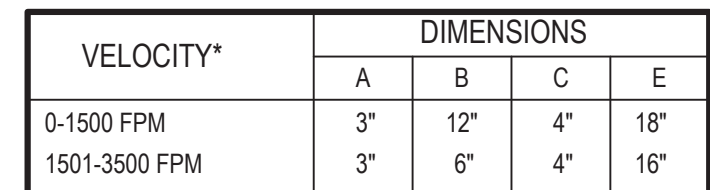


SCALE: NTS



1. CONFORM TO MANUFACTURER'S RECOMMENDATIONS FOR PIPE SIZING AND INSTALLATION.
2. SINGLE CIRCUIT SHOWN, MULTIPLE CIRCUIT INSTALLATIONS SIMILAR.

4 SCALE:NTS



* UNLESS A LOWER LEVEL IS SET BY MANUFACTURER OR LISTING AGENCY

* UNLESS A LOWER LEVEL IS SET BY MANUFACTURER OR LISTING AGENCY

8 SCALE: NTS



1. DUCTS SHALL NOT BE HUNG FROM OR SUPPORTED BY HUNG CEILING.
2. FOR DUCTS NOT EXCEEDING 2 SQ. FT. IN CROSS- SECTIONAL AREA, HANGERS SHALL BE OF METAL NOT LESS THAN 1/16".
3. FOR DUCTS LARGER THAN 2 SQ. FT. IN CROSS- SECTIONAL AREA, HANGERS SHALL BE OF METAL NOT LESS THAN 1" x 1/8".
4. FOR ALL DUCTS, HANGERS SHALL BE TURNED UNDER AND FASTENED TO THE BOTTOM OF DUCTS AS SHOWN ABOVE.
5. WHERE CROSS-SECTIONAL AREA OF DUCT EXCEEDS 8 SQ. FT., HANGERS SHALL BE SPACED NOT MORE THAN 4 FT. ON CENTERS.

9 SCALE: NTS

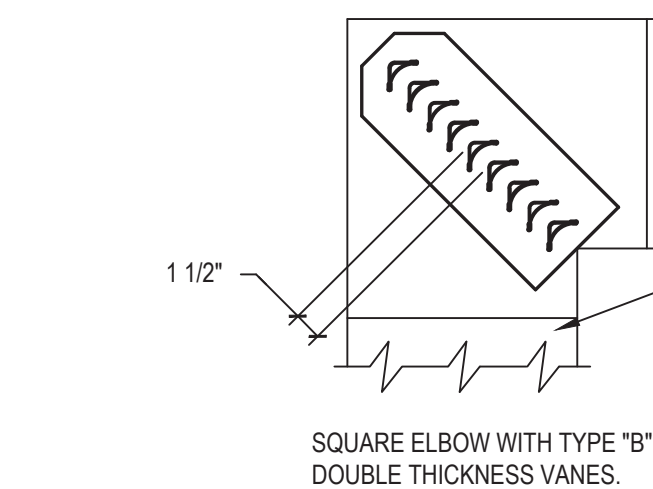


1. CONTRACT 'M' TO PROVIDE EQUIPMENT SUPPORT RAILS TO CONTRACT 'G' FOR INSTALLATION. CONTRACT 'G' TO FLASH EQUIPMENT RAILS INTO EXISTING ROOF.
2. CONTRACT 'M' TO COORDINATE LOCATIONS WITH CONTRACT 'G' PRIOR TO INSTALLATION
3. EQUIPMENT BEING MOUNTED ON ROOF RAILS SHALL BE BOLTED.



1. ALL COMPONENTS SHALL BE ENCLOSED WITHIN UNIT VENTILATOR CABINET.

SCALE: NTS



PREFERENCE FOR SECURING EDGE 1ST WELD
OR 2ND RIVET

DIMPLES IN PLATE TO ALIGN VANES

NOTE:

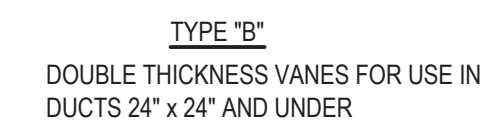
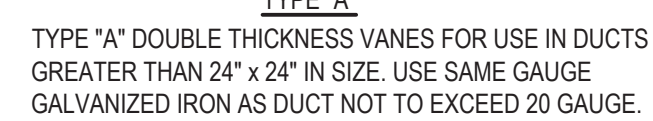
USE GALVANIZED STEEL FOR VANES IN EITHER STEEL OR ALUMINUM DUCTWORK.

