFLOW AVAILABLE FROM EXISTING FTP.
4. PROVIDE NEW SUPPLY DIFFUSER AT LOCATION SHOWN. PROVIDE FLEX DUCT, RIGID DUCT, INSULATION, HANGERS, SUPPORTS, ECT, TO PROVIDE A FULLY OPERATIONAL SYSTEM. PROPORTIONALLY BALANCE AIRFLOW AVAILABLE FROM EXISTING FTP.
5. PROVIDE NEW SUPPLY AIR DUCTWORK INCLUDING, BUT NOT LIMITED TO, SUPPLY AIR DUCTWORK, FLEX DUCT, HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES TO PROVIDE A FULLY OPERATIONAL SYSTEM.
6. PROVIDE NEW RETURN GRILLE AT LOCATION SHOWN.
7. PROVIDE NEW EXHAUST GRILLE AT LOCATION SHOWN. PROVIDE RIGID DUCT, HANGERS, SUPPORTS, ECT, BACK TO COMMON EXHAUST SHAFT IN MECHANICAL ROOM 129, REFER TO PLANS D1/MH101 AND D4/MH402 FOR ADDITIONAL INFORMATION.

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Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com

NC# P-0506

IN PROGRESS DRAWING - DO NOT USE FOR CONSTRUCTION
JOHN D. M. [illegible]

CITY OF WILMINGTON
SKYLINE CENTER UPFIT
929 N Front Street, Wilmington, North Carolina 28401

LS3P PROJECT: 7701-230545

Δ	DATE	DESCRIPTION

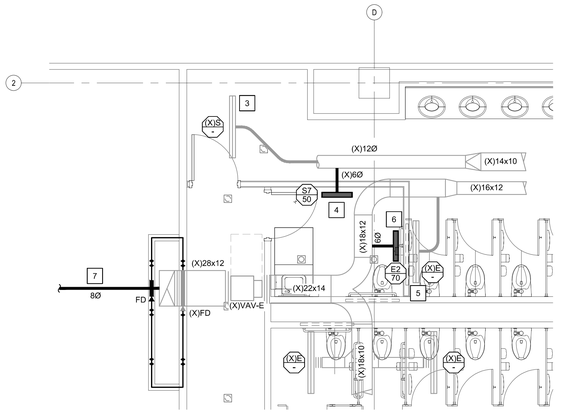
SHEET NAME:
MECHANICAL
ENL. PLANS
LEVEL 1

ORIG SUBMISSION: 2024.08.07

SHEET:
MH401

100% PERMIT DRAWINGS

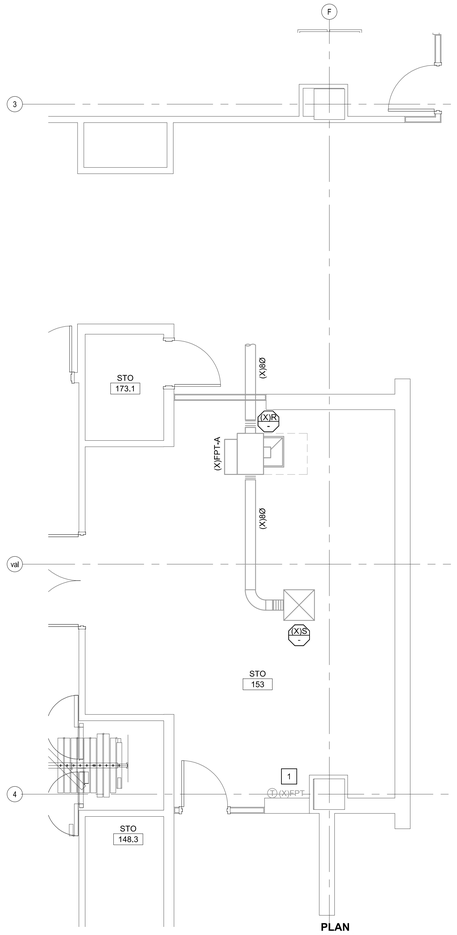
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL PAPER SIZE



PLAN NORTH

D4 ENL. PLAN - TLT 127.5

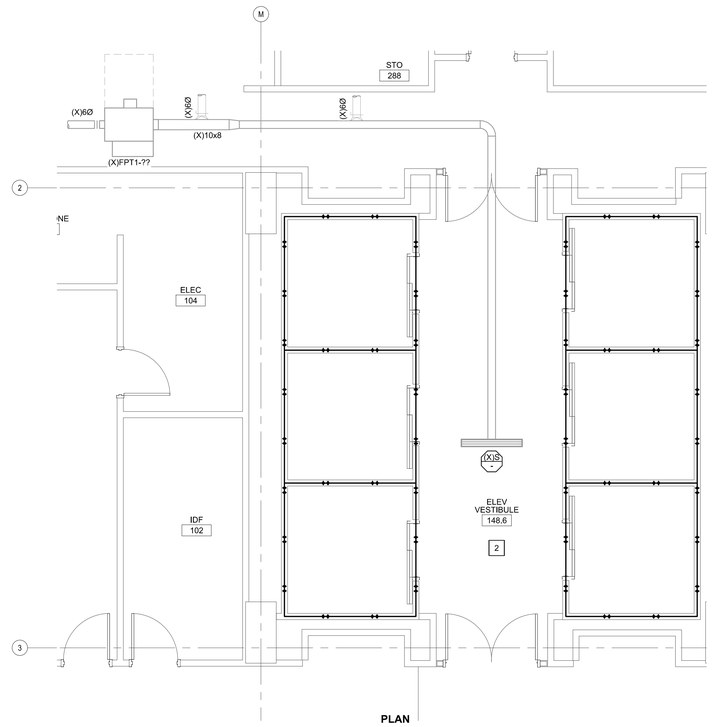
1/4" = 1'-0"



PLAN NORTH

B2 ENL. PLAN STORAGE 153

1/4" = 1'-0"



PLAN NORTH

B4 ENL PLAN - ELEV VEST 101

1/4" = 1'-0"

GENERAL NOTES

1. THESE DRAWINGS ARE BASED ON EXISTING AS-BUILT AND FIELD INVESTIGATION. NOTWITHSTANDING, THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO THE START OF HIS WORK.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.
3. COORDINATE DUCT ELEVATION AND GENERAL PLACEMENT WITH STRUCTURE AND OTHER TRADES, TYP.

