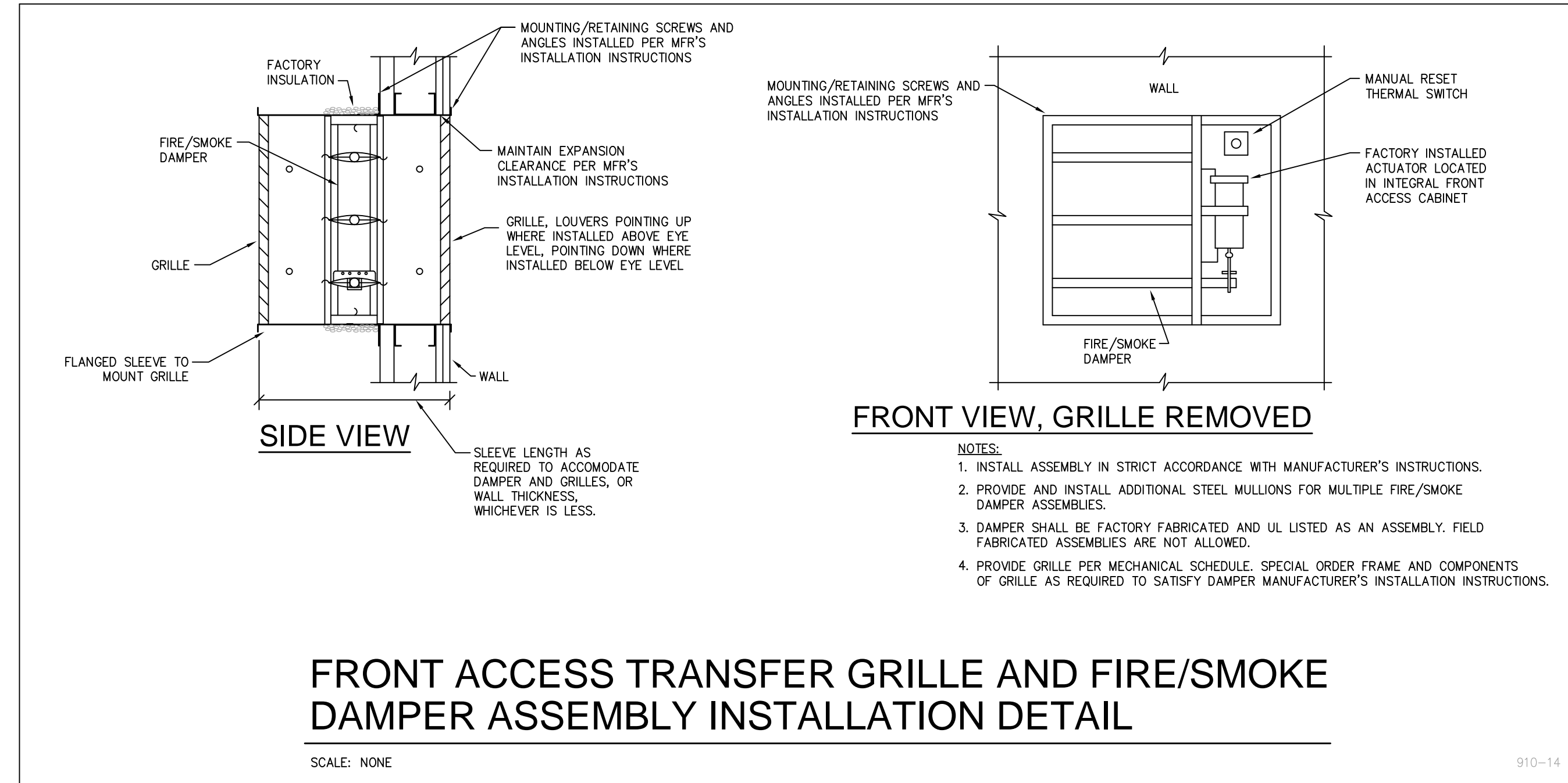


HVAC LEGEND			
(Not all symbols listed below are used on these drawings)			
ABBR.	SYMBOL	DESCRIPTION	DESCRIPTION
HWS	—HWS—	HEATING WATER SUPPLY PIPING	SUPPLY DUCT UP / SUPPLY DUCT DOWN
HWR	---HWR---	HEATING WATER RETURN PIPING	RETURN/EXHAUST DUCT UP / RETURN/EXHAUST DUCT DOWN
HTWS	---HTWS---	HIGH TEMPERATURE HOT WATER SUPPLY PIPING	ROUND DUCT UP / ROUND DUCT DOWN
HTWR	---HTWR---	HIGH TEMPERATURE HOT WATER RETURN PIPING	INDICATES FLAT OVAL DUCTWORK
CWS	---CWS---	CHILLED WATER SUPPLY PIPING	FLEXIBLE DUCT CONNECTION
CWR	---CWR---	CHILLED WATER RETURN PIPING	BACKDRAFT DAMPER
D	---D---	COOLING COIL DRAIN PAN PIPING	48F12 TEMP. CONTROL DAMPER-OPOSED BLADE
C	---C---	CONDENSER WATER SUPPLY PIPING	TCD TEMP. CONTROL DAMPER-PARALLEL BLADE
CR	---CR---	CONDENSER WATER RETURN PIPING	Louver with screen
LPS	---LPS---	LOW PRESSURE STEAM SUPPLY PIPING (0-15#)	MVD MANUAL VOLUME DAMPER
LPC	---LPC---	LOW PRESSURE CONDENSATE RETURN PIPING	MOTOR OPERATED DAMPER
MPS	---MPS---	MEDIUM PRESSURE STEAM SUPPLY PIPING (15#-60#)	SPIN-IN FITTING WITH MVD
MPC	---MPC---	MEDIUM PRESSURE CONDENSATE RETURN PIPING	FD DUCT FIRE DAMPER
HPS	---HPS---	HIGH PRESSURE STEAM SUPPLY PIPING (61#-125#)	FSD COMBINATION DUCT SMOKE & FIRE DAMPER