10 SCALE: NTS

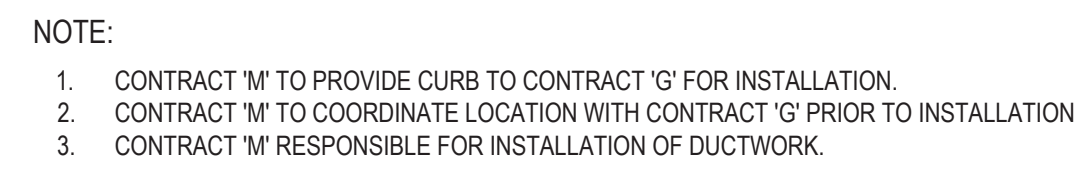


1. CURB EXTENSION TO ADAPT EXISTING CURB DIMENSIONS TO FAN BASE DIMENSIONS.

7 SCALE: NT



DOUBLE THICKNESS VANES FOR USE IN
DUCTS 24" x 24" AND UNDER



15 Round Gooseneck Detail
SCALE: NTS

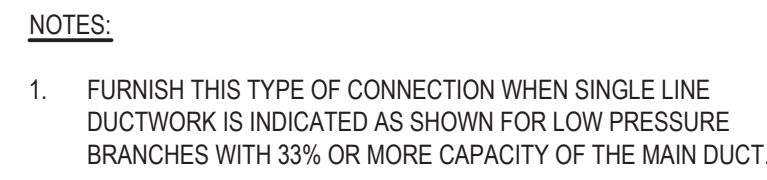


Diagram illustrating the components of a hanger rod assembly, showing two configurations: a standard assembly (left) and an improved assembly (right).

Standard Assembly (Left):

- HANGER ROD
- LOCKING NUT
- CLEVIS HANGER
- SUPPORT NUT
- TUBING
- PLASTIC COATING TO PREVENT CONTACT BETWEEN TUBING AND HANGER

Improved Assembly (Right):

- HANGER ROD
- LOCKING NUT
- CLEVIS HANGER
- SUPPORT NUT
- TUBING
- VAPOR BARRIER INSULATION
- 18 GAUGE ZINC COATED SHEET STEEL SADDLE AT LEAST 12" LONG

A detailed technical cross-section diagram of a fire-rated floor penetration assembly for a pipe or conduit. The diagram shows a vertical pipe or conduit passing through a fire-rated floor. The assembly includes a sleeve with a firestop sealant at the top, an escutcheon, and a fire-rated floor. The pipe is secured with a 1/4" bolt fastener every other tab, a collar clamp, and a retaining collar. The pipe is wrapped with intumescent wrap (2 layers, each layer cut to fit and secured with wrap tape) and insulation. The floor is labeled as a fire-rated floor. The pipe is labeled as a schedule 40 pipe sleeve. The insulation is labeled as insulation. The firestop sealant is labeled as sleeve with firestop sealant as specified. The escutcheon is labeled as escutcheon. The floor is labeled as fire rated floor. The pipe is labeled as schedule 40 pipe sleeve. The intumescent wrap is labeled as intumescent wrap as specified (2 layers, each layer cut to fit and secured with wrap tape.). The insulation is labeled as insulation. The bolt fastener is labeled as 1/4" BOLT FASTEN EVERY OTHER TAB. The collar clamp is labeled as COLLAR CLAMP. The retaining collar is labeled as RETAINING COLLAR. The pipe or conduit is labeled as PIPE OR CONDUIT.