KEYED NOTES

1. PROTECT EXISTING THERMOSTAT IN PLACE DURING RENOVATIONS.
2. NO MECHANICAL WORK IN THIS AREA.
3. LOCATE EXISTING SUPPLY DIFFUSER AT LOCATION SHOWN. IF EXISTING FLEX DUCT IS NOT LONG ENOUGH TO REACH DESIRED LOCATION REPLACE FLEX DUCT, INCLUDING BUT NOT LIMITED TO FLEX DUCT, RIGID DUCT, INSULATION, HANGERS, SUPPORTS, ETC. BACK TO MAIN TRUNK TO PROVIDE A FULLY OPERATIONAL SYSTEM. PROPORTIONALLY BALANCE AIRFLOW AVAILABLE FROM EXISTING FTP.
4. PROVIDE NEW SUPPLY DIFFUSER AT LOCATION SHOWN. PROVIDE FLEX DUCT, RIGID DUCT, INSULATION, HANGERS, SUPPORTS, ECT, TO PROVIDE A FULLY OPERATIONAL SYSTEM. PROPORTIONALLY BALANCE AIRFLOW AVAILABLE FROM EXISTING FTP.
5. LOCATE EXISTING EXHAUST GRILLE AT LOCATION SHOWN. IF EXISTING FLEX DUCT IS NOT LONG ENOUGH TO REACH DESIRED LOCATION REPLACE FLEX DUCT, INCLUDING BUT NOT LIMITED TO FLEX DUCT, RIGID DUCT, INSULATION, HANGERS, SUPPORTS, ETC. BACK TO MAIN TRUNK TO PROVIDE A FULLY OPERATIONAL SYSTEM. PROPORTIONALLY BALANCE AIRFLOW AVAILABLE FROM EXISTING VAV.
6. PROVIDE NEW EXHAUST GRILLE AT LOCATION SHOWN. PROVIDE FLEX DUCT, RIGID DUCT, INSULATION, HANGERS, SUPPORTS, ECT, TO PROVIDE A FULLY OPERATIONAL SYSTEM. PROPORTIONALLY BALANCE AIRFLOW AVAILABLE FROM EXISTING FTP.
7. PROVIDE NEW EXHAUST AS SHOWN. PROVIDE FIRE DAMPER, RIGID DUCT, HANGERS, SUPPORTS, ECT. FROM COMMON EXHAUST SHAFT IN MECHANICAL ROOM 129 TO NEW EXHAUST GRILLE IN TLT ROOM 154E. REFER TO PLANS D1/MH101 AND A2/MH401 FOR ADDITIONAL INFORMATION.

CITY OF WILMINGTON

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www.cbhfengineers.com

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DRAWING - DO NOT USE FOR CONSTRUCTION
DAVID M. HILL

CITY OF WILMINGTON
SKYLINE CENTER UPFIT
929 N Front Street, Wilmington, North Carolina 28401

LS3P PROJECT: 7701-230545

Δ	DATE	DESCRIPTION

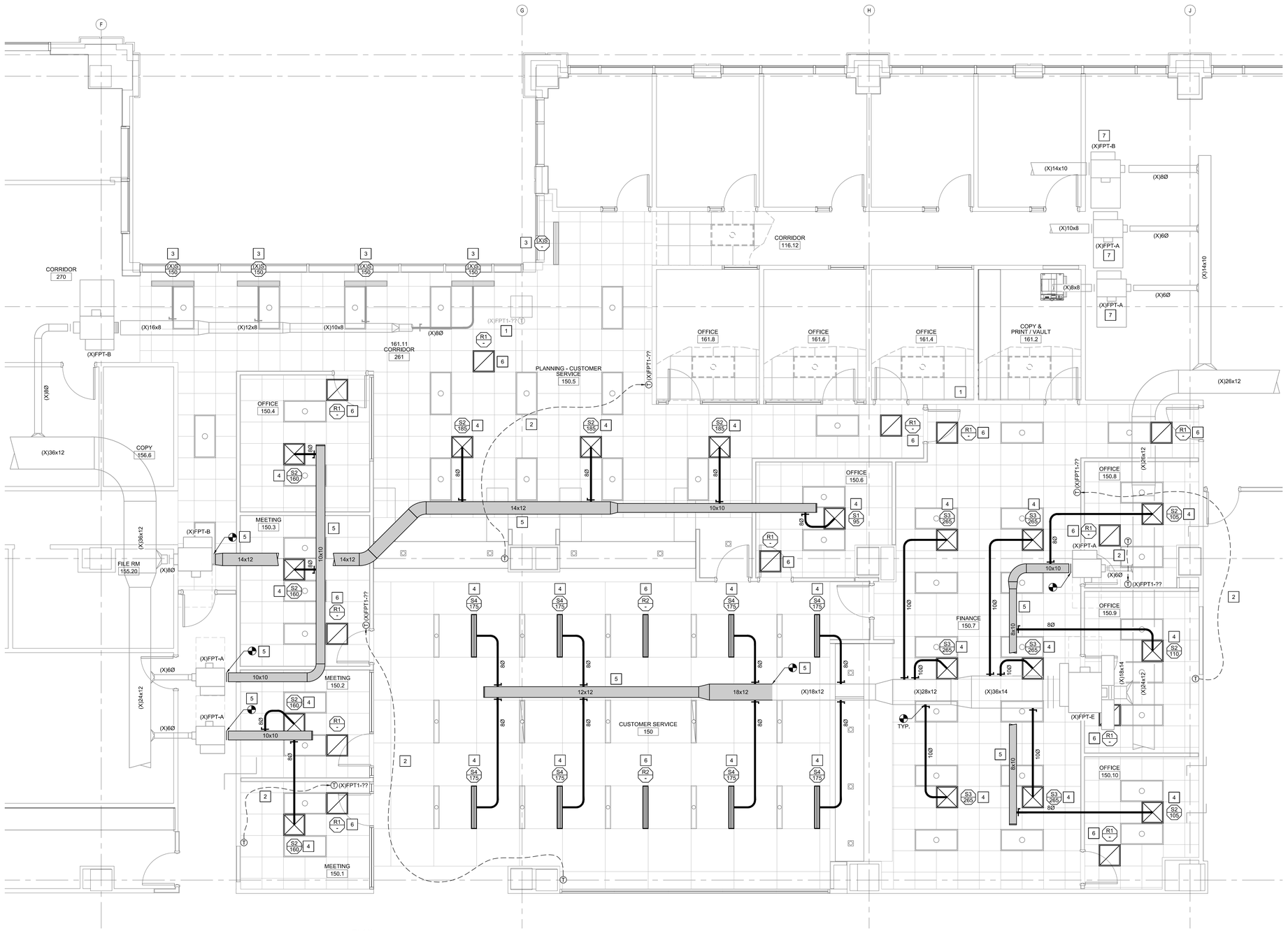
SHEET NAME:
MECHANICAL
ENL. PLANS
LEVEL 1

ORIG SUBMISSION: 2024.08.07

SHEET:
MH402

100% PERMIT DRAWINGS

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL PAPER SIZE



A1 ENL. PLAN CUSTOMER SERVICE

1/4" = 1'-0"

PLAN NORTH

GENERAL NOTES

1. THESE DRAWINGS ARE BASED ON EXISTING AS-BUILT AND FIELD INVESTIGATION. NOTWITHSTANDING, THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO THE START OF HIS WORK.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.
3. COORDINATE DUCT ELEVATION AND GENERAL PLACEMENT WITH STRUCTURE AND OTHER TRADES, TYP.

KEYED NOTES

1. PROTECT EXISTING THERMOSTAT IN PLACE DURING RENOVATIONS.
2. RELOCATE EXISTING THERMOSTAT AS SHOWN. MOUNT APPROXIMATELY 54" ABOVE FINISHED FLOOR. PROVIDE NEW CONTROL WIRING BACK TO ASSOCIATED FTP IF WIRING IS NOT LONG ENOUGH TO RELOCATE TO DESIRED LOCATION. CONTRACTOR MUST NOT SPLICE WIRING. **CONFIRM LOCATION WITH OWNER.**
3. LOCATE EXISTING SUPPLY DIFFUSER AT LOCATION SHOWN. IF EXISTING FLEX DUCT IS NOT LONG ENOUGH TO REACH DESIRED LOCATION REPLACE FLEX DUCT, INCLUDING BUT NOT LIMITED TO FLEX DUCT, RIGID DUCT, INSULATION, HANGERS, SUPPORTS, ETC. BACK TO MAIN TRUNK TO PROVIDE A FULLY OPERATIONAL SYSTEM. PROPORTIONALLY BALANCE AIRFLOW AVAILABLE FROM EXISTING FTP.
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5. PROVIDE NEW SUPPLY AIR DUCTWORK INCLUDING, BUT NOT LIMITED TO, SUPPLY AIR DUCTWORK, HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES TO PROVIDE A FULLY OPERATIONAL SYSTEM.
6. PROVIDE NEW RETURN GRILLE AT LOCATION SHOWN.
7. NO MECHANICAL WORK IN THIS AREA, EXISTING FTP'S ARE SHOWN FOR REFERENCE ONLY.