HPC	---HPC---	HIGH PRESSURE CONDENSATE RETURN PIPING	SD DUCT SMOKE DAMPER
PC	---PC---	PUMPED CONDENSATE PIPING	DUCT SMOKE DETECTOR
BBD	---BBD---	BOILER BLOWDOWN PIPING	DAD DUCT ACCESS DOOR
BF	---BF---	BOILER FEED WATER PIPING	TURNING VANES IN DUCT ELBOW
RL	---RL---	REFRIGERANT LIQUID PIPING	
RS	---RS---	REFRIGERANT SUCTION PIPING	EP ELECTRIC-PNEUMATIC CONTROL VALVE
RHG	---RHG---	REFRIGERANT HOT GAS PIPING	PE PNEUMATIC-ELECTRIC CONTROL SWITCH
TT	⊙TT	THERMOSTATIC STEAM TRAP	TEMPERATURE SENSOR
F&T	⊙F&T	FLOAT AND THERMOSTATIC STEAM TRAP	WALL MOUNTED THERMOSTAT
IBT	∇IBT	INVERTED BUCKET STEAM TRAP	UNIT MOUNTED THERMOSTAT
TCV	⊙TCV	(2 OR 3-WAY) TEMPERATURE CONTROL VALVE	HUMIDISTAT
	∇	VENTURI METER	UNDERCUT DOOR
	⊙	CALIBRATED BALANCING VALVE	LOUVER
RSV	⊙RSV	REFRIGERANT SERVICE VALVE	R DUCT RISE
DPS	⊙DPS	DIFFERENTIAL PRESSURE SWITCH	D DUCT DROP
MAV	⊙MAV	MANUAL AIR VENT	A.L. ACOUSTICALLY LINED DUCTWORK
AAV	⊙AAV	AUTOMATIC AIR VENT	TCOAD TEMPERATURE CONTROL OUTSIDE AIR DAMPER
FS	⊙FS	FLOW SWITCH	TCRAD TEMPERATURE CONTROL RETURN AIR DAMPER
EJ	⊙EJ	EXPANSION JOINT	TCOEA TEMPERATURE CONTROL EXHAUST AIR DAMPER
BJ	⊙BJ	BALL JOINT EXPANSION COMPENSATOR	SP IN WC STATIC PRESSURE IN INCHES WATER COLUMN
			SD SUPPLY AIR DEVICE
			RG RETURN/EXHAUST AIR DEVICE

