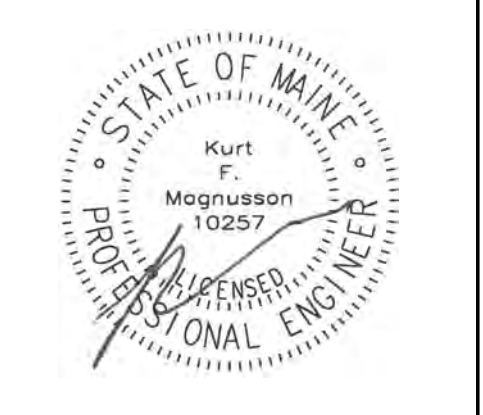


5 Milk Street
Portland, Maine 04101
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Branding / Bank Branch Interior Design:
THE ELEMENT GROUP
125 Brewery Lane
Suite #9
Portsmouth, NH 03801
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Structural Engineering:
STRUCTURAL INTEGRITY ENGINEERS
77 Oak Street
Portland, ME 04101
T. 207.774.4614

HVAC & plumbing Engineering:
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Royal River Center, Unit 10B
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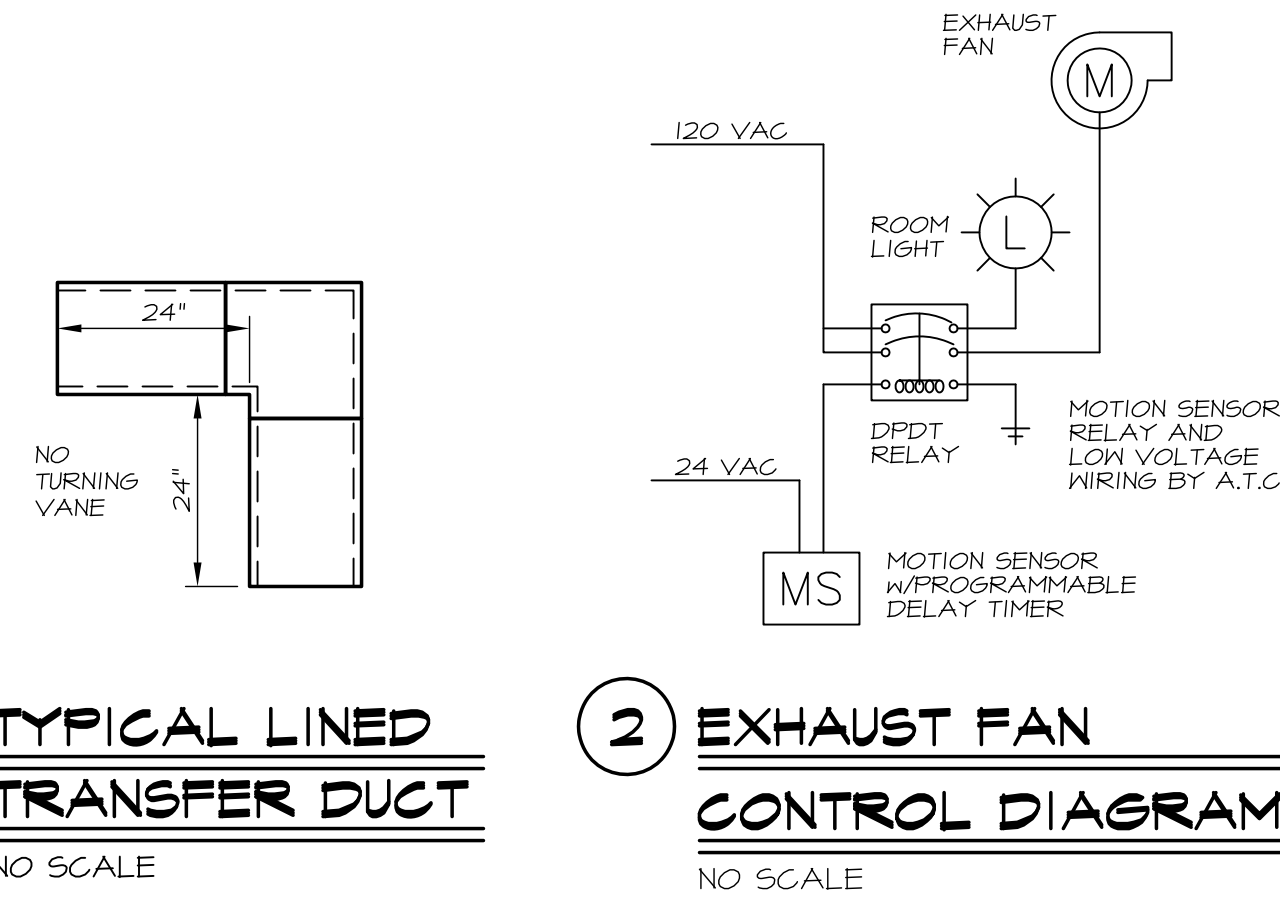