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CITY OF WILMINGTON SKYLINE CENTER UPFIT

929 N Front Street, Wilmington, North Carolina 28401

LS3P PROJECT: 7701-230545

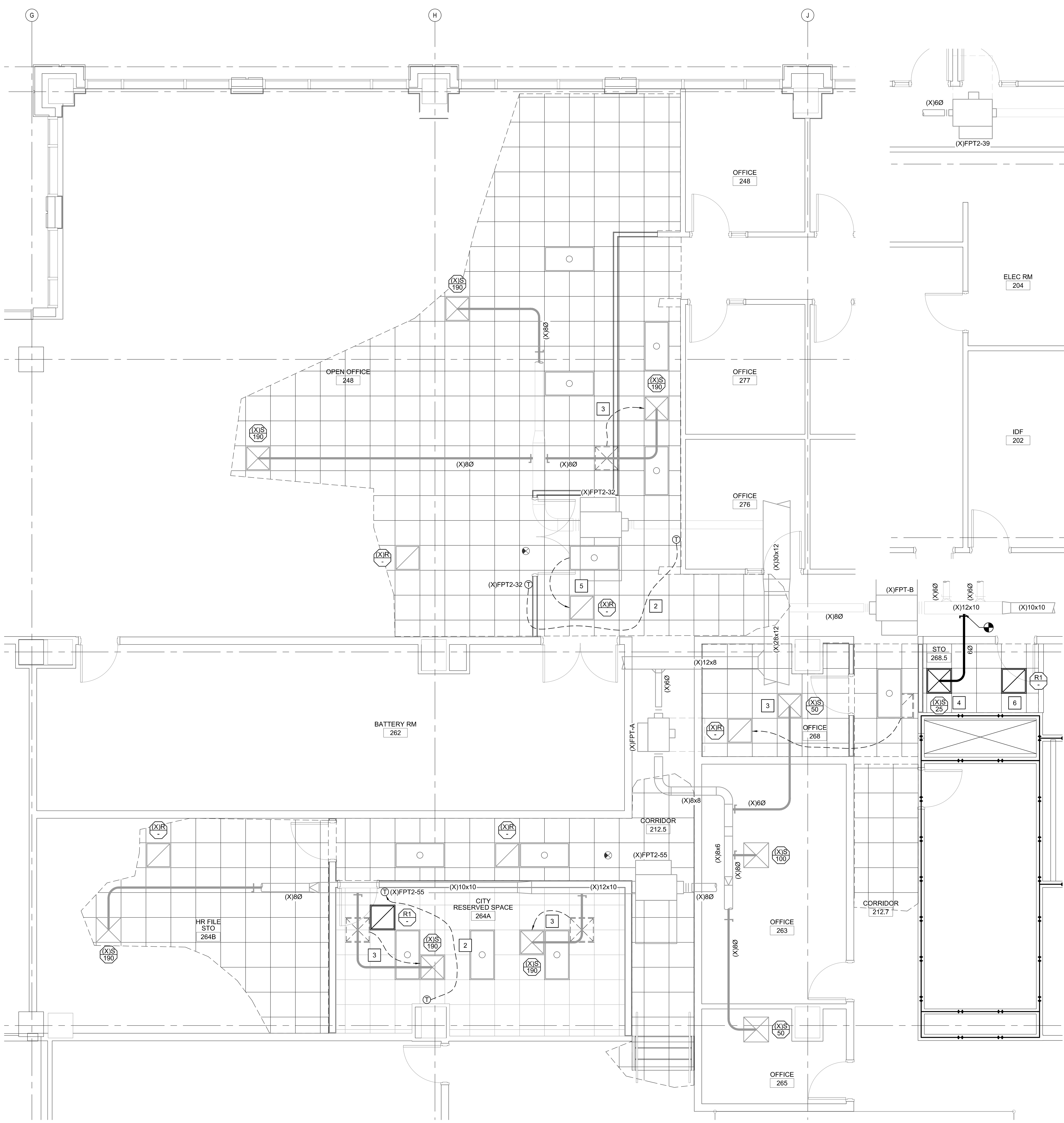
Δ	DATE	DESCRIPTION

SHEET NAME:
MECHANICAL
ENL. PLAN
LEVEL 1

ORIG SUBMISSION: 2024.08.07

SHEET:
MH403

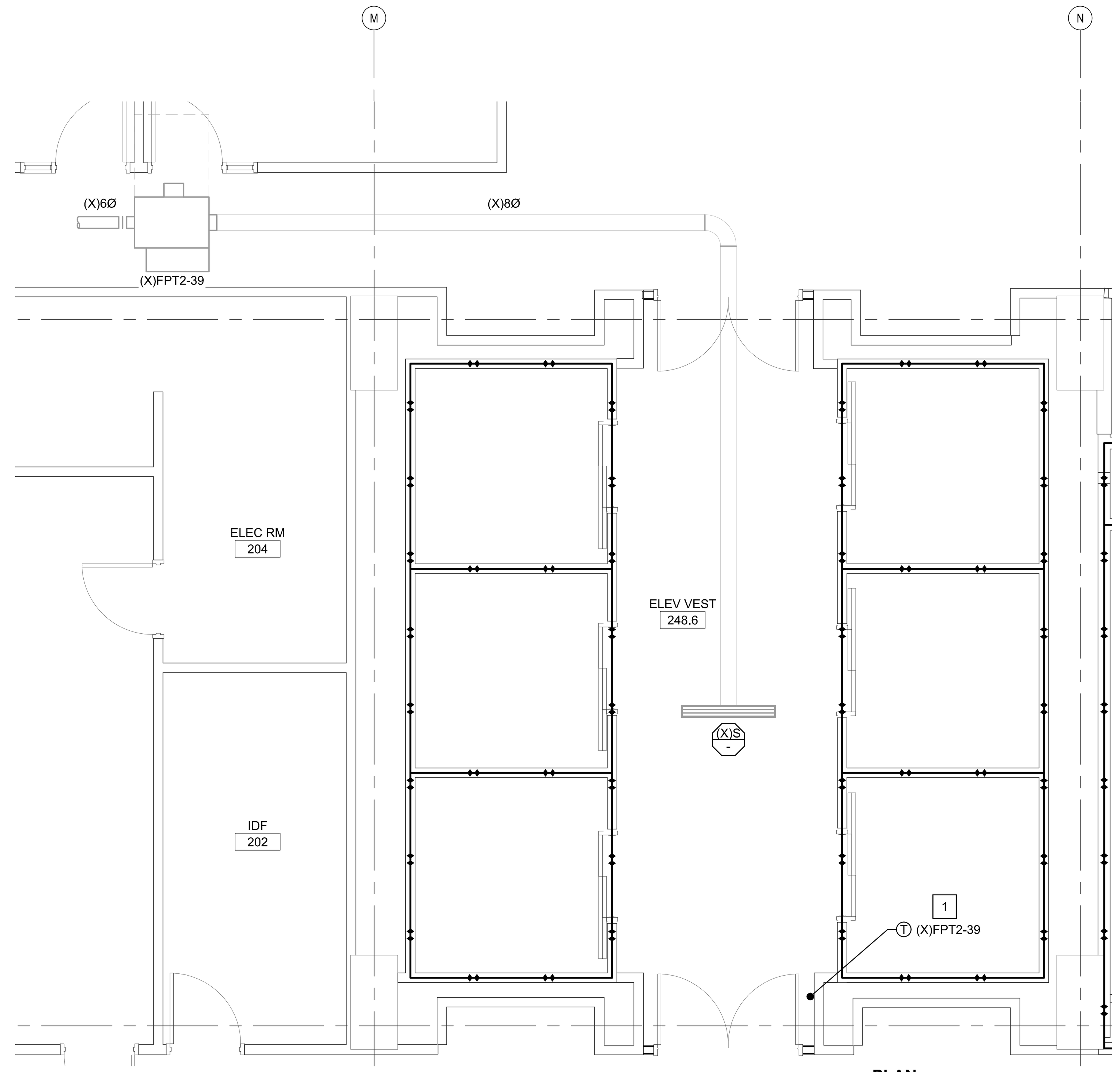
100% PERMIT DRAWINGS



A1 LEVEL 2 FLOOR PLAN

1/4" = 1'-0"

PLAN NORTH



C4 LEVEL 2 FLOOR PLAN

1/4" = 1'-0"

PLAN NORTH

GENERAL NOTES

1. THESE DRAWINGS ARE BASED ON EXISTING AS-BUILT AND FIELD INVESTIGATION. NOTWITHSTANDING, THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO THE START OF HIS WORK.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.
3. COORDINATE DUCT ELEVATION AND GENERAL PLACEMENT WITH STRUCTURE AND OTHER TRADES, TYP.

KEYED NOTES

1. PROTECT EXISTING THERMOSTAT IN PLACE DURING RENOVATIONS.
2. RELOCATE EXISTING THERMOSTAT AS SHOWN. MOUNT APPROXIMATELY 54" ABOVE FINISHED FLOOR. PROVIDE NEW CONTROL WIRING BACK TO ASSOCIATED FTP IF WIRING IS NOT LONG ENOUGH TO RELOCATE TO DESIRED LOCATION. CONTRACTOR MUST NOT SPLICE WIRING. **CONFIRM LOCATION WITH OWNER.**
