Report By:

National TAB
1329 E. KEMPER ROAD
SUITE 4210
CINCINNATI, OH 45246

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 02/09/2024

PROJECT

Charlestown HS Locker Rm (Charlestown, IN)

1 Pirate Pl

Charlestown, IN 47111

Client

Perfection Group

2649 Commerce Boulevard

Cincinnati, OH 45241

National TAB

Project: Charlestown HS Locker Rm (Charlestown, IN)

System/Unit: Split Sys Furnace

Asset: AC-1 AREA:STORAGE

Unit Data		
	Design	**Actual**
MFG	NA	CARRIER
Model Num	NA	FV4CNF002L00EEAA
Serial Num	-	2723F22775
Configuration	VERTICAL	VERTICAL
Filter Size Size 1	-	16X20X1

Motor Data		
	Design	**Actual**
Motor MFG	-	GENTEQ
Frame	-	NL
Horsepower	0.50	0.50
Motor Rpm	-	NL
Phase	1	1
Voltage	208	208
Amperage	-	4.3

Test Data		
	Design	**Actual**
SF CFM	800	824
Motor Speed SetPt	-	LO
RL Voltage	-	207.2
RL Amperage	-	0.76
RA CFM	680	824
OA CFM	120	0

Performance Data		
	Design	**Actual**
Suction ESP	-	-0.10"
Discharge ESP	-	0.02"
Total ESP	0.50	0.12"

Completed By: Tyler Youells on 02/06/2024

Notes:
AC-2 SUCTION PRESSURE IS OVERPOWERING AC-1's ABILITY TO PULL IN OA, THERE ARE NO RETURN DAMPERS PRESENT TO INCREASE AC-1 SUCTION PRESSURE TO TRY TO PULL MORE OA

Written By: Tyler Youells on 02/06/2024

National TAB

Project:Charlestown HS Locker Rm (Charlestown, IN)

Split Sys Furnace

Diffuser Supply (GRD)

AC-1/STORAGE

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1-1	STORAGE	SR-1	12X12	300	584	315	105.0
1-2		SR-1	12X12	500	502	509	101.8
Total				800	1086	824	103%

National TAB

Project: Charlestown HS Locker Rm (Charlestown, IN)

System/Unit: Split Sys Furnace

Asset: AC-2 AREA:LOCKERS

Unit Data		
	Design	**Actual**
MFG	NA	CARRIER
Model Num	NA	FV4CNB006L00EEAA
Serial Num	-	1122F01750
Configuration	VERTICAL	VERTICAL
Filter Size Size 1	-	22X23X1

Motor Data		
	Design	**Actual**
Motor MFG	-	GENTEQ
Frame	-	NL
Horsepower	0.75	0.75
Motor Rpm	-	NL
Phase	1	1
Voltage	208	208
Amperage	-	6.8

Test Data		
	Design	**Actual**
SF CFM	2000	2049
Motor Speed SetPt	-	HI
RL Voltage	-	206.9
RL Amperage	-	6.21
RA CFM	1400	1426
OA CFM	600	623

Performance Data		
	Design	**Actual**
Suction ESP	-	-0.39"
Discharge ESP	-	0.18"
Total ESP	0.50	0.57"

Completed By: Tyler Youells on 02/06/2024

Notes:
DESIGN IS 1750 CFM
DIFFUSER TOTAL IS 2000 CFM

Written By: Michael Gabbert on 01/24/2024

National TAB

Project:Charlestown HS Locker Rm (Charlestown, IN)

Split Sys Furnace

Diffuser Supply (GRD)

AC-2/LOCKERS

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2-1	LOCKERS	CD-1	12	500	585	525	105.0
2-2	HALL	CD-1	6	100	121	108	108.0
2-3	RR	CD-1	6	125	93	118	94.4
2-4	RR	CD-1	6	125	23	123	98.4
2-5		CD-1	10	275	306	284	103.3
2-6		CD-1	10	275	325	279	101.5
2-7	HALL	CD-1	6	100	519	102	102.0
2-8	LOCKERS	CD-1	12	500	109	510	102.0
Total				2000	2081	2049	102.45%

National TAB

Project: Charlestown HS Locker Rm (Charlestown, IN)

System/Unit: Split Sys Furnace

Asset: AC-3 AREA:OFFICE

Unit Data		
	Design	**Actual**
MFG	NA	CARRIER
Model Num	NA	FV4CNB006L00EEAA
Serial Num	-	3422F06560
Configuration	VERTICAL	VERTICAL
Filter Size Size 1	-	22X23X1