Portland Branch
27 Pearl Street
1st Floor Tenant Space
Portland, Maine

PERMIT SET
December 10, 2014

MECHANICAL DUCTWORK PLAN

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



1 TYPICAL LINED TRANSFER DUCT
NO SCALE

2 EXHAUST FAN CONTROL DIAGRAM
NO SCALE

- GENERAL NOTES**
- Mechanical Contractor shall coordinate work with all other trades.
 - All piping and ductwork shall be run concealed and on the warm side of building insulation unless shown otherwise.
 - Piping and ductwork is shown diagrammatically. Exact locations to be adjusted as required to conform to field conditions.
 - All duct sizes indicated are outside (sheet metal) dimensions.
 - All cutting and patching by the General Contractor.
 - All square duct elbows over 12 inches in width to have turning vanes.
 - Refer to Architectural Reflected Ceiling Plans for exact locations of all ceiling registers, diffusers and grilles.
 - All dimensions associated with existing conditions are approximate and are to be field verified.
 - All reductions in water pipe sizes in the direction of flow shall be accomplished with inverted eccentric reducing fittings. Do not use reducing tees.
 - Provide automatic air vents at all locations where water piping drops in the direction of flow, at all high points in the system and elsewhere as shown.
 - Provide drains at all low points in the water piping system.
 - All removed materials shall remain the property of the Owner until such time the Owner's authorized representative has reviewed the removed items and taken what the Owner wishes to retain. All remaining items shall become the property of the Contractor and shall be immediately removed from the premises by the Contractor.

AIR TERMINAL SCHEDULE

TAG	SIZE	MAX CFM	MAX NC	MAX SP	REMARKS
D1	6"Ø	160	20	0.072"	SQUARE DIFFUSER / LAY-IN PANEL
D2	8"Ø	275	20	0.072"	SQUARE DIFFUSER / LAY-IN PANEL
D3	8"Ø	275	20	0.072"	SQUARE DIFFUSER / GYPSUM CEILING
D4	10"Ø	380	20	0.060"	SQUARE DIFFUSER / LAY-IN PANEL
D5	(1) 1 1/2" SLOT	200	20	0.100"	4" SLOT DIFFUSER - 8" INLET
D6	(2) 1" SLOTS	300	20	0.063"	4" SLOT DIFFUSER - 8" INLET
D7	(2) 1" SLOTS	335	20	0.100"	4" SLOT DIFFUSER - 10" INLET
D8	(2) 2" SLOTS	400	20	0.060"	4" SLOT DIFFUSER - 12" INLET
D9	(2) 2" SLOTS	400	20	0.060"	4" SLOT DIFFUSER - 12" INLET **
D10	(2) 2 1/2" SLOTS	500	20	0.060"	4" SLOT DIFFUSER - 12" INLET
RG1	12"x12"	360	20	0.032"	FILTERED RETURN GRILLE *
RG2	16"x16"	620	20	0.032"	FILTERED RETURN GRILLE *
RG3	20"x18"	880	20	0.032"	FILTERED RETURN GRILLE *
RG4	36"x24"	1,875	20	0.032"	FILTERED RETURN GRILLE *
SG1	16" x 16"	800	20	0.070"	DOUBLE DEFLECTION SUPPLY GRILLE
SG2	36" x 18"	2,000	20	0.070"	DOUBLE DEFLECTION SUPPLY GRILLE
SR1	6" x 4"	85	20	0.090"	DOUBLE DEFLECTION SUPPLY REGISTER
SR2	6" x 6"	130	20	0.080"	DOUBLE DEFLECTION SUPPLY REGISTER

* MAXIMUM NC LEVELS ON DIFFUSERS ARE FOR HORIZONTAL THROW
 ** STATIC PRESSURE IS FOR GRILLE OR REGISTER ONLY (DOES NOT INCLUDE THE FILTER)
 ** FOR WOODEN STRIP CEILING