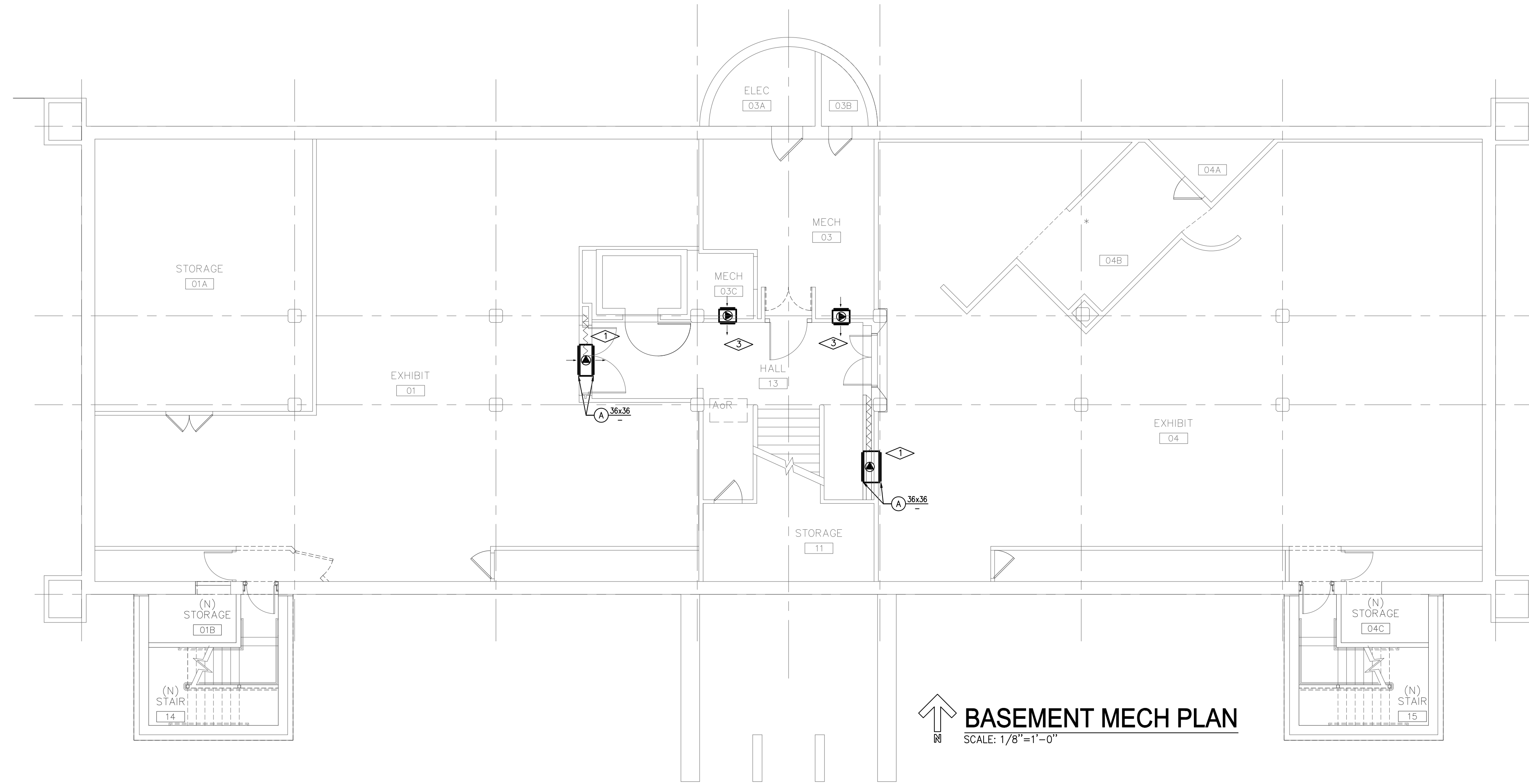
GENERAL LEGEND			
(Not all symbols listed below are used on these drawings)			
ABBR.	SYMBOL	DESCRIPTION	DESCRIPTION
	△	SECTION DESIGNATION	□
	△	SECTION DRAWN ON THIS SHEET	XX
	△	SECTION OUT ON THIS SHEET	—X—
	⊙	RISER DIAGRAM NUMBER	— —
	⊙	SHEET RISER IS DRAWN ON	— —
	⊙	EQUIPMENT UNIT IDENTIFICATION	— —
	⊙	EQUIPMENT UNIT NUMBER	— —
	⊙	DIFFUSER IDENTIFICATION	PRV
	⊙	DIFFUSER NECK DIAMETER	PRV
	⊙	DIFFUSER CFM	PRV
(E)		EXISTING	◆
(N)		NEW	GV
(R)		RELOCATED	∇
(F)		FUTURE	GLV
	⊙	POINT OF CONNECTION, NEW TO EXISTING	BFV
	→	DIRECTION OF FLOW IN PIPE	BV
	///	DUCTWORK, PIPING AND EQUIPMENT TO BE REMOVED	CV
DIA	∅	DIAMETER	◆
WAD	□	WALL ACCESS DOOR	◆
NIC	—	NOT IN CONTRACT	◆
AFF	—	ABOVE FINISHED FLOOR	P/T
GC	—	GENERAL CONTRACTOR	— —
MC	—	MECHANICAL CONTRACTOR	— —
EC	—	ELECTRICAL CONTRACTOR	— —
TC	—	TEMPERATURE CONTROL CONTRACTOR	— —
KCC	—	KITCHEN EQUIPMENT CONTRACTOR	— —
C	—	COMMON	— —
NC	—	NORMALLY CLOSED	C.A.P.
NO	—	NORMALLY OPEN	⊙
			⊙
			⊙