Motor Data		
	Design	**Actual**
Motor MFG	-	GENTEQ
Frame	-	NL
Horsepower	0.75	0.75
Motor Rpm	-	NL
Phase	1	1
Voltage	208	208
Amperage	-	6.8

Test Data		
	Design	**Actual**
SF CFM	2000	2011
Motor Speed SetPt	-	HI
RL Voltage	-	206.9
RL Amperage	-	6.81
RA CFM	1600	1582
OA CFM	400	429

Performance Data		
	Design	**Actual**
Suction ESP	-	-0.45"
Discharge ESP	-	0.10"
Total ESP	0.50	0.55"

Completed By: Tyler Youells on 02/06/2024

Notes:
DESIGN IS 1750 CFM
DIFFUSER TOTAL IS 2000 CFM

Written By: Michael Gabbert on 01/24/2024

National TAB

Project:Charlestown HS Locker Rm (Charlestown, IN)

Split Sys Furnace

Diffuser Supply (GRD)

AC-3/OFFICE

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
3-1	RR	CD-1	10	250	272	252	100.8
3-2	RR	CD-1	6	125	98	117	93.6
3-3		CD-1	12	400	409	437	109.3
3-4	RR	CD-1	6	125	82	125	100.0
3-5		CD-1	12	400	439	392	98.0
3-6	OFFICE	CD-1	10	350	396	342	97.7
3-7	OFFICE	CD-1	10	350	333	346	98.9
Total				2000	2029	2011	100.55%

National TAB

Project: Charlestown HS Locker Rm (Charlestown, IN)

System/Unit: Split Sys Furnace

Asset: AC-4 AREA:LOCKERS

Unit Data		
	Design	**Actual**
MFG	NA	CARRIER
Model Num	NA	FV4CNB006L00EEAA
Serial Num	-	3422F06562
Configuration	VERTICAL	VERTICAL
Filter Size Size 1	-	22X23X1

Motor Data		
	Design	**Actual**
Motor MFG	-	GENTEQ
Frame	-	NL
Horsepower	0.75	0.75
Motor Rpm	-	NL
Phase	1	1
Voltage	208	208
Amperage	-	6.8

Test Data		
	Design	**Actual**
SF CFM	2000	1856
Motor Speed SetPt	-	HI
RL Voltage	-	207.8
RL Amperage	-	5.42
RA CFM	1250	1163
OA CFM	750	693

Performance Data		
	Design	**Actual**
Suction ESP	-	-0.43"
Discharge ESP	-	0.07"
Total ESP	0.50	0.50"

Completed By: Tyler Youells on 02/06/2024

Notes:
DESIGN IS 1750 CFM
DIFFUSER TOTAL IS 1980 CFM

Written By: Michael Gabbert on 01/24/2024

National TAB

Project:Charlestown HS Locker Rm (Charlestown, IN)

Split Sys Furnace

Diffuser Supply (GRD)

AC-4/LOCKERS

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4-1	LOCKERS	CD-1	10	330	313	316	95.8
4-2	LOCKERS	CD-1	10	330	262	303	91.8
4-3	LOCKERS	CD-1	10	330	336	312	94.5
4-4	LOCKERS	CD-1	10	330	326	309	93.6
4-5	LOCKERS	CD-1	10	330	299	304	92.1
4-6	LOCKERS	CD-1	10	330	295	312	94.5
Total				1980	1831	1856	93.74%

National TAB

Project: Charlestown HS Locker Rm (Charlestown, IN)

System/Unit: Split Sys Furnace

Asset: AC-5 AREA:STORAGE

Unit Data		
	Design	**Actual**
MFG	NA	CARRIER
Model Num	NA	FV4CNF003L00EEAA
Serial Num	-	2723F39798
Configuration	VERTICAL	VERTICAL
Filter Size Size 1	-	20X20X1

Motor Data		
	Design	**Actual**
Motor MFG	-	GENTEQ
Frame	-	NL
Horsepower	0.50	0.50
Motor Rpm	-	NL
Phase	1	1
Voltage	208	208
Amperage	-	4.3

Test Data		
	Design	**Actual**
SF CFM	1200	1218
Motor Speed SetPt	-	HI
RL Voltage	-	206.8
RL Amperage	-	4.28
RA CFM	900	762
OA CFM	300	409

Performance Data		
	Design	**Actual**
Suction ESP	-	-0.53"
Discharge ESP	-	0.05"
Total ESP	0.50	0.58"

Completed By: Tyler Youells on 02/06/2024

Notes:
MISSING A DAMPER ON THE OA DUCT, AND A RETURN GRILLE IS MISSING IN THE MECHANICAL ROOM [2/6/24]

Written By: Tyler Youells on 02/06/2024

National TAB

Project:Charlestown HS Locker Rm (Charlestown, IN)