WATER SOURCE HEAT PUMP SCHEDULE

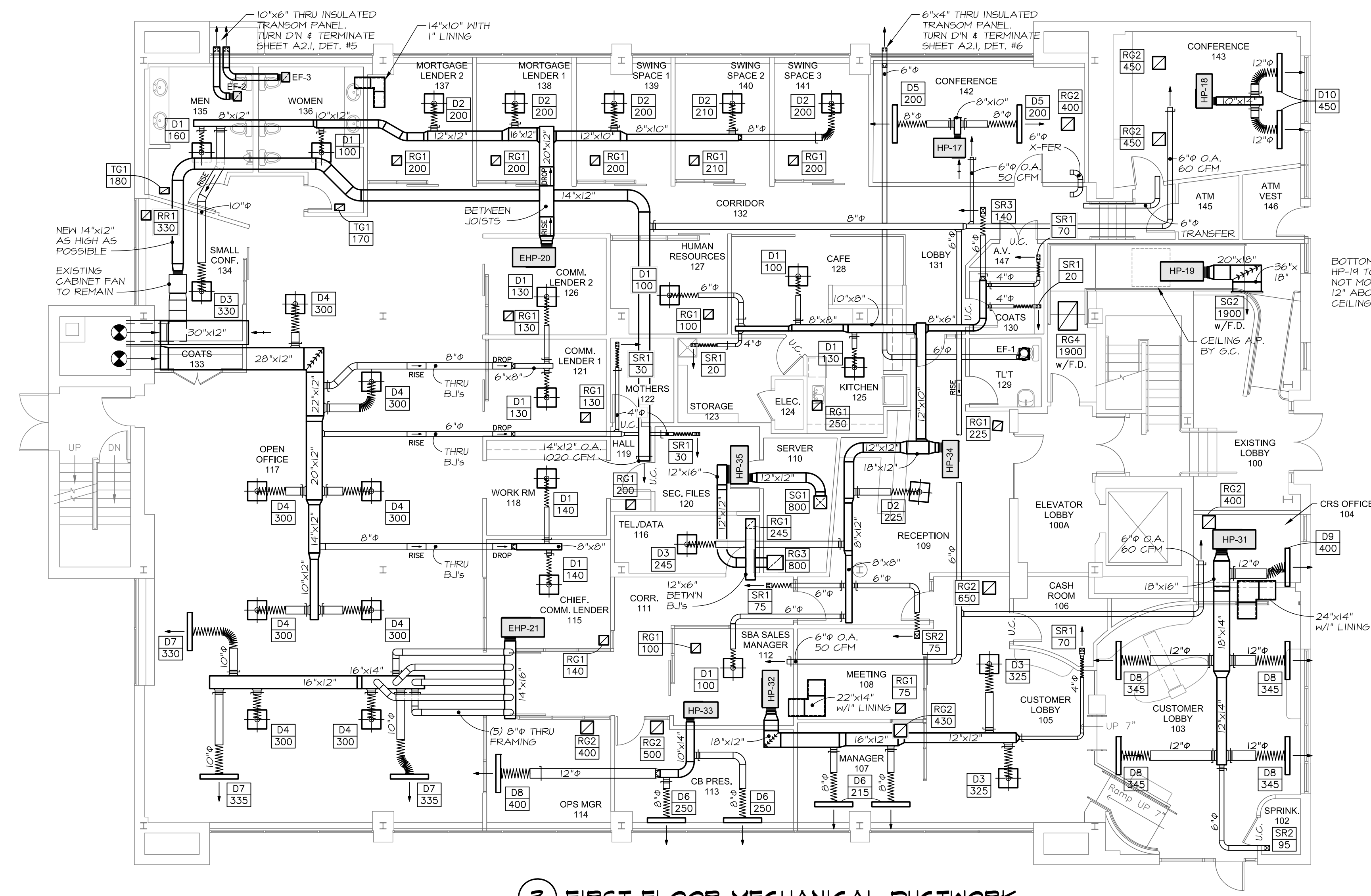
TAG	AREA SERVED	NOM. TONS	FAN			WATER FLOW		COOLING (FULL LOAD)										HEATING (FULL LOAD)										ELECTRIC		WEIGHT	REMARKS
			CFM	ESP *	HP	KW	GPM	WPD	EWT	EDB	EWB	TOTAL	SENS.	KW	HR	EER	EWT	EDB	EWB	TOTAL	HE	LAT	COP	MCA	VOLTAGE						
HP-17	142 CONFERENCE	1.0	400	0.40"	N/A	N/A	2.3	4.4	80	80.0	67.0	12,300	8,000	0.88	15,300	13,900	70.0	68.0	15,800	1.06	12,200	106.5	4.4	7.30	208V-60-1P	121	NEW HORIZONTAL UNIT				
HP-18	143 CONFERENCE	2.5	900	0.50"	1/2	N/A	5.6	4.5	80	80.0	67.0	30,100	19,700	2.09	37,300	14,400	70.0	68.0	37,700	2.41	29,400	104.6	4.6	20.30	208V-60-1P	182	NEW HORIZONTAL UNIT				
HP-19	100 EXISTING LOBBY	5.0	1,900	3/4"	1	N/A	7.0	6.5	80	80.0	67.0	58,000	43,700	4.31	72,700	13,500	70.0	68.0	69,000	4.60	53,300	101.6	4.4	40.80	208V-60-1P	303	NEW HORIZONTAL UNIT				
EHP-20	134 -> 141	4.0	1,700	1/2"	N/A	0.79	12.0	0.0	85	85.0	67.0	47,000	36,500	4.27	N/A	11.04	70.0	60.0	51,100	4.81	N/A	N/A	3.8	31.70	208V-60-1P	263	EXISTING HORIZONTAL UNIT				
EHP-21	117 OPEN OFFICE	4.0	1,700	1/2"	N/A	0.79	12.0	0.0	85	85.0	67.0	47,000	36,500	4.27	N/A	11.04	70.0	60.0	51,100	4.81	N/A	N/A	3.8	31.70	208V-60-1P	263	EXISTING HORIZONTAL UNIT				
HP-31	102, 103 & 104	5.0	1,900	3/4"	1	N/A	7.0	6.5	80	80.0	67.0	58,000	43,700	4.31	72,700	13,500	70.0	68.0	69,000	4.60	53,300	101.6	4.4	40.80	208V-60-1P	303	NEW HORIZONTAL UNIT				
HP-32	105, 106 & 107	3.0	1,150	0.60"	1/2	N/A	6.8	6.1	80	80.0	67.0	35,800	23,900	2.49	44,300	14,400	70.0	68.0	44,700	2.86	34,900	103.9	4.6	23.00	208V-60-1P	203	NEW HORIZONTAL UNIT				
HP-33	113 & 114	2.5	900	0.50"	1/2	N/A	5.6	4.5	80	80.0	67.0	30,100	19,700	2.09	37,300	14,400	70.0	68.0	37,700	2.41	29,400	104.6	4.6	20.30	208V-60-1P	182	NEW HORIZONTAL UNIT				
HP-34	108 -> 147	3.5	1,300	0.60"	3/4	N/A	7.9	7.1	80	80.0	67.0	43,500	32,800	2.90	53,300	15,000	70.0	68.0	52,400	3.39	40,800	105.2	4.5	27.60	208V-60-1P	218	NEW HORIZONTAL UNIT				
HP-35	110 SERVER	2.0	750	0.75"	1/2	N/A	3.0	5.0	80	80.0	67.0	22,900	16,700	1.79	29,000	12,800	70.0	68.0	28,100	1.78	2,200	102.6	4.6	18.50	208V-60-1P	174	NEW HORIZONTAL UNIT				