Labels in the diagram include:

- SLEEVE WITH FIRESTOP SEALANT AS SPECIFIED
- ESCUTHEON
- FIRE RATED FLOOR
- SCHEDULE 40 PIPE SLEEVE
- INTUMESCENT WRAP AS SPECIFIED (2 LAYERS, EACH LAYER CUT TO FIT AND SECURED WITH WRAP TAPE.)
- INSULATION
- PIPE OR CONDUIT
- RETAINING COLLAR
- COLLAR CLAMP
- 1/4" BOLT FASTEN EVERY OTHER TAB

FINNED TUBE RADIATION/CONVECTORS

EQUIPMENT NO.	AREA SERVED	QUANTITY	PERFORMANCE/CONSTRUCTION REQUIREMENTS					BASIS OF DESIGN INFORMATION				REMARKS
			ACTIVE ELEMENT LENGTH (FT.)	FIN SPACING (FINS / FT.)	AIR DATA		STEAM DATA	MNF	MODEL NO.	NO. OF ROWS HIGH	NOMINAL DIMENSIONS L x W x H	
					ENT. DB. TEMP. (DEG. F)	TOTAL CAPACITY (MBH)						
FT-1	ART ROOM 307, CLASSROOM 313	8	3	48	65	5.67	1	SLANT/FIN	355-14	2	36" x 3.25" x 3.25"	1-2
FT-2	CLASSROOMS 105 AND 203	4	5	48	65	9.45	1	SLANT/FIN	355-14	2	60" x 3.25" x 3.25"	1-2
FT-3	CLASSROOM 303	2	6	48	65	11.3	1	SLANT/FIN	355-14	2	72" x 3.25" x 3.25"	1-2

NOTES:

1. RUN ENCLOSURES CONTINUOUSLY FROM WALL TO WALL
2. PROVIDE END CAPS, CORNER PIECES AND OTHER TRIM

CONDENSATE PUMPS

EQUIPMENT NO.	LOCATION	QTY.	DISCHARGE SIZE	SHUTOFF FT / PSI	BASIS OF DESIGN INFORMATION								REMARKS
					MANUFACTURER	MODEL NO.	NOMINAL DIMENSIONS L x W x H (IN.)	NOMINAL OPERATING WEIGHT (LBS.)	ELECTRICAL DATA				
									VOLTS	HP	AMPS	WATTS	
CP-1 TO CP-32	REFER TO PLANS	32	3/8" O.D. BARBED	20 / 8.6	LITTLE GIANT	VCCA-20-P	12 X 5 X 5.25	4.5	115	1/30	1.5	93	1-3

NOTES:

1. PUMP TO BE POWERED BY SEPARATE POWER FEED
2. UNIT TO BE HARDWIRED
3. AUTOMATIC SAFETY CONDENSATE OVERFLOW SWITCH

KILN EXHAUST

EQUIPMENT NO.	LOCATION	MNF	MODEL NO.	CONTROLLER	ELECTRICAL DATA		REMARKS
					VOLTS	CURRENT	
KE-1	KILN ROOM	AMACO	MASTER KILN VENT	ENVIROLINK	110V	-	1

NOTES:

1. PLUG-TYPE DISCONNECT

VENTILATION INDEX BASED ON 2020 NEW YORK STATE MECHANICAL CODE - SECTION 403.3

ROOM #	TYPE	AREA (FT2)	OCCUPANT DENSITY #/1000 FT2	PEOPLE OUTDOOR AIRFLOW RATE (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE (CFM/FT2)	# OCCUPANTS/ ROOM	BREATHING ZONE OUTDOOR AIRFLOW (CFM)	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIRFLOW (CFM)
		Az	a	Rp	Ra	Pz	Vbz	Ex	Voz
CLASSROOM 101	CLASSROOMS (AGE 9 PLUS)	873	35	10	0.12	31	415	0.8	519
CLASSROOM 102	CLASSROOMS (AGE 9 PLUS)	885	35	10	0.12	31	417	0.8	522
CLASSROOM 103	CLASSROOMS (AGE 9 PLUS)	684	35	10	0.12	24	323	0.8	404
CLASSROOM 104	CLASSROOMS (AGE 9 PLUS)	664	35	10	0.12	24	320	0.8	400
CLASSROOM 105	CLASSROOMS (AGE 9 PLUS)	707	35	10	0.12	25	335	0.8	419
CLASSROOM 106	CLASSROOMS (AGE 9 PLUS)	664	35	10	0.12	24	320	0.8	400
CLASSROOM 114	CLASSROOMS (AGE 9 PLUS)	618	35	10	0.12	22	295	0.8	369
OFFICE 114B	OFFICE SPACES	130	5	5	0.06	1	13	0.8	17
VESTIBULE 111A	CORRIDORS	161	0	0	0.06	0	10	0.8	13
STORAGE 111B	STORAGE ROOMS	174	0	0	0.12	0	21	0.8	27
KITCHEN 116	KITCHENS (COOKING)	548	20	7.5	0.12	11	149	0.8	187
OFFICE 116A	OFFICE SPACES	85	5	5	0.06	1	11	0.8	14
CAFETERIA 117	CAFETERIA DINING	2787	100	7.5	0.18	279	2695	0.8	3244
CLASSROOM 121	CLASSROOMS (AGE 9 PLUS)	1010	35	10	0.12	36	482	0.8	603
CLASSROOM 122	CLASSROOMS (AGE 9 PLUS)	670	35	10	0.12	24	321	0.8	402
THERAPY ROOM 123	CLASSROOMS (AGE 9 PLUS)	443	35	10	0.12	16	214	0.8	268
CLASSROOM 124	CLASSROOMS (AGE 9 PLUS)	670	35	10	0.12	24	321	0.8	402
CLASSROOM 201	CLASSROOMS (AGE 9 PLUS)	669	35	10	0.12	31	415	0.8	519
CLASSROOM 202	CLASSROOMS (AGE 9 PLUS)	862	35	10	0.12	31	414	0.8	518
COMP. ROOM 203	COMPUTER ROOM	688	25	10	0.12	18	263	0.8	329
CLASSROOM 204	CLASSROOMS (AGE 9 PLUS)	668	35	10	0.12	24	321	0.8	402
CLASSROOM 206	CLASSROOMS (AGE 9 PLUS)	664	35	10	0.12	24	320	0.8	400
MAIN OFFICE 216	OFFICE SPACES	553	5	5	0.06	3	49	0.8	62
PRINCIPAL OFFICE 216A	OFFICE SPACES	304	5	5	0.06	2	29	0.8	37
OFFICE 216C	OFFICE SPACES	224	5	5	0.06	2	24	0.8	30
CLASSROOM 223	CLASSROOMS (AGE 9 PLUS)	727	35	10	0.12	26	348	0.8	435
CLASSROOM 224	CLASSROOMS (AGE 9 PLUS)	664	35	10	0.12	24	320	0.8	400
CLASSROOM 225	CLASSROOMS (AGE 9 PLUS)	727	35	10	0.12	26	348	0.8	435
CLASSROOM 226	CLASSROOMS (AGE 9 PLUS)	669	35	10	0.12	24	321	0.8	402
CLASSROOM 301	CLASSROOMS (AGE 9 PLUS)	596	35	10	0.12	21	282	0.8	353
CLASSROOM 303	CLASSROOMS (AGE 9 PLUS)	879	35	10	0.12	31	416	0.8	520
CLASSROOM 304	CLASSROOMS (AGE 9 PLUS)	670	35	10	0.12	24	321	0.8	402
OFFICE 308A	OFFICE SPACES	166	5	5	0.06	1	15	0.8	19
CLASSROOM 308B	CLASSROOMS (AGE 9 PLUS)	445	35	10	0.12	16	214	0.8	268
ART ROOM 307	ART CLASSROOM	1054	20	10	0.18	22	410	0.8	513
CLASSROOM 313	CLASSROOMS (AGE 9 PLUS)	777	35	10	0.12	28	374	0.8	468
CLASSROOM 322	CLASSROOMS (AGE 9 PLUS)	669	35	10	0.12	24	321	0.8	402
CLASSROOM 323	CLASSROOMS (AGE 9 PLUS)	724	35	10	0.12	26	347	0.8	434
OFFICE 324	OFFICE SPACES	153	5	5	0.06	1	15	0.8	19
CLASSROOM 325	CLASSROOMS (AGE 9 PLUS)	732	35	10	0.12	26	348	0.8	435
CLASSROOM 326	CLASSROOMS (AGE 9 PLUS)	530	35	10	0.12	19	254	0.8	318