Split Sys Furnace

Diffuser Supply (GRD)

AC-5/STORAGE

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
5-1	RR	CD-1	12	400	388	395	98.8
5-2	HALL	CD-1	8	200	226	202	101.0
5-3	STORAGE	CD-1	10	300	439	293	97.7
5-4	STORAGE	CD-1	10	300	167	328	109.3
Total				1200	1220	1218	101.5%

National TAB

Project: Charlestown HS Locker Rm (Charlestown, IN)

System/Unit: FAN - Exhaust

Asset: EF-1 AREA:LOCKER

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	SQ-99-VG
Serial Num	-	22696331
Type	INLINE	INLINE

Test Data		
	Design	**Actual**
CFM	650	635
RL Voltage	-	118.1
RL Amperage	-	2.69
Total ESP	0.5	0.51"

Motor Data		
	Design	**Actual**
Motor MFG	-	NO ACCESS
Frame	-	NO ACCESS
Horsepower	0.25	0.25
Motor Rpm	1725	1725
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	3.5
Service Factor	-	1

Completed By: Tyler Youells on 02/06/2024

National TAB

Project:Charlestown HS Locker Rm (Charlestown, IN)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-1/LOCKER

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
E1-1	EG-1	6	150	1	252	149	149	99.3
E1-2	EG-1	6	175	1	190	177	177	101.1
E1-3	EG-1	6	175	1	153	164	164	93.7
E1-4	EG-1	6	150	1	145	145	145	96.7
Total			650		740	635	635	97.69%

National TAB

Project: Charlestown HS Locker Rm (Charlestown, IN)

System/Unit: FAN - Exhaust

Asset: EF-2 AREA:RR

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	SQ-98-VG
Serial Num	-	22696331
Type	INLINE	INLINE

Test Data		
	Design	**Actual**
CFM	475	0
RL Voltage	-	
RL Amperage	-	
Total ESP	0.5	

Motor Data		
	Design	**Actual**
Motor MFG	-	NO ACCESS
Frame	-	NO ACCESS
Horsepower	0.25	0.25
Motor Rpm	1725	1725
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	2.85
Service Factor	-	1

Completed By: Tyler Youells on 02/06/2024

Notes:
DESIGN IS 475 CFM
GRILLE TOTAL IS 550 CFM

PER MC UNIT HAS BAD MOTOR AND NEEDS REPLACEMENT [2/6/24]

Written By: Tyler Youells on 02/06/2024

National TAB

Project:Charlestown HS Locker Rm (Charlestown, IN)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-2/RR

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
2-1	EG-1	.	250					-
2-2	EG-1	6	150					-
2-3	EG-1	6	150					-
Total			550		0	0	0	0%

National TAB

Project: Charlestown HS Locker Rm (Charlestown, IN)

System/Unit: FAN - Exhaust

Asset: EF-3 AREA:LOCKERS

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	SQ-100-VG4X-QD
Serial Num	-	21150185
Type	INLINE	INLINE

Test Data		
	Design	**Actual**
CFM	750	758
RL Voltage	-	116.2
RL Amperage	-	2.29
Total ESP	0.5	0.42"

Motor Data		
	Design	**Actual**
Motor MFG	-	NO ACCESS
Frame	-	NO ACCESS
Horsepower	0.25	0.25
Motor Rpm	1725	1725
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	2.85
Service Factor	-	1

Completed By: Tyler Youells on 02/06/2024

National TAB

Project:Charlestown HS Locker Rm (Charlestown, IN)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-3/LOCKERS

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
3-1	EG-2	12	750	1	996	758	758	101.1
Total			750		996	758	758	101.07%

National TAB

Project: Charlestown HS Locker Rm (Charlestown, IN)

System/Unit: FAN - Exhaust

Asset: EF-4 AREA:RR

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	SQ-95-VG6X-QD
Serial Num	-	21669454
Type	INLINE	INLINE

Test Data		
	Design	**Actual**
CFM	300	311
RL Voltage	-	117.2
RL Amperage	-	1.6
Total ESP	0.5	0.11"

Motor Data		
	Design	**Actual**
Motor MFG	-	NO ACCESS
Frame	-	NO ACCESS
Horsepower	0.167	0.167
Motor Rpm	1725	1725
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	2.2
Service Factor	-	1

Completed By: Tyler Youells on 02/06/2024

National TAB

Project:Charlestown HS Locker Rm (Charlestown, IN)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-4/RR