CABINET UNIT HEATER SCHEDULE (ELECTRIC)								
DESIG.	MFR.	MODEL	ARRANG.	RECESS DEPTH	KW	CFM	CONTROL	REMARKS
CUH-1	INDEECO	CUJ-922U03	A3 (NOTE 1)	NONE	3	250	INTEGRAL T-STAT	NOTE 3
CUH-2	INDEECO	CUJ-922U02	B2 (NOTE 2)	NONE	2	250	REMOTE T-STAT	NOTE 3, 4

NOTES:  
 1. CEILING MOUNTED, HORIZONTAL AIRFLOW.  
 2. WALL MOUNTED, DOWNFLOW, TOP INLET, BOTTOM FRONT OUTLET.  
 3. INTEGRAL SERVICE DISCONNECT.  
 4. 24 V TRANSFORMER AND CONTROL RELAY.

AIR DEVICE SCHEDULE									
DESIG.	MFR.	TYPE	MODEL	FRAME	MATERIAL	FINISH	DAMPER TYPE	ACCESS.	REMARKS
A	PRICE	LOUVER FACE RETURN	530L	FLANGED	STEEL	WHITE	-	-	



**BASEMENT MECH PLAN**  
SCALE: 1/8"=1'-0"

**GENERAL NOTES:**

1. WORK INCLUDED IN THE CONTRACT IS DENOTED IN BOLD. EXISTING CONDITIONS TO REMAIN ARE DENOTED LIGHTLY.
2. A DETAILED M.O.P. IS REQUIRED WHEN A CONSTRUCTION ACTIVITY AFFECTS THE SAFETY OF THE OCCUPANTS, MUSEUM COLLECTIONS OR VALUABLE CONTENTS OR ANY SYSTEM WHICH SUPPORTS THESE SYSTEMS, OR ESSENTIALLY AFFECTS THE BUILDING MANAGEMENT, OPERATIONS OR SECURITY.
3. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK.
4. COORDINATE WORK WITH ALL TRADES.
5. CONTRACTOR SHALL NOT SHUT DOWN / TAKE OUT OF SERVICE ANY SYSTEMS WITHOUT FIRST COORDINATING WITH OWNER AND PREPARING M.O.P.

**KEY NOTES:**

- 1 TRANSFER GRILLES WITH SMOKE/FIRE DAMPER.
- 2 HORIZONTAL CABINET UNIT HEATER MOUNTED ON DECK/STAIR LANDING ABOVE.
- 3 REPLACE EXISTING GRILLES WITH NEW TRANSFER GRILLES WITH SMOKE/FIRE DAMPER.

**HENDERSON BUILDING** UCB #: PR 004804  
EXTERIOR STAIR TOWERS | University of Colorado | Boulder, Colorado

ISSUED FOR	DATE
SCHEMATIC DESIGN	02.17.10
DESIGN DEVELOPMENT	04.09.10
CD OWNER REVIEW	04.28.10
100% CD	05.13.10

PROJECT NO.	DATE
090350	04.09.10
DRAWN MLS	CHECKED MVJ

SHEET TITLE  
BASEMENT & FIRST FLOOR  
MECHANICAL PLAN

SHEET NO.