* MAXIMUM ALL NOMINAL TWO TON UNITS AND LARGER HAVE TWO STAGE COMPRESSORS

FAN SCHEDULE

TAG	AREA SERVED	TYPE	CFM	SP	SONES	RPM	WATTS	ELECTRIC	WEIGHT	REMARKS
EF-1	129 TOILET	CEILING	100	3/8"	2.2	947	83	120V-60-1P	18	OPERATE FROM MOTION SENSOR
EF-2	135 MEN	CEILING	180	1/4"	3.7	1,353	67	120V-60-1P	28	OPERATE FROM MOTION SENSOR
EF-3	136 WOMEN	CEILING	180	1/4"	3.7	1,353	67	120V-60-1P	28	OPERATE FROM MOTION SENSOR

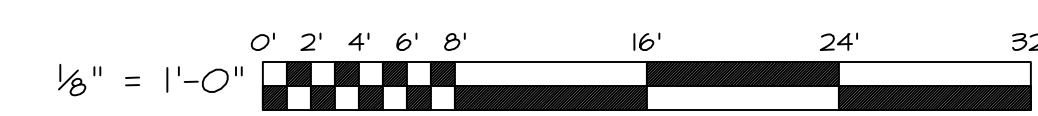
SONE RATINGS ARE MINIMUMS NOT TO BE EXCEEDED HVI SONE RATINGS WILL NOT BE ACCEPTED



3 FIRST FLOOR MECHANICAL DUCTWORK
SCALE: 1/8" = 1'-0"

FOR PERMIT USE ONLY
NOT A CONTRACT
DOCUMENT

MECHANICAL SYSTEMS ENGINEERS
ROYAL RIVER CENTER, UNIT #10B
10 FOREST FALLS DRIVE
YARMOUTH, MAINE 04096
FACEBOOK: MECHANICAL SYSTEMS ENGINEERS
207-846-1441
M.S.E. Proj. 1437
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