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
4-1	EG-3	8X8	50	1	104	54	54	108.0
4-2	EG-3	8X8	50	1	100	55	55	110.0
4-3	EG-3	8X8	50	1	87	49	49	98.0
4-4	EG-3	8X8	50	1	144	52	52	104.0
4-5	EG-3	8X8	50	1	141	47	47	94.0
4-6	EG-3	8X8	50	1	127	54	54	108.0
Total			300		703	311	311	103.67%

National TAB

Project: Charlestown HS Locker Rm (Charlestown, IN)

System/Unit: FAN - Exhaust

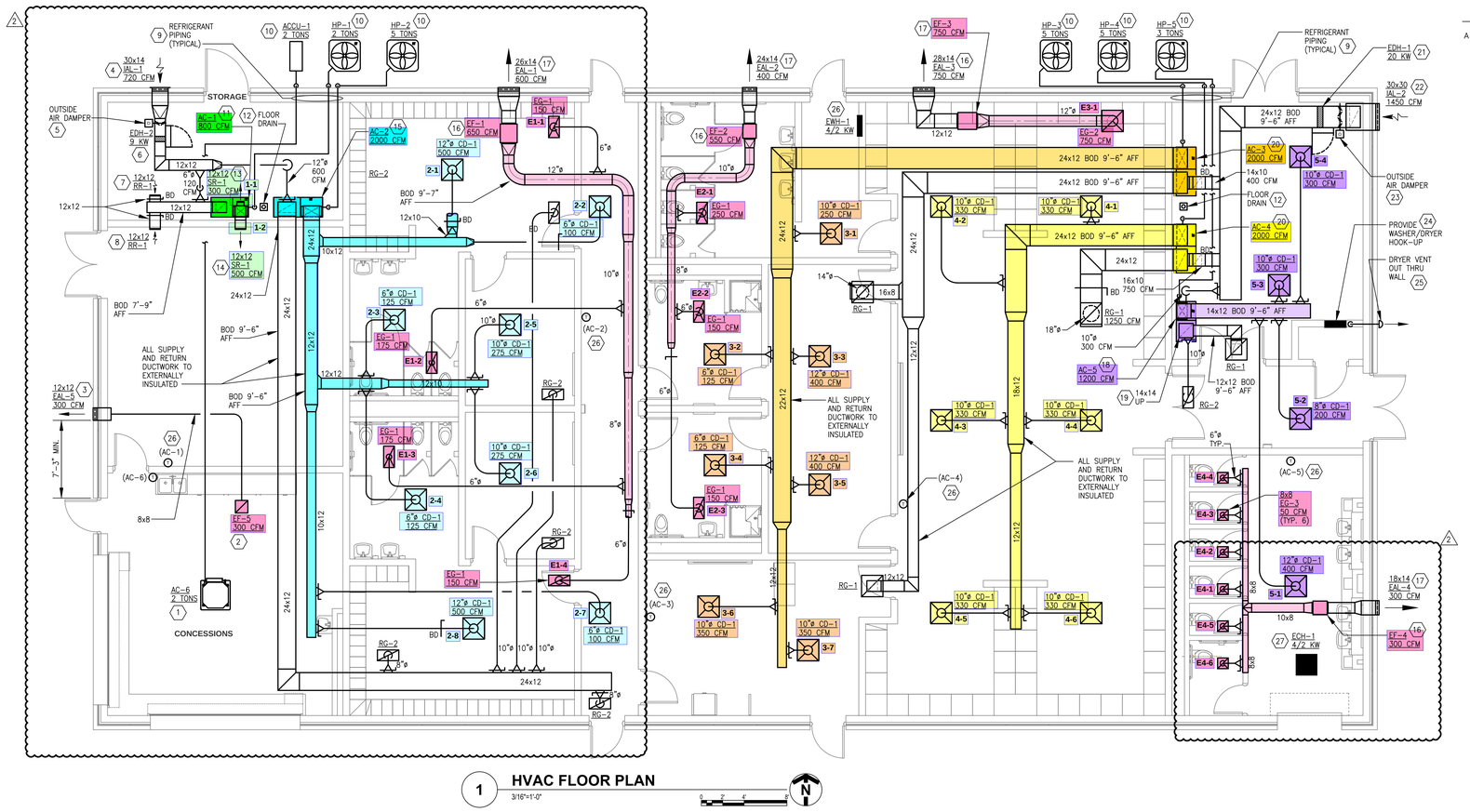
Asset: EF-5 AREA:CONCESSIONS

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	SP-A390-VG
Serial Num	-	22665658
Type	CEILING	CEILING

Test Data		
	Design	**Actual**
CFM	300	307
RL Voltage	-	116.2
RL Amperage	-	1.49
Total ESP	0.375	NO ACCESS

Motor Data		
	Design	**Actual**
Motor MFG	-	VARIGREEN
Frame	-	NL
Horsepower	58W	1/10
Motor Rpm	1282	1750
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	1.5
Service Factor	-	1

Completed By: Tyler Youells on 02/06/2024



1 **HVAC FLOOR PLAN**
3/16"=1'-0"

GENERAL NOTES:

A ALL SUPPLY AND RETURN DUCTWORK TO BE EXTERNALLY INSULATED.