(a) AREA PROVIDED WITH NATURAL VENTILATION IN ACCORDANCE WITH 2020 NEW YORK STATE MECHANICAL CODE - SECTION 402

ENERGY RECOVERY VENTILATORS

EQUIP. NO.	LOCATION	PERFORMANCE/CONSTRUCTION REQUIREMENTS													REMARKS				
		SUPPLY FAN		SUMMER ENERGY RECOVERY		WINTER ENERGY RECOVERY			MANUFACTURER	MODEL NO.	NOMINAL DIMENSIONS L" x W" x H"	NOMINAL OPERATING WEIGHT (LBS.)	ELECTRICAL DATA						
		OUTSIDE AIR (CFM)	E.S.P. (IN W.G.)	TOTAL EFFECT. (%)	OA ENT. DB/WB (°F)	LVG DB/WB (°F)	TOTAL EFFECT. (%)	OA ENT. DB (°F)					LVG DB (°F)	VOLTS/ PHASE		HP	FLA (A)	MCA (A)	MOP (A)
ERV-1	MAIN OFFICE 216	138	0.35	63.2	89.9/73.9	75.0/62.5	77.8	9.0	70.0	RENEWAIRE	EV PREMIUM LH	23.75 x 22.5 x 24.25	52	120/ 1-PH	0.11	1.22	15	15	1-5

NOTES:

1. HARD-WIRED UNIT
2. LOUVERED WALL VENT
3. BACK DRAFT DAMPER.
4. TIME CLOCK CONTROLLER
5. NON-FUSED DISCONNECT

EXHAUST FANS

EQUIPMENT NO.	LOCATION	TYPE	PERFORMANCE/CONSTRUCTION REQUIREMENTS			BASIS OF DESIGN INFORMATION							REMARKS
			CFM	EXT S. P. (IN. W.C.)	FAN/MOTOR RPM	MNF	MODEL NO.	NOMINAL DIMENSION L x W x H (IN.)	NOMINAL OPERATING WEIGHT (LBS.)	ELECTRICAL DATA			
										VOLTS/ PHASE	MCA	MOCP	
EF-1	ROOF	DOWNBLAST	2620	0.35	483	GREENHECK	G-240-VG	42.8 x 42.8 x 43.5	239	208 / 1	16	25	1-6,8
EF-2	ROOF	DOWNBLAST	2620	0.35	483	GREENHECK	G-240-VG	42.8 x 42.8 x 43.5	239	208 / 1	16	25	1-6,8
EF-5	ROOF	DOWNBLAST	2270	0.35	628	GREENHECK	G-200-VG	35.5 x 35.5 x 40.0	151	208 / 1	9	15	1-6,8
EF-6	ROOF	DOWNBLAST	2270	0.35	628	GREENHECK	G-200-VG	35.5 x 35.5 x 40.0	151	208 / 1	9	15	1-6,8
EF-7	ROOF	DOWNBLAST	740	0.51	1140	GREENHECK	G-120-B	24.4 x 24.4 x 35.7	79	208 / 1	-	-	1-5,7-8
EF-8	ROOF	DOWNBLAST	2100	0.35	608	GREENHECK	G-200-VG	35.5 x 35.5 x 40.0	151	208 / 1	9	15	1-6,8

NOTES:

1. BACKDRAFT DAMPER
2. GALVANIZED BIRDSSCREEN
3. ADAPTER CURB
4. ELECTRICAL TO PROVIDE TIME CLOCK
5. FACTORY PROVIDED NEMA-1 DISCONNECT
6. GRAVITY OPERATED DAMPER MODEL WD-100
7. GRAVITY OPERATED DAMPER MODEL BD-100
8. VARI-GREEN EC MOTOR WITH DIAL FOR BALANCING/CONTROL

AIR OUTLETS

DESIGNATION	SYMBOL	BASIS OF DESIGN: MNF/ MODEL NO.	TYPE	NOM. FACE SIZE (IN)	AIR FLOW RANGE (CFM)		NECK SIZE DIAMETER (IN.)	REMARKS
					MIN	MAX		
A		NAILOR/UNI	SQUARE FACE CEILING DIFFUSER	24 X 24 UNLESS OTHERWISE NOTED ON DRAWINGS	0	200	6	1-6
					201	315	8	
					316	450	10	
					451	650	12	
B		NAILOR/6145H	RETURN GRILLE	24x24 UNLESS OTHERWISE NOTED ON DRAWINGS	SEE DRAWINGS	SEE DRAWINGS	NA	1-6
					SEE DRAWINGS	SEE DRAWINGS	NA	
					SEE DRAWINGS	SEE DRAWINGS	NA	
					SEE DRAWINGS	SEE DRAWINGS	NA	
C		NAILOR/6145H	EXHAUST GRILLE	24x24 UNLESS OTHERWISE NOTED ON DRAWINGS	SEE DRAWINGS	SEE DRAWINGS	NA	1-6
					SEE DRAWINGS	SEE DRAWINGS	NA	
					SEE DRAWINGS	SEE DRAWINGS	NA	
					SEE DRAWINGS	SEE DRAWINGS	NA	