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5. LOCATE EXISTING RETURN GRILLE AT LOCATION SHOWN.
6. PROVIDE NEW RETURN GRILLE AT LOCATION SHOWN.

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CITY OF WILMINGTON SKYLINE CENTER UPFIT

929 N Front Street, Wilmington, North Carolina 28401

LS3P PROJECT: 7701-230545

Δ	DATE	DESCRIPTION

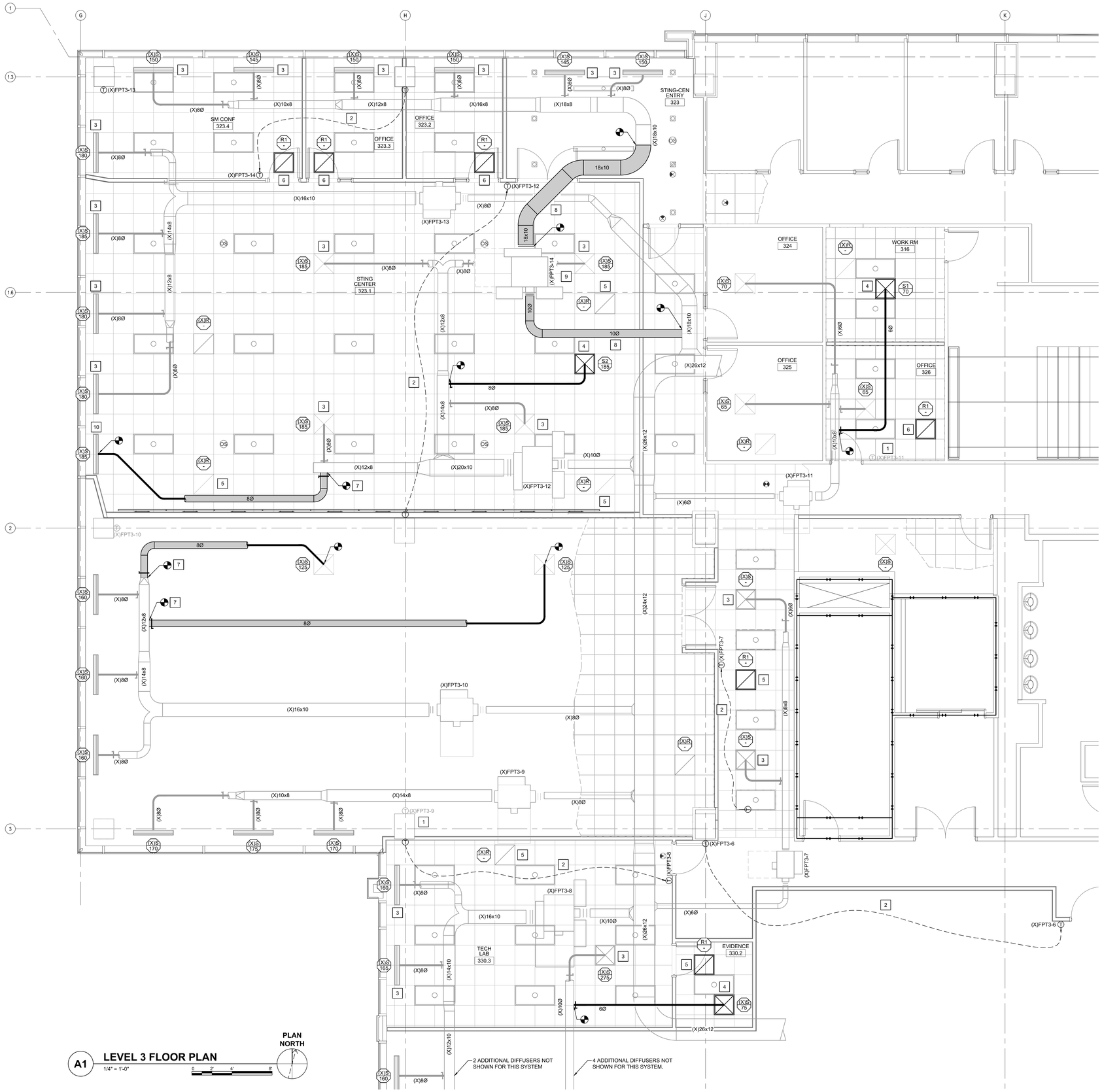
SHEET NAME:
MECHANICAL ENL. PLANS LEVEL 2

ORIG SUBMISSION: 2024.08.07

SHEET: MH404

100% PERMIT DRAWINGS

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH E SHEETS ORIGINAL PAGE SIZE



GENERAL NOTES

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2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.
3. COORDINATE DUCT ELEVATION AND GENERAL PLACEMENT WITH STRUCTURE AND OTHER TRADES, TYP.
4. COORDINATE AIR-HANDLING EQUIPMENT LOCATION TO MAXIMIZE SPACE WHILE MAINTAINING MANUFACTURERS CLEARANCE REQUIREMENTS.