KEYNOTES

1 INSTALL AC-6 IN CEILING GRID. SUPPORT FROM STRUCTURE ABOVE PER MANUFACTURER'S INSTRUCTIONS. ROUTE REFRIGERANT PIPING AS SHOWN TO CONDENSING UNIT OUTDOORS. ROUTE CONDENSATE DRAIN TO FLOOR DRAIN IN MECHANICAL ROOM.

2 MOUNT IN CEILING. FAN TO BE ENERGIZED BY TIMER SWITCH ON WALL. ROUTE EXHAUST DUCT OUT THRU WALL ABOVE CEILING AS SHOWN.

3 INSTALL TOP OF LOUVER ONE COURSE BELOW TOP OF CMU WALL. SEAL AROUND LOUVER WATER-TIGHT. PROVIDE FULL SIZE DUCT THRU WALL FOR CONNECTION OF EXHAUST AIR MAIN. COORDINATE LOUVER LOCATION WITH CANOPY TO BE INSTALLED OVER CONCESSION DOOR.

4 INSTALL LOUVER IN WALL AT TOP OF CMU WALL. SEAL AROUND LOUVER WATER-TIGHT. PROVIDE FULL SIZE DUCT THRU WALL FOR CONNECTION OF OUTSIDE AIR MAIN.

5 PROVIDE MOTORIZED DAMPER IN DUCT. DAMPER TO BE INTERLOCKED WITH AC UNITS TO OPEN WHEN UNITS ARE RUNNING.

6 MOUNT IN DUCT. DUCT HEATER TO OPERATE WHEN OUTDOOR AIR TEMPERATURE IS BELOW 50°F.

7 MOUNT ON SIDE OF DUCT.

8 MOUNT FLUSH WITH WALL.

9 ROUTE ABOVE CEILING TO ASSOCIATED AC UNIT. PENETRATE EXTERIOR WALL ABOVE CEILING AND ROUTE DOWN WALL TO CONDENSING UNIT. **VERIFY LINESET SIZING WITH VENDOR PRIOR TO RUNNING ANY PIPING.**

10 MOUNT HEAT PUMP CONDENSING UNIT ON CONCRETE PAD PER MANUFACTURER'S INSTRUCTIONS.

11 MOUNT ON 4" CONCRETE HOUSEKEEPING PAD. UNIT TO SIT ON 24" TALL PLENUM BOX WITH FILTER RACK. COORDINATE REQUIRED PLENUM LENGTH AS REQUIRED FOR CONNECTION OF RETURN DUCT AS SHOWN.

12 ROUTE AC UNIT CONDENSATE DRAINS TO FLOOR DRAIN. COORDINATE WITH PLUMBING CONTRACTOR.

13 MOUNT ON FACE OF VERTICAL SUPPLY DUCT AT 7'-6" AFF.

14 MOUNT FLUSH WITH WALL AT 7'-6" AFF.

15 MOUNT ON 4" CONCRETE HOUSEKEEPING PAD. UNIT TO SIT ON 24" TALL PLENUM BOX WITH FILTER RACK. COORDINATE REQUIRED PLENUM LENGTH AS REQUIRED FOR CONNECTION OF RETURN DUCT AS SHOWN.

16 MOUNT TIGHT TO ROOF STRUCTURE ABOVE CEILING. SUPPORT FROM STRUCTURE USING VIBRATION ISOLATORS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE LOCATION OF FAN WITH DRYWALL SOFFIT OVER SINKS. DO NOT MOUNT FAN OVER SOFFIT TO ALLOW FOR ACCESS THRU DROP CEILING.

17 INSTALL TOP OF LOUVER ONE COURSE BELOW TOP OF CMU WALL. SEAL AROUND LOUVER WATER-TIGHT. PROVIDE FULL SIZE DUCT THRU WALL FOR CONNECTION OF EXHAUST AIR MAIN.

18 MOUNT ON 4" CONCRETE HOUSEKEEPING PAD. UNIT TO SIT ON 24" TALL PLENUM BOX WITH FILTER RACK. COORDINATE REQUIRED PLENUM LENGTH AS REQUIRED FOR CONNECTION OF RETURN DUCT AS SHOWN. CONNECT OUTSIDE AIR DUCT TO SIDE OF PLENUM BOX WITH BALANCE DAMPER.