NOTES:

1. PROVIDE ALUMINUM CONSTRUCTION FOR ALL AIR TERMINALS IN SHOWER ROOMS, TOILETS, JANITORS' CLOSETS AND OTHER HUMID AREAS.
2. FOR CONSTRUCTION DETAILS AND ACCESSORIES SEE THE SPECIFICATIONS.
3. FOR VARIABLE VOLUME SYSTEMS SELECT DIFFUSER NECK SIZES SUCH THAT BOTH MAXIMUM AND MINIMUM AIR FLOWS FALL WITHIN MANUFACTURERS' CATALOGUED MAXIMUM AND MINIMUM AIR FLOW RATINGS. MAXIMUM AIR FLOW PRODUCING AN NC RATING OF 25 TO 30 AND MINIMUM FLOW PRODUCING A LISTED THROW.
4. PROVIDE OPPOSED BLADE DAMPER FOR ALL REGISTERS.
5. PROVIDE OPPOSED BLADE DAMPER AND EQUALIZING GRID FOR ALL DIFFUSERS.
6. PROVIDE MOUNTING FRAMES TO MATCH CEILING IN WHICH UNIT IS INSTALLED, COUNTERSINK ALL MOUNTING SCREWS.

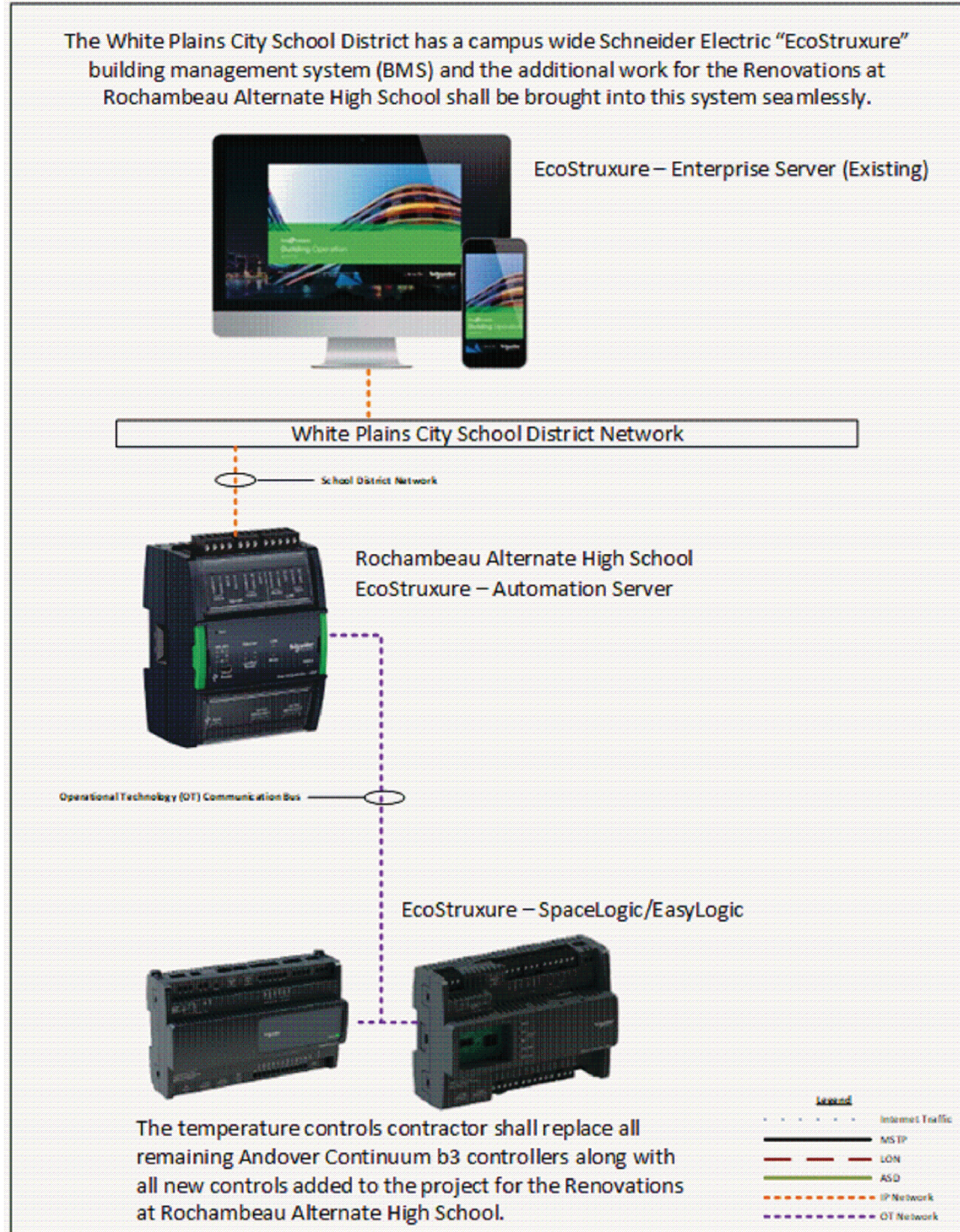
LOUVERS

EQUIPMENT NO.	LOCATION	SYSTEM SERVED	PERFORMANCE/CONSTRUCTION REQUIREMENTS					BASIS OF DESIGN INFORMATION		REMARKS
			AIR FLOW RATE (CFM)	MAX. PD (IN. W.C.)	FREE AREA (SQ. FT.)	OVERALL NOMINAL SIZE W X H	SERVICE	MANUFACTURER	MODEL NO.	
LV-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LV-2	REFER TO PLANS	UNIT VENTILATOR	750	0.05	1.33	34" x 15"	OUTDOOR AIR INTAKE	GREENHECK	ESD-435	1-4
LV-3	REFER TO PLANS	UNIT VENTILATOR	1500	0.14	1.63	41" x 15"	OUTDOOR AIR INTAKE	GREENHECK	ESD-435	1-4