KEYED NOTES

1. PROTECT EXISTING THERMOSTAT IN PLACE DURING RENOVATIONS.
2. RELOCATE EXISTING THERMOSTAT AS SHOWN. MOUNT APPROXIMATELY 54" ABOVE FINISHED FLOOR. PROVIDE NEW CONTROL WIRING BACK TO ASSOCIATED FTP IF WIRING IS NOT LONG ENOUGH TO RELOCATE TO DESIRED LOCATION. CONTRACTOR MUST NOT SPLICE WIRING. **CONFIRM LOCATION WITH OWNER.**
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5. LOCATE EXISTING RETURN GRILLE AT LOCATION SHOWN.
6. PROVIDE NEW RETURN GRILLE AT LOCATION SHOWN.
7. PROVIDE NEW SUPPLY DUCTWORK INCLUDING, BUT NOT LIMITED TO, SUPPLY AIR DUCTWORK, FLEX DUCT, HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
8. PROVIDE NEW SUPPLY AIR DUCTWORK INCLUDING, BUT NOT LIMITED TO, SUPPLY AIR DUCTWORK, HANGERS, SUPPORTS, ANCHORS, INSERTS, INSULATION AND ACCESSORIES TO PROVIDE A FULLY OPERATIONAL SYSTEM.
9. RELOCATE EXISTING FTP TERMINAL UNIT INCLUDING, BUT NOT LIMITED TO, TERMINAL UNIT, PIPING, HANGERS, SUPPORTS, ANCHORS, INSERTS AND ACCESSORIES. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
10. LOCATE EXISTING SUPPLY DIFFUSER AT LOCATION SHOWN.

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929 N Front Street, Wilmington, North Carolina 28401

LS3P PROJECT: 7701-230545

Δ	DATE	DESCRIPTION

SHEET NAME:
MECHANICAL ENL. PLAN LEVEL 3

ORIG SUBMISSION: 2024.08.07

SHEET:
MH405

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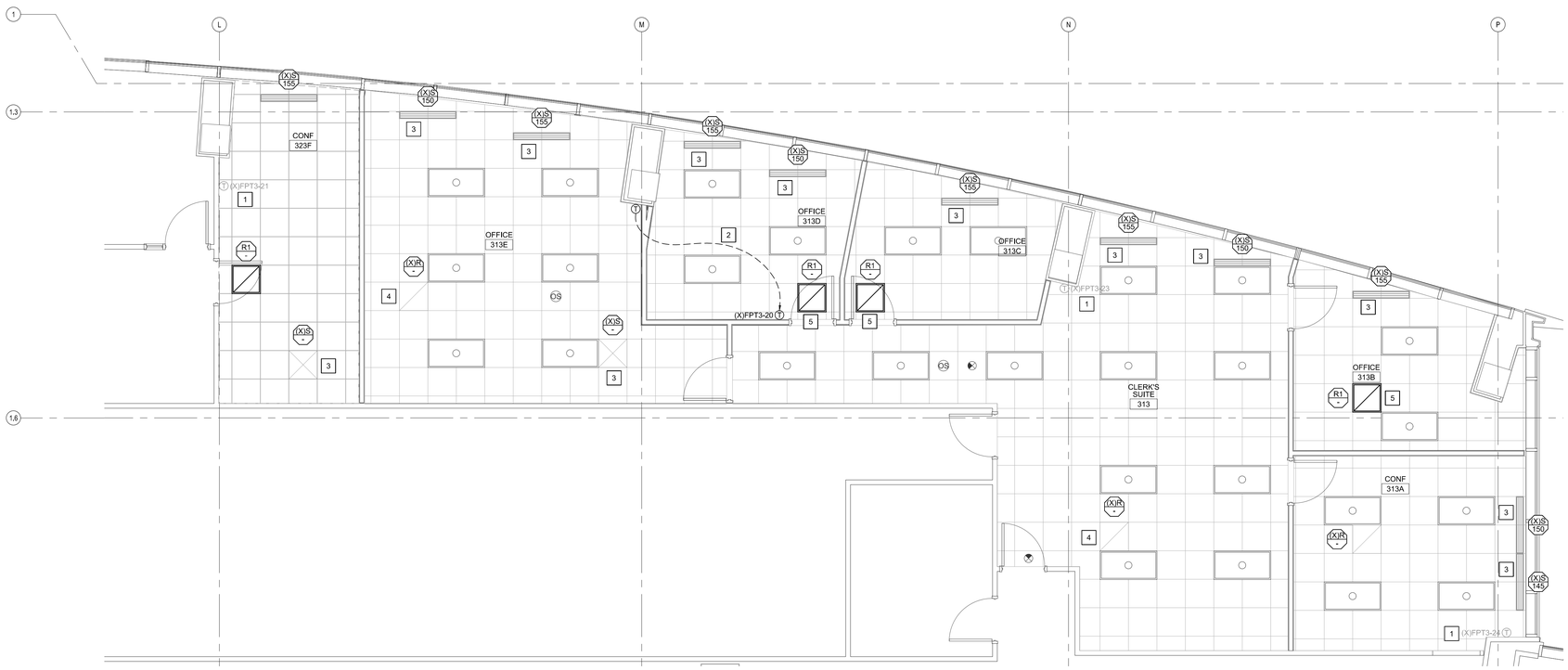

C1 **LEVEL 3 FLOOR PLAN**
1/4" = 1'-0"
0 2' 4' 8'

PLAN NORTH

GENERAL NOTES

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NC# P-0506

CITY OF WILMINGTON
SKYLINE CENTER UPFIT
929 N Front Street, Wilmington, North Carolina 28401