19 ROUTE UP AND TERMINATE ABOVE CEILING HIGH ENOUGH TO MAKE DUCT CONNECTIONS AS SHOWN.

20 MOUNT ON 4" CONCRETE HOUSEKEEPING PAD. UNIT TO SIT ON 24" TALL PLENUM BOX WITH FILTER RACK. COORDINATE REQUIRED PLENUM LENGTH AS REQUIRED FOR CONNECTION OF RETURN DUCT AS SHOWN.

21 MOUNT IN DUCT. DUCT HEATER TO OPERATE WHEN OUTDOOR AIR TEMPERATURE IS BELOW 50°F.

22 LOUVER TO BE MOUNTED IN CMU WALL 18" ABOVE GRADE. SEAL AROUND LOUVER WATER-TIGHT. PROVIDE FULL SIZE DUCT THRU WALL FOR CONNECTION OF OUTSIDE AIR MAIN IN TOP OF PLENUM AS SHOWN.

23 PROVIDE MOTORIZED DAMPER IN DUCT. DAMPER TO BE INTERLOCKED WITH AC UNITS TO OPEN WHEN UNITS ARE RUNNING.

24 COORDINATE WITH EQUIPMENT LOCATION.

25 TERMINATE IN WALL ABOVE CEILING WITH DRYER VENT WALL CAP. COORDINATE DUCT AND CAP SIZE WITH EQUIPMENT REQUIREMENTS.

2 26 MOUNT RECESSED INTO WALL.

27 MOUNT IN CEILING. COORDINATE WITH OTHER TRADES.

LOUVER SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	MAX AIRFLOW (CFM)	VELOCITY (FPM)	MAX DELTA P (IN WG)	FRAME SIZE (WIDTHxHEIGHT) (IN)	GROSS AREA (SQ FT)	FREE AREA (SQ FT)	MATERIAL	DAMPER TYPE	ACCESSORIES
IAL-1	GREENHECK	ESD-435	WALL	750	700	0.08	30x14	2.92	1.04	ALUMINUM	GRAVITY	1,2,3,4
IAL-2	GREENHECK	ESD-435	WALL	1700	700	0.08	30x30	6.25	2.9	ALUMINUM	GRAVITY	1,2,3,4
EAL-1	GREENHECK	ESD-435	WALL	650	700	0.08	26x14	2.52	0.89	ALUMINUM	N/A	1,2,3
EAL-2	GREENHECK	ESD-435	WALL	550	700	0.08	24x14	2.33	0.75	ALUMINUM	N/A	1,2,3
EAL-3	GREENHECK	ESD-435	WALL	750	700	0.08	28x14	2.72	0.97	ALUMINUM	N/A	1,2,3
EAL-4	GREENHECK	ESD-435	WALL	450	700	0.08	18x14	2.67	0.58	ALUMINUM	N/A	1,2,3
EAL-5	GREENHECK	ESD-435	WALL	300	700	0.08	12x12	1	0.35	ALUMINUM	N/A	1,2,3

1. MILL FINISH ALUMINUM
2. MESH BIRD SCREEN
3. FLANGE FRAME
4. PROVIDE WITH GRAVITY DAMPER

FAN SCHEDULE

TAG	MANUFACTURER	MODEL	AREA SERVED	LOCATION	FAN TYPE	AIRFLOW (CFM)	ESP (IN WG)	FAN MOTOR (RPM)	DRIVE TYPE	DAMPER TYPE	ELECTRICAL VOLT/PHASE	ELECTRICAL HP	ACCESSORIES
EF-1	GREENHECK	SQ-99-VG	RR/LOCKER	CEILING	INLINE	650	0.5	1519	DD	GRAVITY	115/1/60	1/4	1
EF-2	GREENHECK	SQ-98-VG	RESTROOM	CEILING	INLINE	550	0.5	1583	DD	GRAVITY	115/1/60	1/4	1
EF-3	GREENHECK	SQ-100-VG	LOCKER ROOM	CEILING	INLINE	750	0.5	1317	DD	GRAVITY	115/1/60	1/4	1
EF-4	GREENHECK	SQ-95-VG	RESTROOM	CEILING	INLINE	450	0.375	1398	DD	GRAVITY	115/1/60	1/6	1
EF-5	GREENHECK	SP-A390-VG	CONCESSIONS	CEILING	CABINET	300	0.375	1282	DD	GRAVITY	115/60/1	58 WATTS	2

1. PROVIDE WITH VARIGREEN MOTOR, SPEED CONTROL, VIBRATION ISOLATORS AND GRAVITY DAMPER.
2. CEILING MOUNT, FAN ENERGIZED BY WALL MOUNTED TIMER SWITCH.