LV-4	REFER TO PLANS	UNIT VENTILATOR	1500	0.11	1.85	46" x 15"	OUTDOOR AIR INTAKE	GREENHECK	ESD-435	1-4
LV-5	REFER TO PLANS	UNIT VENTILATOR	1500	0.1	1.95	50" x 15"	OUTDOOR AIR INTAKE	GREENHECK	ESD-435	1-4
LV-6	REFER TO PLANS	UNIT VENTILATOR	1250	0.06	2.04	52" x 15"	OUTDOOR AIR INTAKE	GREENHECK	ESD-435	1-4
LV-7	REFER TO PLANS	UNIT VENTILATOR	750	0.02	2.21	56" x 15"	OUTDOOR AIR INTAKE	GREENHECK	ESD-435	1-4

NOTES:

1. COLOR OF LOUVER TO BE COORDINATED WITH SCHOOL PRIOR TO ORDERING
2. GLAZING ADAPTER
3. DRAINABLE
4. SCHEDULE FOR REFERENCE ONLY. LOUVER PROVIDED AND INSTALLED BY CONTRACT 'W'. CONTRACT 'M' TO COORDINATE WITH CONTRACT 'W'.

BUILDING AUTOMATION (BAS) / BUILDING MANAGEMENT SYSTEM (BMS) SCOPE OF WORK



SCOPE OVERVIEW

1. PROVIDE A NEW SCHNEIDER ELECTRIC "ECOSTRUXURE" BUILDING AUTOMATION SYSTEM (BAS) FOR CONTROL AND MONITORING OF ALL HVAC EQUIPMENT INSTALLED UNDER THIS PROJECT. THE NEW BAS SHALL INCLUDE THE FOLLOWING:
 1. ADD AS-P IP CONTROLLER TO THE BUILDING.
 2. BRING AS-P INTO WHITE PLAINS SITE WIDE ENTERPRISE SERVER.
 3. PROVIDE WORKSTATION ON DISTRICT BMS VLAN.
 4. MP-C / RP-C FIELD CONTROLLERS FOR EQUIPMENT.
2. CONVERT EXISTING ANDOVER "CONTINUUM" BAS TO SCHNEIDER ELECTRIC "ECOSTRUXURE". REPLACE ALL CONTROLLERS AND MIGRATE EXISTING