LS3P PROJECT: 7701-230545

Δ	DATE	DESCRIPTION

SHEET NAME:
MECHANICAL
ENL. PLANS
LEVEL 3

ORIG SUBMISSION: 2024.08.07

SHEET:
MH406

100% PERMIT DRAWINGS

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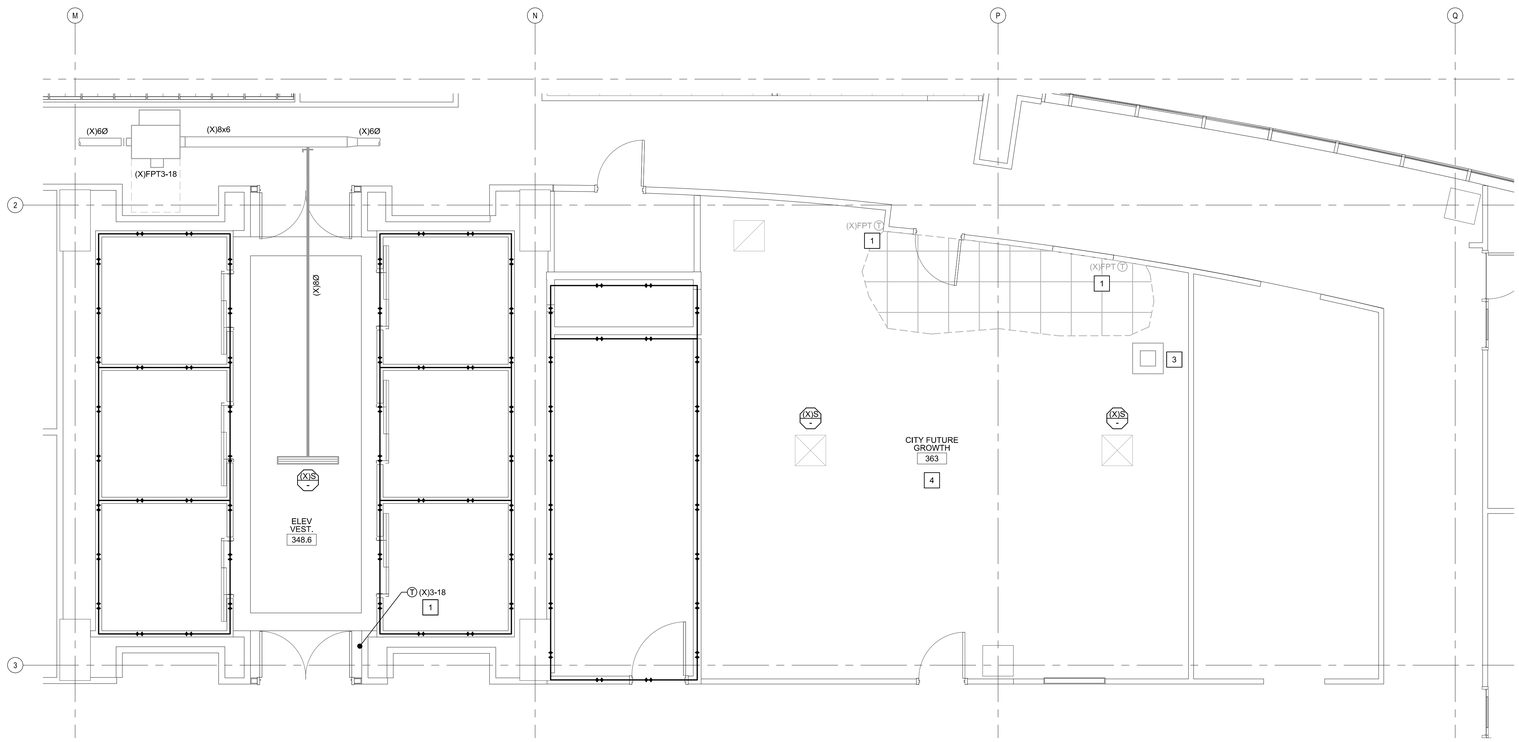
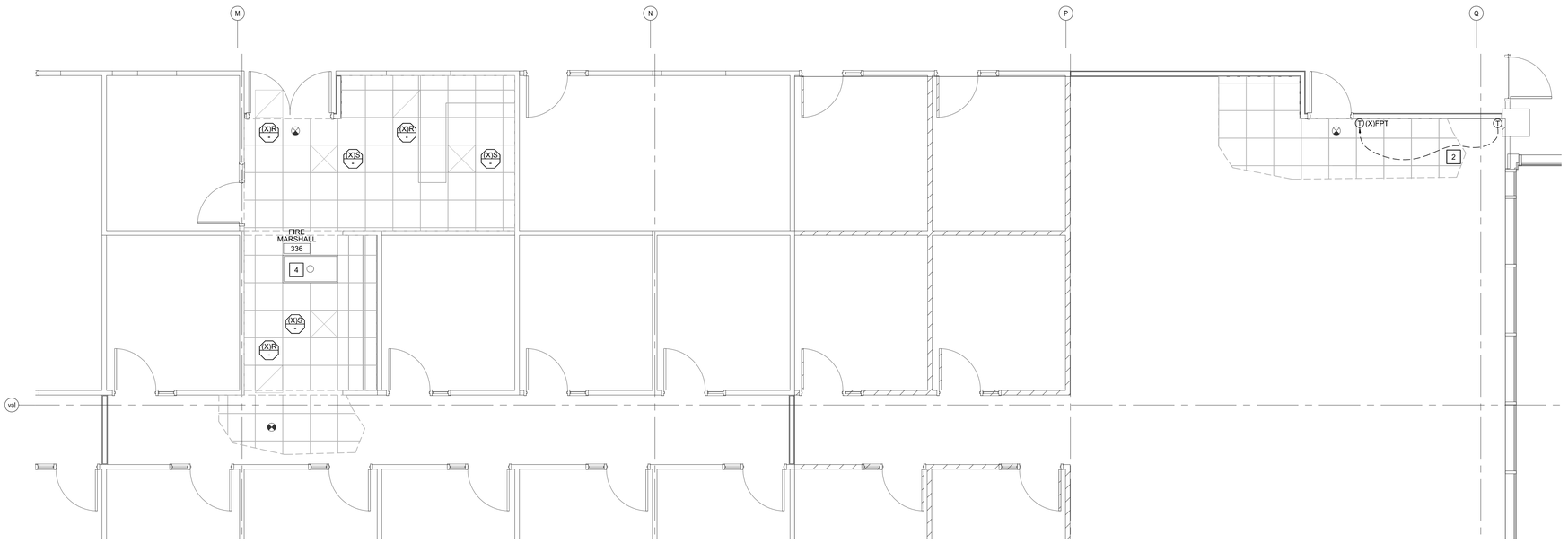


C1 **LEVEL 3 FLOOR PLAN**
1/4" = 1'-0"
0 2' 4' 8'
PLAN NORTH



A1 **LEVEL 3 FLOOR PLAN**
1/4" = 1'-0"
0 2' 4' 8'
PLAN NORTH

GENERAL NOTES

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KEYED NOTES

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3. PROTECT EXISTING EXHAUST FAN IN PLACE DURING RENOVATIONS.
4. NO MECHANICAL WORK IN THIS AREA.