AIR DEVICE SCHEDULE

TAG	DESIGN BASIS MANUFACTURER	DESIGN BASIS MODEL NUMBER	TYPE	NECK SIZE (IN)	FRAME SIZE (IN)	PATTERN	NUMBER OF SLOTS	MATERIAL	FINISH	REMARKS/NOTES
CD-1	PRICE	SCD	SUPPLY	REF PLAN	24X24	4-WAY	N/A	ALUMINUM	WHITE	1
SR-1	PRICE	610	SUPPLY	REF PLAN	12x12	LOUVERED	N/A	ALUMINUM	WHITE	2
RR-1	PRICE	610	RETURN	REF PLAN	12x12	LOUVERED	N/A	ALUMINUM	WHITE	2
RG-1	PRICE	SERIES 80	RETURN	REF PLAN	24x24	EGG CRATE	N/A	ALUMINUM	WHITE	1
RG-2	PRICE	SERIES 80	RETURN	REF PLAN	24x12	EGG CRATE	N/A	ALUMINUM	WHITE	1
EG-1	PRICE	SERIES 80	EXHAUST	REF PLAN	24x12	EGG CRATE	N/A	ALUMINUM	WHITE	1
EG-2	PRICE	SERIES 80	EXHAUST	REF PLAN	24x24	EGG CRATE	N/A	ALUMINUM	WHITE	1
EG-3	PRICE	SERIES 80	EXHAUST	REF PLAN	8x8	EGG CRATE	N/A	ALUMINUM	WHITE	3

1. LAY-IN
2. DUCT MOUNT
3. PROVIDE DRYWALL CEILING MOUNTING FRAME.

2

ELECTRIC UNIT HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	AREA SERVED	TYPE	HEATING OUTPUT	KW	ELECTRICAL VOLTAGE	ELECTRICAL AMPS	ACCESSORIES
EWH-1	BERKO	FRC4020F	VESTIBULE	WALL	13650/6825	4/2	208/1	19.2/9.6	1,2,3
ECH-1	MARKEL	F3383D-RPT	RESTROOM	CEILING	13600	4	208/1	19.2	4

1. PROVIDE RECESSED MOUNTING KIT.
2. UNIT MOUNTED THERMOSTAT
3. DISCONNECT SWITCH BY ELECTRICAL CONTRACTOR
4. PROVIDE FLUSH T-BAR CEILING MOUNTING KIT.

ELECTRIC DUCT HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	DUCT SIZE	AIR FLOW (CFM)	TEMP RISE (°F)	HEAT OUTPUT (MBH)	KW	ELECTRICAL VOLT/PHASE	ACCESSORIES
EDH-1	INDEECO	XB	24x12	1500	40	69	20	208/1/60	1,2,3
EDH-2	INDEECO	XB	12x12	700	40	31	9	208/1/60	1,2,3

1. SLIDE IN
2. SCR CONTROLLER
3. STANDARD LEFT OVERHANG

SPLIT SYSTEM SCHEDULE

EVAPORATOR

TAG	MANUFACTURER	MODEL	MATING UNIT	AREA SERVED	LOCATION	VENTILATION AIRFLOW (CFM)	VENTILATION AIR (CFM)	DISCHARGE CONFIGURATION	ELEC. HEAT INPUT	EFFICIENCY (%)	ELECTRICAL VOLT/PHASE	ELECTRICAL FAN FLA	ELECTRICAL MCA (L1/L2)	ELECTRICAL MOCP (L1/L2)	ELECTRICAL MCA (L3/L4)	ELECTRICAL MOCP (L3/L4)	ACCESSORIES
AC-1	CARRIER	FJ4DNXB24L00	HP-1	STORAGE	FLOOR	800	50	VERTICAL	5	N/A	208/1	2.9	31.2	35	N/A	N/A	6
AC-2	CARRIER	FJ4DNXD60L00	HP-2	LOCKER/RR	FLOOR	1900	600	VERTICAL	15	N/A	208/1	6.1	53.8	60	45.3	50	1,6
AC-3	CARRIER	FJ4DNXD60L00	HP-3	RR/OFFICE	FLOOR	1900	550	VERTICAL	15	N/A	208/1	6.1	53.8	60	45.3	50	1,6
AC-4	CARRIER	FJ4DNXD60L00	HP-4	LOCKER/RR	FLOOR	1900	750	VERTICAL	15	N/A	208/1	6.1	53.8	60	45.3	50	1,6
AC-5	CARRIER	FJ4DNXB36L00	HP-5	RR/STORAGE	FLOOR	1200	350	VERTICAL	15	N/A	208/1	4.2	53.8	60	45.3	50	6
AC-6	MITSUBISHI	PLA-A24EA7	ACCU-1	CONCESSIONS	CEILING	810	0				208/1/60	0.49					9