**M1.1**

ISSUED FOR	DATE
SCHEMATIC DESIGN	02.17.10
DESIGN DEVELOPMENT	04.09.10
CD OWNER REVIEW	04.29.10
100% CD	05.13.10

PROJECT NO.	DATE
090350	04.09.10
DRAWN MLS	CHECKED MVJ

SHEET TITLE  
SECOND & THIRD FLOOR  
MECHANICAL PLAN

SHEET NO.

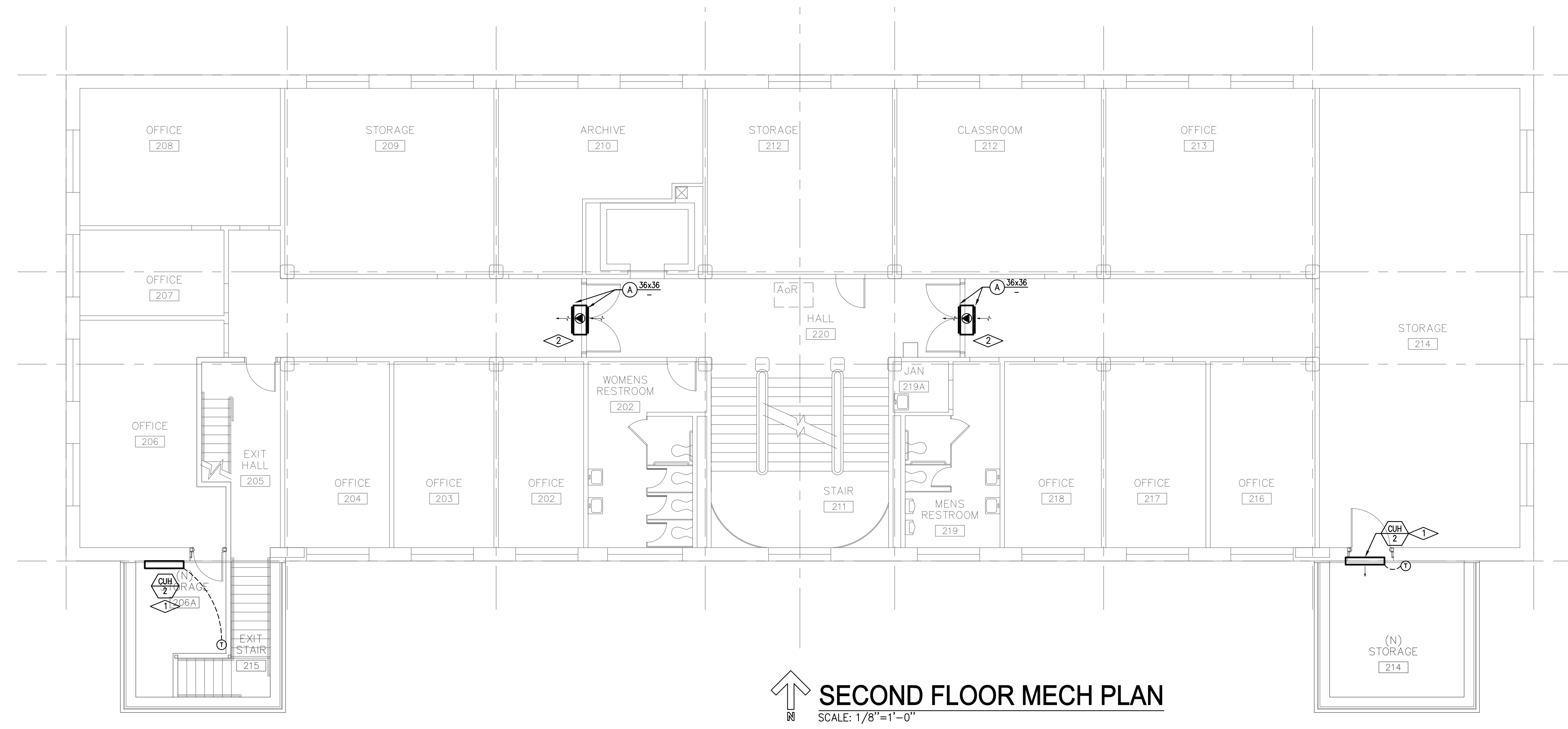
M1.2

**GENERAL NOTES:**

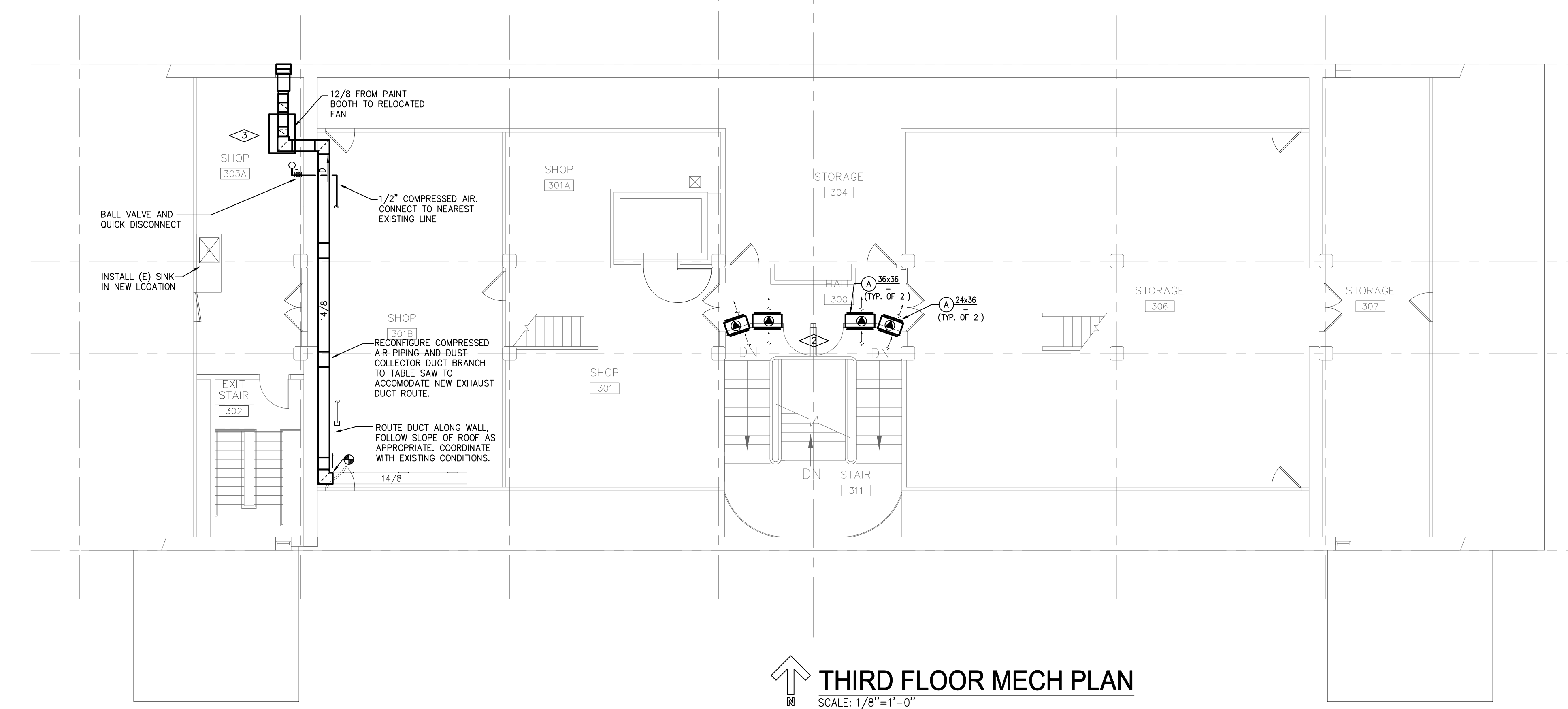
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**KEY NOTES:**