CITY OF WILMINGTON NORTH CAROLINA

CITY OF WILMINGTON

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DAVID M. HILL

CITY OF WILMINGTON SKYLINE CENTER UPFIT

929 N Front Street, Wilmington, North Carolina 28401

LS3P PROJECT: 7701-230545

Δ	DATE	DESCRIPTION

SHEET NAME:
MECHANICAL
ENL. PLANS
LEVEL 3

ORIG SUBMISSION: 2024.08.07

SHEET:
MH407

100% PERMIT DRAWINGS

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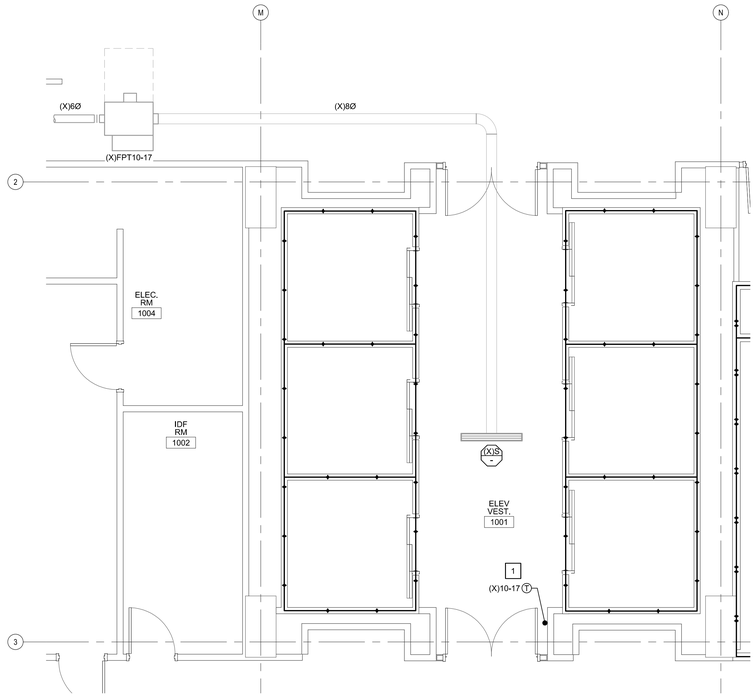
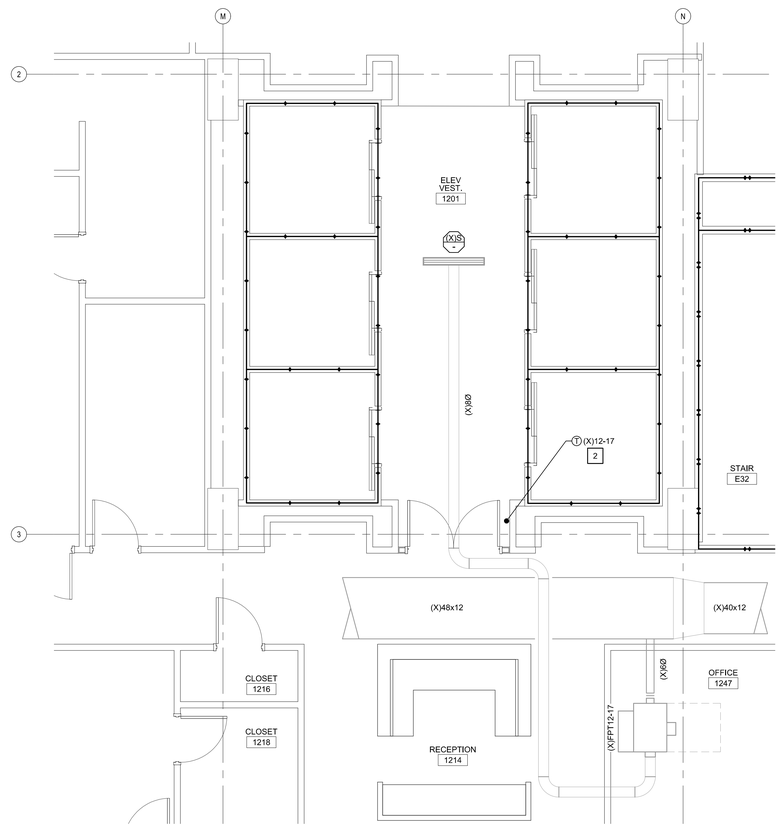
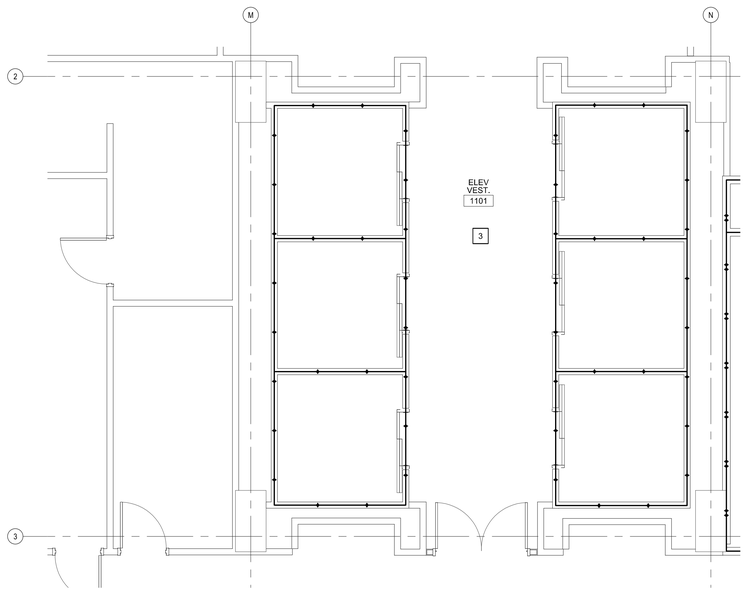


C1 **ENL PLAN - ELEV VEST 1001**
1/4" = 1'-0"
0 2' 4' 8'
PLAN NORTH



C4 **ENL PLAN - ELEV VEST 1201**
1/4" = 1'-0"
0 2' 4' 8'
PLAN NORTH



A1 **ENL PLAN - ELEV VEST 1101**
1/4" = 1'-0"
0 2' 4' 8'
PLAN NORTH

GENERAL NOTES

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3. NO MECHANICAL WORK IN THIS AREA.

CITY OF WILMINGTON NORTH CAROLINA

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NC# P-0506

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DAVID M. HILL

CITY OF WILMINGTON
SKYLINE CENTER UPFIT
929 N Front Street, Wilmington, North Carolina 28401

LS3P PROJECT: 7701-230545

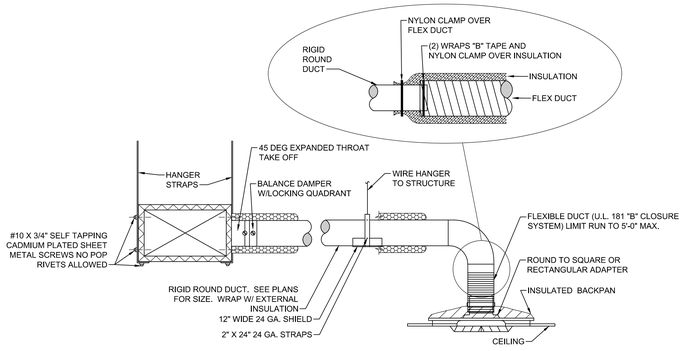
Δ	DATE	DESCRIPTION

SHEET NAME:
MECHANICAL
ENL. PLANS
LEVELS 3, 10, 11
AND 12

ORIG SUBMISSION: 2024.08.07

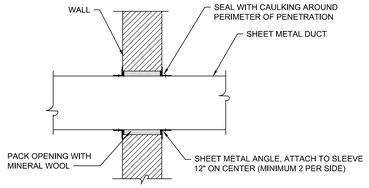
SHEET:
MH408

100% PERMIT DRAWINGS



D1 TYPICAL DIFFUSER CONNECTION DETAIL

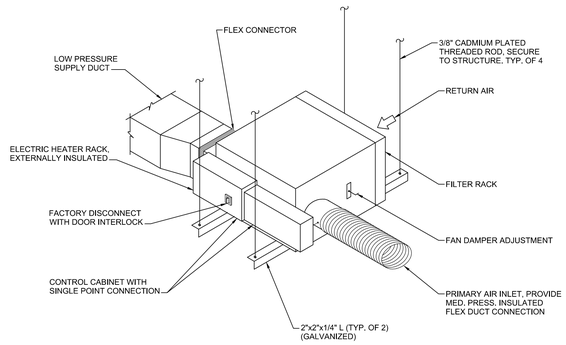
NOT TO SCALE



NOTE: EXTERNALLY WRAPPED DUCT INSTALLED SIMILARLY, BLANKET INSULATION SHALL BE INSTALLED OVER ANGLES AND SEALED TO WALL BARRIER.

D3 TYPICAL DUCT THROUGH NON-RATED WALL DETAIL

NOT TO SCALE



NOTE:
MAINTAIN MANUFACTURES RECOMMENDED CLEARANCE AND VERIFY INSTALLATION INSTRUCTIONS FOR HANGING SO THAT ALL NECESSARY ACCESS PANELS ARE NOT OBSTRUCTED.