CONDENSING UNIT

TAG	MANUFACTURER	MODEL	MATING UNIT	LOCATION	CONDENSING UNIT Tons	CONDENSING UNIT SEER	COOLING TOTAL (MBH)	COOLING SENSIBLE (MBH)	ELECTRICAL VOLT/PHASE	ELECTRICAL MCA	ELECTRICAL MOCP	WEIGHT	ACCESSORIES
HP-1	CARRIER	25SCA524A003	AC-1	GRADE	2	15	23.86	18.03	208/1/60	14.5	25	190	2,3,4,5,7,8
HP-2	CARRIER	25SCA560A003	AC-2	GRADE	5	15	57.54	43.39	208/1/60	33.2	50	293	2,3,4,5,7,8
HP-3	CARRIER	25SCA560A003	AC-3	GRADE	5	15	57.54	43.39	208/1/60	33.2	50	293	2,3,4,5,7,8
HP-4	CARRIER	25SCA560A003	AC-4	GRADE	5	15	57.54	43.39	208/1/60	33.2	50	293	2,3,4,5,7,8
HP-5	CARRIER	25SCA536A003	AC-5	GRADE	3	15	34.73	26.33	208/1/60	20.3	30	208	2,3,4,5,7,8
ACCU-1	MITSUBISHI	PUZ-A24NHA7	AC-6	GRADE	2	24.2	24	21	208/1/60	19	26		10

1. SMOKE DETECTOR
2. LOW AMBIENT PRESSURE SWITCH FOR OUTDOOR UNIT
3. ISOLATION RELAY FOR OUTDOOR UNIT
4. EVAPORATOR FREEZE THERMOSTAT FOR OUTDOOR UNIT
5. START ASSIST - CAPACITOR/RELAY TYPE FOR OUTDOOR UNIT
6. ELECTRIC HEAT WITH CIRCUIT BREAKER FOR INDOOR UNIT
7. CRANK CASE HEATER FOR OUTDOOR UNIT
8. 50' LINESET
9. PROVIDE WALL MOUNT THERMOSTAT
10. PROVIDE 80' LINESET, JACKETED METAL POWER/COMM CABLE

CHARLESTOWN HIGH SCHOOL LOCKER ROOM

1 PIRATE PL
CHARLESTOWN, IN 47111

GREATER CLARK COMMUNITY SCHOOLS

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KEY PLAN

FOR CONSTRUCTION

WILLIAM JOHN ALBRECHT REGISTERED PE10607213 STATE OF INDIANA PROFESSIONAL ENGINEER

PROJECT MANAGER: -
DRAWN BY: C. BROENNER
PROJECT NUMBER: 22159.00
PROJECT ISSUE DATE: 04.03.2023

REV. NO.	DESCRIPTION	DATE
1	REMOVED (4) ELEC. HTRS	5-15-23
2	REVISED DUCTWORK/EUH	8-23-23

HVAC FLOOR PLAN

M1

Project: Charlestown HS Locker Rm (Charlestown, IN)

Summary

TAB was completed for the Charlestown High school locker room project which consists of five split systems, four inline exhaust fans, and one ceiling exhaust fan. TAB was completed for the split systems by running all unit in high fan speed and reading the terminal devices to establish total unit flow. Total flow was adjusted via speed taps internal to the units until flow was +/-10% of design (unless otherwise noted) and once total flow was set terminal devices were set to +/- 10% of design. Outdoor air flow was measured via duct traverse of the OA duct and adjusted as necessary via balance dampers until OA flow was +/-10% of design. Final system performance was then measured for all split systems.

TAB was completed for the exhaust fans by measuring terminal devices with a flow hood to establish total unit flow. Once total flow was established the flow was adjusted as needed via internal speed control dial until flow was within +/- 10% of design unless otherwise stated. All terminal devices were balanced to +/-10% of design unless otherwise stated.

Notes:

1) There was discrepancy between layout flows and M-schedule flows for total flow and OA flows. Per MC flows were to be balanced to the layout flows.
2) AC-1 does not have enough suction pressure to pull in outdoor air, it is being overpowered by AC-2. OA flow for this unit was 0cfm.
3) AC-5 was missing a return grille and also a balance damper on the OA duct. OA flow is above design 409/300CFM.
4) EF-2 was determined to have a bad motor while onsite and TAB could not be completed.