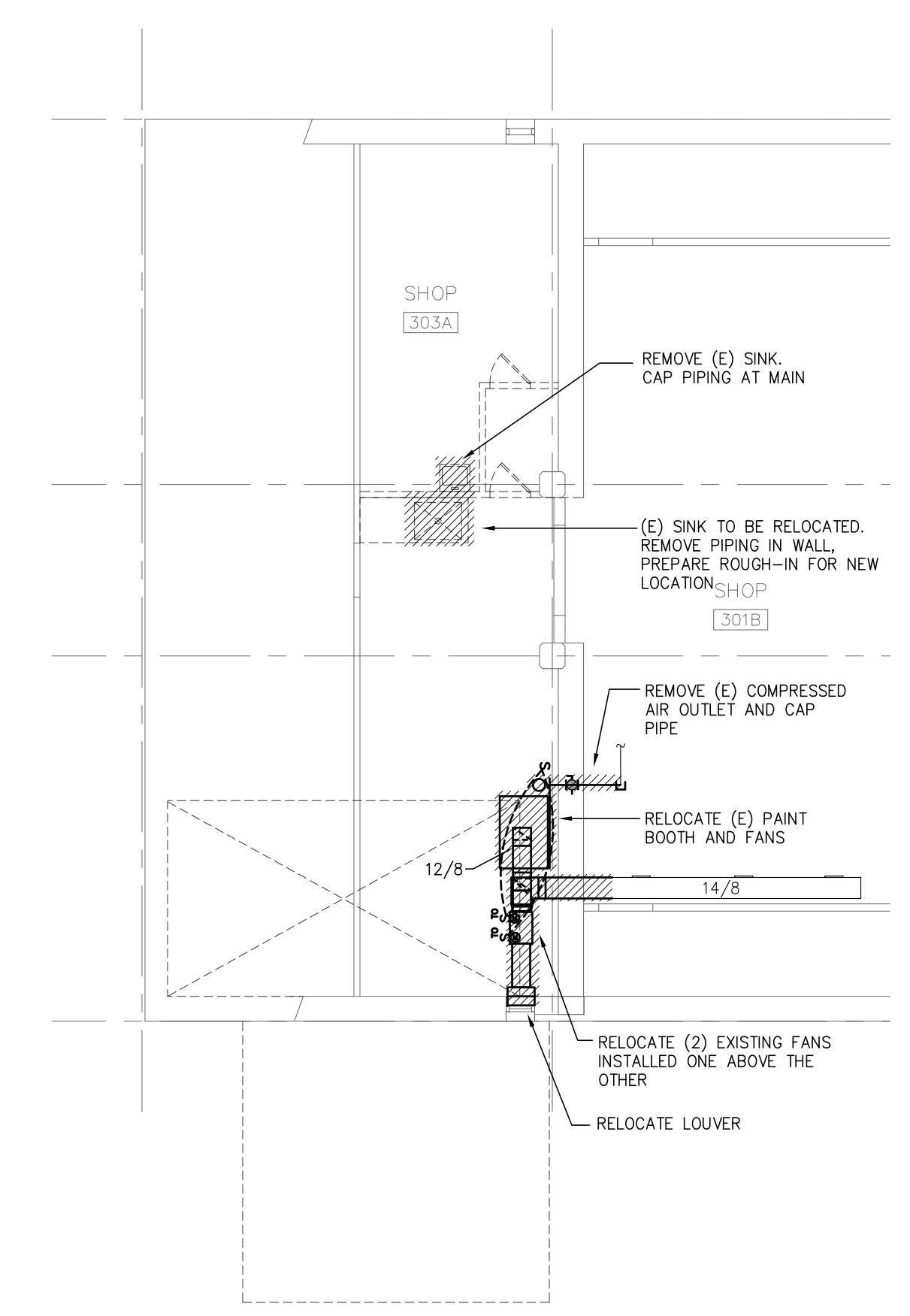
- ◇ DOWNFLOW CABINET UNIT HEATER MOUNTED ON WALL AT 10' AFF. COORDINATE LOCATION OF TSTAT WITH STORAGE UNIT.
- ◇ TRANSFER GRILLES WITH SMOKE/FIRE DAMPER. SEE DETAIL.
- ◇ RELOCATE EXISTING PAINT BOOTH, AND (2) FANS FROM SOUTH SHOP AREA. PROVIDE NEW DUCT FOR FANS AND CONNECT TO RELOCATED LOUVER.



**SECOND FLOOR MECH PLAN**  
SCALE: 1/8"=1'-0"



**THIRD FLOOR MECH PLAN**  
SCALE: 1/8"=1'-0"



**THIRD FLOOR MECH DEMO PLAN**  
SCALE: 1/8"=1'-0"