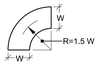
D4 TYPICAL FAN POWERED TERMINAL w/ELECTRIC HEAT DETAIL

NOT TO SCALE

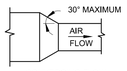
DUCT OFFSETS

(BRANCH FLOW LESS THAN 25% OF MAIN FLOW)

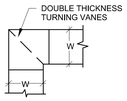
BRANCH TAKE-OFFS



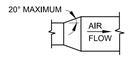
RADIUS ELBOW



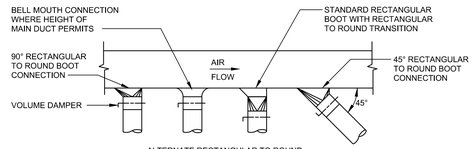
CONVERGING FLOW



RECTANGULAR ELBOW

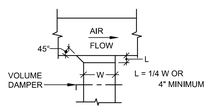


DIVERGING FLOW



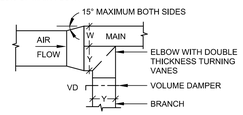
ALTERNATE RECTANGULAR TO ROUND DUCT BRANCH CONNECTIONS

(BRANCH FLOW LESS THEN 25% OF MAIN FLOW)



STANDARD RECTANGULAR DUCT BRANCH TAKE-OFF

(BRANCH FLOW LESS THAN 25% OF MAIN FLOW)



STANDARD RECTANGULAR BRANCH TAKE-OFF

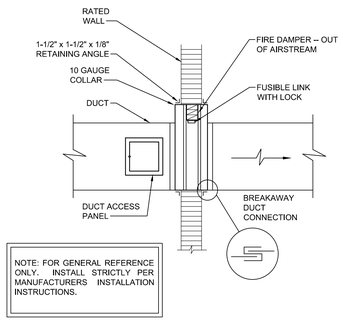
(BRANCH FLOW GREATER THAN 25% OF MAIN FLOW)

C1 RECTANGULAR DUCT FITTING DETAILS

NOT TO SCALE

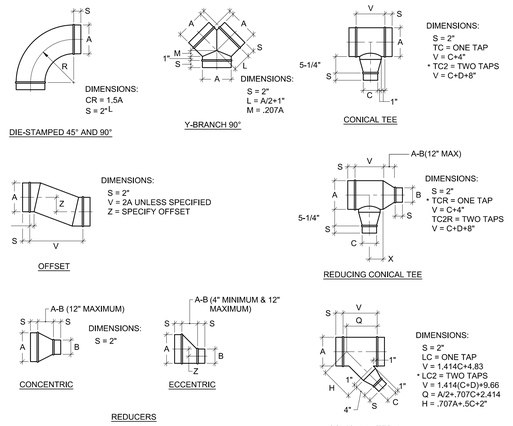
C2 ROUND/RECT. DUCT TAKE-OFF FITTING DETAILS

NOT TO SCALE



A1 FIRE DAMPER DETAIL

NOT TO SCALE



A2 ROUND DUCT FITTING DETAILS

NOT TO SCALE

GENERAL DEMOLITION NOTES

1. THE MECHANICAL CONTRACTOR SHALL REVIEW THE DRAWINGS AND SPECIFICATIONS FOR DEMOLITION REQUIREMENTS AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER. REMOVE ALL EQUIPMENT, DUCTWORK, SUPPORTS, CONTROLS, ACCESSORIES, ETC.,., AND MECHANICAL ITEMS MADE OBSOLETE BY THESE ALTERATIONS AS SHOWN IN THE MECHANICAL DRAWINGS, ALL ITEMS TO BE REMOVED OR MODIFIED MAY NOT BE SHOWN, HOWEVER, THIS CONTRACTOR SHALL REMOVE ANY MECHANICAL WORK AS REQUIRED BY THE CONSTRUCTION OR AS DIRECTED BY THE OWNER OR THE ENGINEER. SURVEY THE AFFECTED AREAS BEFORE SUBMITTING A BID.
2. SCHEDULING OF DEMOLITION - COORDINATE SCHEDULING OF MECHANICAL DEMOLITION WORK WITH THE OWNER AND GENERAL CONTRACTOR SO AS TO MINIMIZE DISRUPTION OF THE OWNER'S USE OF THE FACILITIES AND MAINTAIN THE CONSTRUCTION SEQUENCE OF THE GENERAL CONTRACTOR, SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INSTRUCTIONS CONCERNING PHASING AND SEQUENCE OF WORK.
3. EXISTING MECHANICAL SYSTEMS - VERIFY CONDITION OF EXISTING MECHANICAL SYSTEMS TO BE REUSED SO THAT COMPLETE, FULLY OPERATIONAL AND RELIABLE SYSTEMS ARE OBTAINED AT THE COMPLETION OF THE WORK. NOTIFY ARCHITECT/ENGINEER OF ANY SYSTEMS FOUND TO BE OF QUESTIONABLE CONDITION.
4. ALL EXISTING MECHANICAL EQUIPMENT AND DEVICES SHALL REMAIN UNLESS SPECIFICALLY NOTED TO BE REMOVED.
5. DEMOLISHED MATERIALS - UNLESS SPECIFICALLY REQUESTED BY THE OWNER, ALL DEMOLISHED MECHANICAL MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.
6. CUTTING AND PATCHING - PERFORM CUTTING AND PATCHING FOR MECHANICAL WORK SO AS TO MINIMIZE DAMAGE TO CEILINGS, FLOORS AND WALLS. REFER TO ARCHITECTURAL DRAWINGS AND GENERAL SPECIFICATIONS SECTIONS FOR SPECIFIC RESPONSIBILITIES REGARDING CUTTING AND PATCHING.
7. THESE DRAWINGS ARE COMPILED BY THE ARCHITECT/ENGINEER FROM THE OWNER'S AS-BUILT RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE CONTRACTOR SHALL VERIFY ALL DUCTWORK, EQUIPMENT LOCATIONS, DIMENSIONS AND ALL FIELD CONDITIONS AFFECTING HIS WORK.
8. WHERE MECHANICAL SYSTEMS PASS THROUGH THE DEMOLITION AREAS TO SERVE OTHER PORTIONS OF THE PREMISES, THEY SHALL REMAIN OR BE SUITABLY RELOCATED AND THE SYSTEM RESTORED TO NORMAL OPERATION. ADVISE THE ARCHITECT/ENGINEER IMMEDIATELY IF SUCH CONDITIONS ARE UNCOVERED BEFORE PROCEEDING WITH ADDITIONAL WORK.
9. PROTECT ALL EXISTING LIFE SAFETY SYSTEMS, FIRE ALARM AND PUBLIC ADDRESS SYSTEMS AND MAINTAIN THEM IN OPERATION THROUGHOUT THE PROGRESS OF THE WORK. NOTIFY THE OWNER AND ARCHITECT/ENGINEER IN WRITING OF SHUTDOWNS ARE REQUIRED PRIOR TO ANY OUTAGE OF SERVICE. WHERE THE DURATION OF A PROPOSED OUTAGE CANNOT BE TOLERATED BY THE OWNER, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED MAINTAINING SERVICE.
10. SURVEY THE EFFECTED AREAS BEFORE SUBMITTING A BID AS ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DEPICTED ON THE DRAWINGS AND SOME UNUSUAL CONDITIONS EXIST.

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NOT FOR CONSTRUCTION
PROGRESS DRAWING - DO NOT USE FOR CONSTRUCTION
DONALD M. HILL

CITY OF WILMINGTON SKYLINE CENTER UPFIT
929 N Front Street, Wilmington, North Carolina 28401
LS3P PROJECT: 7701-230545

Δ	DATE	DESCRIPTION

SHEET NAME:
DETAILS AND DEMOLITION NOTES

ORIG SUBMISSION: 2024.08.07

SHEET:
M-501

100% PERMIT DRAWINGS